ЗЛАРИЛ

КНИГА НА АПСТРАКТИ
ABSTRACT BOOK

Здружение на Лекари по Анестезиологија, Реанимација и Интензивно Лекување

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Хотели Метропол и Белви
Охрид, Р. С. Македонија

Metropol Lake Resort
Ohrid, R.N. Macedonia

04
07
IV
2024

VII МАКЕДОНСКИ КОНГРЕС ЗА АНЕСТЕЗИОЛОГИЈА, РЕАНИМАЦИЈА И ИНТЕНЗИВНО ЛЕКУВАЊЕ
MACEDONIAN CONGRESS OF ANAESTHESIOLOGY, REANIMATION AND INTENSIVE CARE MEDICINE

WFSA WORLD FEDERATION OF SOCIETIES OF ANAESTHESIOLOGISTS

European Society of Anaesthesiology and Intensive Care

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- Болести придружени со зголемени потреби за хранливи материи (тумори, изгореници, постоперативни состојби)
- Катаболички состојби
- Ограничен внес на течности
- Воспалителна болест на цревата
- Тотална гастректомија
- Дисфагија
- Синдром на кратко црево

ДОЗИРАЊЕ
Количината на храна ја одредува исклучиво лекарот, во зависност од состојбата на пациентот, степенот на исхрана и возраста. Препорачаната дневна количина е 1500-3000 kcal, или 2 - 4 шишиња (30 - 35 kcal / kg / ден), во зависност од потребите на пациентот

Нето количина: 500 ml

Произведува: N.V.NUTRICIA Zoetermeer, Холандија
Увозник и дистрибутер: Европа Лек дооел, УЛ,,Јадранска магистрала,, br. 31, 1000 Скопје

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Почитувани колеги и пријатели,

Со особена чест и задоволство, Ви посакувам добредојде на 7от Македонски Конгрес за анестезиологија, реанимација и интензивно лекување, организиран од Македонското Здружение на лекари по анестезиологија, реанимација и интензивно лекување (ЗЛАРИЛ) во Охрид.

Научниот Одбор посвети големо внимание на инкорпорирање актуелни и атрактивни теми како што се: вештачката интелигенција во секојдневната пракса, одржливоста во анестезијата и интензивното лекување, предизвиците на работното место, новите сознанија за регионалната анестезија, новите терапии кои ја модулираат акутната и хроничната болка, ERAS-протоколите, примената на утразвукот во анестезијата (PoCUS), трансплантација на органи од починати донори, обезбедување на дишен пат и примена на неинвазивна и инвазивна респираторна поддршка, особености во интензивното лекување на пациенти, бубрежно заместителна терапија -CRRT, особености на различна периоперативна анестезија како гинеколошко-обстетрична, кардио анестезија, справување со педијатриски и неврохируршки пациенти и друго.

Вашето присуство и активно учество, има голема вредност и е од суштинско значење за успехот на нашиот Конгрес.

Наша желба е да се погрижиме Вашата посета да биде професионално и социјално збогатена и секој од Вас да понесе прекрасни сеќавања од нашиот Охрид и Македонија.

Насл. Доц. д-р Весна Дурнев,

Претседател на Здружението на
лекари по анестезиологија,
реанимација и интензивно лекување
ЗЛАРИЛ

Respective Colleagues and friends,

With particular honor and pleasure, I welcome you to the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, organized by the Macedonian Association of Doctors in Anesthesiology, Reanimation and Intensive Care (ZLARIL) in Ohrid.

The Scientific Board paid a great attention to incorporate attractive topics as artificial intelligence in every day practice, sustainability in anaesthesia and intensive care, workplace environment challenges, new insights of regional anaesthesia, novel therapies modulating acute and chronic pain, ERAS protocols, ultrasound in anaesthesia and intensive care (PoCUS), brain dead donor transplantation donor transplantation, airway management with non-invasive and invasive respiratory support, intensive care peculiarities, continuous renal replacement therapy - CRRT, miscellaneous perioperative anaesthesia, peculiarities in gynecological-obstetric anesthesia, cardio anaesthesia, pediatric and neurosurgical patient management.

Your presence and active participation is of great value and essential for the success of our Congress.

Our desire is to make sure that your visit is professionally and socially enriched and that each of you brings back wonderful memories from our Ohrid and Macedonia.

Assoc. Prof. Vesna Durnev

President of Anaesthesiology,
Reanimation and Intensive Care Medicine
ZLARIL

ИНФОРМАЦИИ ЗА КОНГРЕСОТ

Претседател на Конгресот
Весна Дурнев

Претседател на Организационен комитет
Весна Дурнев

Секретар на Конгресот
Филип Наумовски

Членови на Организационен комитет
Атанас Сивевски
Филип Наумовски
Александар Димитровски
Александра Гавриловска Брзанов
Симона Николовска
Симона Тренчевска

Научен комитет
Претседател на Научен комитет
Јасминка Нанчева

Членови на Научен комитет
Андријан Карталов
Билјана Кузмановска
Атанас Сивевски
Марија Срцева
Билјана Ширговска
Весна Дурнев

Почесни предавачи
Јанике Мелин Олсен
Идит Матот
Оле Џон Нилсен
Олег Сабелников
Еуардо де Робертис

Почесни членови
Јордан Нојков
Марија Шољакова
Трајанка Трајковска
Зорка Николова Тодорова
Мирјана Шошолчева

GENERAL INFORMATION

President of the Congress
Vesna Durnev

President of the Organizing Committee
Vesna Durnev

Secretary of the Congress
Filip Naumovski

Organizing committee members
Atanas Sivevski
Filip Naumovski,
Aleksandar Dimitrovski
Aleksandra Gavrilovska Brzanov
Simona Nikolovska
Simona Trenchevska

Scientific Committee
President of the Scientific Committee
Jasminka Nancheva

Members of the Scientific Committee
Andrijan Kartalov
Biljana Kuzmanovska
Atanas Sivevski
Marija Srceva
Biljana Shirgovska
Vesna Durnev

Honorary Guest Speaker
Jannicke Mellin Olsen
Idit Matot
Ole John Nielsen
Olegs Sabelnikovs
Edoardo de Robertis

Honorary Members
Jordan Nojkov
Marija Sholjakova
Trajanka Trajkovska
Zorka Nikolova Todorova
Mirjana Shosholcheva

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VII МАКЕДОНСКИ КОНГРЕС ЗА АНЕСТЕЗИОЛОГИЈА, РЕАНИМАЦИЈА И ИНТЕНЗИВНО ЛЕКУВАЊЕ

04-07.04.2024 , Охрид, Р.С. Македонија

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ПРОГРАМА

ЧЕТВРТОК / 04 АПРИЛ

09:00 - РЕГИСТРАЦИЈА (НИВО 0)

КОНГРЕСНА САЛА „ОХРИД“

11:30 – 17:00 **РАБОТИЛНИЦА ЗА ПЕРИФЕРНИ НЕРВНИ БЛОКОВИ**

Блокови на горните и долните екстремитети
Трункални блокови и
блокови на абдоминален ѕид

Fatma Saricaoğlu, Alparlan Kuş, Gözen Öksüz, Derya Özkan, Ismet Topçu, Yavuz Gürkan

11.30-13.30 ПРЕДАВАЊЕ
13.30-14.30 РУЧЕК
15.00-17.00 ВЕЖБИ НА МОДЕЛИ

ОТВОРАЊЕ НА КОНГРЕСОТ: 30 ГОДИНИ ЗЛАРИЛ -КОНГРЕСНА САЛА „БИЛЈАНА“

19:00 - 19:10 Насл. Доц. Проф. Весна Дурнев, Претседател на ЗЛАРИЛ
19:10 - 19:20 Проф. Светозар Антовиќ, Декан на Медицинскиот Факултет
19:20 - 19:30 Проф. Калина Старделова, Претседател на Лекарска Комора на Р. С. Македонија
19:30 - 19:40 Кирил Пецаков - Градоначалник на Охрид
19:40 - 20:00 Проф. Јордан Нојков
20:00 - 20:15 Доделување на Признанија на минати претседатели

20:30 - 23:00 - КОКТЕЛ ЗАБАВА
РЕСТОРАН - ХОТЕЛ „МЕТРОПОЛ“ - (НИВО 0)

ПЕТОК, 05 АПРИЛ

КОНГРЕСНА САЛА „БИЛЈАНА“

08:30 – 09:55 ПЕРИОПЕРАТИВНА МЕДИЦИНА - Сесија 1

МОДЕРАТОРИ: Јасминка Нанчева, Андријан Карталов

08:30-08:45 Андријан Карталов (МКД)
Вазопресори

08:45-09:00 Марија Шољакова (МКД)
Непознати ефекти на Лидокаинот

09:00-09:15 Билјана Кузмановска (МКД)
Периоперативен менаџмент на телесна температура

09:15-09:30 Јасминка Нанчева (МКД)
Интраутерина фетална хирургија и анестезија

09:30-09:45 Атанас Сивевски (МКД)
Анестезиолошки менаџмент за ERAC протоколи

09:45-09:55 **Дискусија**

09:55 -10:25 СИМПОЗИУМ - НОВО НОРДИСК ФАРМА

Модератор: Ана Данева Маркова
NovoSeven во третман на тешко постпартално крварење
Др. Атанас Сивевски
Др. Дафина Караџова
Клинички центар „Мајка Тереза“ Скопје

10:25 - 11:20 Периоператива и Геријатрија- Сесија 2

МОДЕРАТОРИ: Билјана Кузмановска, Идит Матот

10:25-10:40 Идит Матот (ИЗР)
Периоперативна патека за стари пациенти

10:40-10:55 Маја Шоштарич (СЛО)
Важноста на прехабилитациониот програм за успешен хируршки третман кај стари лица

10:55-11:10 Миодраг Миленовиќ (СРБ)
Кревкост како предиктор на ризик за периоперативен морбидитет и морталитет

11:10-11:20 **Дискусија**

11:20-11:50 СИМПОЗИУМ - ЕВРОПА ЛЕК ФАРМА

Улога на Ентералната исхрана во цревно телесниот “crosstalk”
Весна Дурнев
Клинички центар „Мајка Тереза“ Скопје

11:50-12:05 Кафе пауза

КОНГРЕСНА САЛА „ЛАБИНО“

08:30 – 09:55 ДИШЕН ПАТ - Сесија 1

МОДЕРАТОРИ: Билјана Ширговска, Тања Горановиќ

08:30-08:45 Билјана Ширговска (МКД)
Менаџирање на дишен пат кај деца-водичи и препораки

08:45-09:00 Тања Горановиќ (ХРВ)
Менаџирање на дишен пат кај патологија на глава и врат

09:00-09:15 Рената Чурич Радивојевиќ (ХРВ)
Местото на педијатриската трахеотомија во менаџирањето на дишниот пат- од гледна точка на анестезиологот, наши искуства

09:15-09:30 Пол Зилберман (ИЗР)
Употребата на LMA Гастро во баријатриска хирургија

09:30-09:45 Антигона Хасани (КОС)
Безбедна екстубација на деца после хирургија на дишен пат

09:45-09:55 **Дискусија**

10:25 – 11:20 Педијатриска Анестезија - Сесија 2

МОДЕРАТОРИ: Душица Симиќ, Онур Озлу

10:25-10:40 Душица Симиќ (СРБ)
Дали ни се потребни релаксанти за интубација на деца

10:40-10:55 Маријана Каришиќ (ЦГ)
Менаџирање на дишен пат кај деца

10:55-11:10 Љубица Мичуновиќ Дребанова (МКД)
Трансфузија кај деца: Што е ново?

11:10-11:20 **Дискусија**

11:50-12:05 Кафе пауза

12:05 - 13:30 Тораковаскуларна анестезија - Сесија 3

МОДЕРАТОРИ: Воислава Нешковиќ, Марија Срцева

12:05-12:20 Воислава Нешковиќ (СРБ)
Прехабилитација во торакалната хирургија, дали е возможно?

12:20-12:35 Јавуз Гуркан (ТУР)
Блокови на граден кош

12:35-12:50 Марија Срцева (МКД)
Васкуларна некохерентност за време на васкуларна хирургија и интензивно лекување и нејзиниот ефект на хемостазата и коагулацијата

12:50-13:05 Васил Папестиев (МКД)
ЕКМО

ПЕТОК, 05 АПРИЛ

КОНГРЕСНА САЛА „БИЛЈАНА“

12:05 - 13:25 Кариера, лидерство и едукација - Сесија 3

МОДЕРАТОРИ: Олег Сабелников, Весна Дурнев

12:05-12:25 Идит Матот (ИЗР)
Ставовите на жените анестезиолози и пријавени бариери за напредување во кариерата во анестезијата

12:25-12:45 Олег Сабелников (ЛАТ)
Улогата на „ЕБА во усогласувањето на обуката за анестезиологија во Европа“

12:45-13:00 Весна Дурнев (МКД)
Ултразвук во анестезиолошкиот тренинг-сегашни и идни трендови

13:00-13:15 Александра Гавриловска Брзанов (МКД)
Изградба на соработлива средина за успешна работа

13:15-13:25 **Дискусија**

13:30 – 14:15 СИМПОЗИУМ - МЕДИКОФАРМАЦИЈА

Дексмедетомидин – Клинички Искуства
Јасмина Марковиќ Божиќ
Универзитетски Медицински Центар Љубљана

14:15 -15:00 Ручек

15:00 - 16:10 ERAC - Сесија 4

МОДЕРАТОРИ: Атанас Сивевски, Медхат Шалаби

15:00 - 15:15 Медхат Шалаби (АНГ)
Што е вистински ERAC? Зошто треба да биде стандард во периоперативната нега?

15:15 - 15:30 Медхат Шалаби (АНГ)
Клучната улогана анестезиологот во ERAC

15:30 -15:50 Томас Хаченберг (ГЕР)
Брзи патеки во торакалната анестезија

15:50-16:05 Борислава Пујич (СРБ)
ERAC за Царски рез- од идеја до имплементација

16:05-16:10 **Дискусија**

16:10 – 16:40 СИМПОЗИУМ - КЛИНИЧКИ ЦЕНТАР „ЖАН МИТРЕВ“

Хемофилтрација
Тања Грамосли
Клинички Центар “Жан Митрев“

16:40-17-00 Кафе пауза

КОНГРЕСНА САЛА „ЛАБИНО“

13:05-13:20 Дарко Анѓушев (МКД)
Вентилација на еден бел дроб

13:20-13:30 **Дискусија**

14:15 -15:00 Ручек

15:00 - 16:20 Кардиолошки пациент - Сесија 4

МОДЕРАТОРИ: Марија Вавлукис, Марија Стевиќ

15:00-15:20 Идит Матот (ИЗР)
Дали е потребно да мериме тропонин во постоперативниот период?

15:20-15:40 Марија Вавлукис (МКД)
Варијации на зголемен тропонин-кога е потребен кардиолог?

15:40-15:55 Маја Шоштарич (СЛО)
Периоперативна припрема на кардиолошки пациент за некардијална хирургија

15:55-16:10 Самир Кучи (АЛБ)
Периоперстивна нега за пациенти со валвуларни протези кои побаруваат некардијална хирургија

16:10-16:20 **Дискусија**

16:50 -17:05 Кафе пауза

17:05-18:30 Разно - Сесија 5

МОДЕРАТОРИ: Дафина Караџова, Тања Троиќ

17:05-17:20 Тања Троиќ (МКД)
Позитивни алерготестови- Што е следно?

17:20-17:35 Дафина Караџова (МКД)
Компликации во акушерска анестезија

17:35-17:50 Алберт Леши (МКД)
ТИВА-ТКИ

17:50-18:05 Бети Костадиновска (МКД)
ERAC протокол на кардиохируршки пациенти

18:05-18:20 Надица Мехмедовиќ (МКД)
Анестезиолошки предизвици со Механичка циркулаторна поддршка

18:20-18:30 **Дискусија**

СЛОБОДНА ВЕЧЕР

ПЕТОК, 05 АПРИЛ

КОНГРЕСНА САЛА „БИЛЈАНА“

17:00-18:50 Трансплантација - Сесија 5

МОДЕРАТОРИ: Маја Мојсова Мијовска, Светозар Антовиќ

17:00-17:10 Маја Мојсова Мијовска (МКД)
Национален координатор за трансплантација

17:10-17:25 Сашо Дохчев (МКД)
Трансплантација на Бубрези

17:25-17:40 Бети Тодоровска (МКД)
Трансплантација на црн дроб - следење на трансплантирани пациенти

17:40-17:55 Александар Трајановски (МКД)
Трансплантација на коскено ткиво

17:55-18:10 Марјан Шокаровски (МКД)
Трансплантација на срце

18:10-18-25 Билјана Андоновска (МКД)
Трансплантација од мозочно мртви дарители

18:25-18:40 **Дискусија**

СЛОБОДНА ВЕЧЕР

КОНГРЕСНА САЛА - „ОХРИД“

08:50-17:00 **РАБОТИЛНИЦА - POCUS**

FATE & Белодробен ултразвук
FAST и Гастричен Ултразвук

Кристијан Арзола, Ана Сјаус, Иван Величковиќ, Хавиер Кубиљос

08:50-14.00 ПРЕДАВАЊА
14.00-15.00 РУЧЕК
15.00-17.00 РАБОТА НА МОДЕЛИ

САБОТА, 06 АПРИЛ

КОНГРЕСНА САЛА „ЛАБИНО“

08:30 – 10:10 БАП -Сесија 6

МОДЕРАТОРИ: Мерал Канбак, Шошолчева Мирјана

08:30-08:45 Али Фуат Ердем (ТУР)
Протокот на свеж гас треба да биде што е можно понизок за одржливост на животната средина

08:45-09:00 Хулија Билгин (ТУР)
Базични принципи на ТКИ

09:00-09:15 Хујти Гентијан (АЛБ)
Чудни компликации

09:15-09:30 Јасмина Јакуповиќ Смајиќ (БИХ)
Предизвици со обезбен пациент

09:30-09:45 Мирјана Шошолчева (МКД)
Вештачката интелигенција како косрисна алатка за персонализирана медицина: клинички апликации во ЕИЛ

09:45-10:00 Пол Зилберман (ИЗР)
Физиолошки промени во вселената

10:00-10:10 **Дискусија**

10:15 - 11:10 Неуроанестезија и интензивно лекување - Сесија 7

МОДЕРАТОРИ: Фејхан Октен, Дафина Караџова

10:15-10:30 Изил Озкочак Туран (ТУР)
Интракранијална хеморагија, сеуште дилема за клиничарите

10:30-10:45 Рудин Доми (АЛБ)
Педијатриска невроанестезија

10:45-11:00 Игор Лазич (СРБ)
Операција на мозок кај буден пациент

11:00-11:10 **Дискусија**

12:00- 12:15 Кафе пауза

12:15-13:30 Менаџирање на Болка и регионална анестезија 1 - Сесија 8

МОДЕРАТОТИ: Фатма Саричоглу, Кренај Лилај

12:15-12:30 Фатма Саричоглу (ТУР)
Периферни нервни блокови кај возрасни и деца

12:30-12:45 Фатос Сада (АЛБ)
Еволуција на сегменталната торакална спинална анестезија

12:45-13:00 Емил Стоицовски (МКД)
Цервикален блок

САБОТА, 06 АПРИЛ

КОНГРЕСНА САЛА „БИЛЈАНА“

08:30 - 10:00 Интензивна Медицина 1 - Сесија 6

МОДЕРАТОРИ: Едуардо де Робертис, Јасминка Першец,

08:30-08:45 Едуардо Де Робертис (ИТА)
Иднината на Интензивната Медицина помеѓу вештачка интелигенција, потенцираната реалност и страста

08:45-09:00 Јасмина Першец (ХРВ)
ВИ за хемодинамска оптимизација на пациенти во анестезија и ЕИЛ

09:00-09:15 Туган Утку (ТУР)
Како перцепцијата на смртта се менува со конструкцијата на ЕИЛ

09:15-09:30 Славица Кволик (ХРВ)
Испуштање на политрауматизирани пациенти од ЕИЛ

09:30-09:45 Хисто Божов (БУГ)
Хипербарна оксигенација

09:45-10:00 **Дискусија**

10:00 - 11:15 Одржливост и безбедност - Сесија 7

МОДЕРАТОРИ: Јанике Мелин Олсен, Билјана Кузмановска

10:00-10:20 Јанике Мелин Олсен (НОР)
Безбедни лекови, безбедна анестезија

10:20-10:40 Оле Џон Нилсен (ДАН)
Дали го разбираме нашето лично влијание врз климата?

10:40-11:00 Едуардо де Робертис (ИТА)
Одржливост во Анестезија и Интензивно лекување

11:00-11:15 **Дискусија**

11:15 -12:00 СИМПОЗИУМ - ОКТАФАРМА

Употребата на концентрати од човечка плазма во пероперативна корекција на коагулацијата
Драгана Униќ Стојановиќ - Институт за Кардиоваскуларни Болести “Дедиње”, Белград
Дејан Марковиќ - Медицински Факултет, Универзитет Белград

12:00-12:15 Кафе пауза

12:15-13:25 Интензивна Медицина 2 - Сесија 8

МОДЕРАТОРИ: Маркус Хуперц, Вишња Иванча

12:15-12:30 Маркуз Хуперц (ГЕР)
Менаџирање на антибиотици/терапија со антибиотици

КОНГРЕСНА САЛА „ЛАБИНО“

13:00-13:15 Александар Димитровски (МКД)
Билатерален еректор спине блок како дел од мултимодалната анестезија за отворена хирургија на р’бетен столб

13:15-13:30 **Дискусија**

14:00-14:45 Ручек

14:45-15:55 Менаџирање на Болка и регионална анестезија 2 - Сесија 9

МОДЕРАТОРИ: Предраг Стевановиќ, Александар Димитровски

14:45-15:00 Предраг Стевановиќ (СРБ)
Епидуролиза (перкутана епидурална неуропластика со ФОР А-Б катетер

15:00-15:15 Маркуз Хупертз (ГЕР)
Докази за нервно оштетување и превентивни стратегии

15:15-15:30 Санем Чакар (ТУР)
Апликација на регионалната анестезија во ургентен центар кај траума пациенти

15:30-15:45 Маргарита Ловач Чепујноска (МКД)
Клиничка употреба на пациент контролирана аналгезија за акутна постоперативна болка

15:45-15:55 **Дискусија**

16:00-16:45 СИМПОЗИУМ - ВИАТРИС

Улогата на Фраксипаринот во тромбопрофилакса во ортопедска хирургија
Александар Димитровски
Улогата на Аријкстра во превенција на ВТЕ во хирургија
Анита Кокарева
Клинички Центар „Мајак Тереса“ Скопје

16:45-17:00 Кафе пауза

17:00-18:40 Хируршки перспективи во анестезијата - Сесија 10

МОДЕРАТОРИ: Илир Хасани, Александар Чапаревски

17:00-17:15 Никола Јанкуловски (МКД)
Синдром на абдоминален компартман

17:15-17:30 Јордан Савевски (МКД)
Како да се избегнат раните постоперативни компликации кај политрауматизирани пациенти со ортопедска траума

САБОТА, 06 АПРИЛ

КОНГРЕСНА САЛА „БИЛЈАНА“

12:30-12:45 Вишња Иванчан (ХРВ)
Седација во ЕИЛ

12:45-13:00 Иван Палибрк (СРБ)
Нутриција на критично болни пациенти

13:00-13:15 Хулија Башар (ТУР)
Протективни режими на механичка вентилација

13:15-13:25 **Дискусија**

13:30 -14:00 СИМПОЗИУМ - АЛКАЛОИД КОНС дооел

“ПИККО - Целосна слика“ - Напреднат пациент мониторинг
Артур ван дер Дејли

Безбедна и едноставна ниско проточна анестезија
Панајотис Псајхарис

14:00 -14:45 Ручек

14:45 -16:10 Ултразвук и регионална анестезија - Сесија 9

МОДЕРАТОРИ: Атанас Сивевски, Нада Пејчич

14:45-15:00 Иван Величковиќ (УСД)
ПОКУС и прееклампсија

15:00-15:15 Нада Пејчиќ СРБ)
Абнормални наоди на ПОКУСС

15:15-15:35 Игор Филиповски (МКД)
Ултразвучно водена перкутана крионеуролиза за третман на хронична и акутна болка

15:35-15:50 Филип Наумовски (МКД)
Ехокардиохрафски увид кај неуспешен вининг: предикција и перспективи

15:50-16:00 **Дискусија**

17:15-18:45 Разно - Сесија 10

МОДЕРАТОРИ: Вања Трајковска, Александра Петрушева

17:15-17:30 Билјана Ефтимова (МКД)
Одржливост на животната средина во анестезијата и интензивната нега

17:30-17:45 Вања Трајковска (МКД)
Вентилатор асоцирана пневмонија

17:45-18:00 Александра Петрушева (МКД)
Ефикасност на преемптивна мултимодална неопијатна аналгезија кај бубрежна трансплантација

18:00-18:15 Марина Темелковска Стевановска (МКД)
Психолошки и социјални влијанија на идиопатската сколиоза кај адолесценти и нивните блиски

18:15-18:30 Дарко Саздов (МКД)
Неинванзивни тестови за одговор на терапија со течности

18:30-18:45 **Дискусија**

КОНГРЕСНА САЛА „ЛАБИНО“

17:30-17:45 Александар Чапаревски (МКД)
Хируршки и анестезиолошки аспекти на хирургија на задна мозочна јама

17:45-18:00 Илир Хасани (МКД)
Ендоскопска лумбална хирургија на рбетен столб- локална наспроти општа анестезија

18:00-18:15 Ристо Чоланчевски (МКД)
Хируршки менаџмент на нестабилен граден кош

18:15-18:30 Софија Пејкова (МКД)
ВАЛАНТ-хирургија: Нов играч во анестезијата и премостување на јазот помеѓу безбедноста, ефикасноста и удобноста на пациентот

18:30-18:40 **Дискусија**

КОНГРЕСНА САЛА „ОХРИД“

08:50-17:00 **РАБОТИЛНИЦА - POCUS**

FATE & Белодробен ултразвук
FAST и Гастричен Ултразвук

Кристијан Арзола, Ана Сјаус, Иван Величковиќ, Хавиер Кубиљос

08:50-14.00 ПРЕДАВАЊА
14.00-15.00 РУЧЕК
15.00-17.00 РАБОТА НА МОДЕЛИ

НЕДЕЛА, 07 АПРИЛ

КОНГРЕСНА САЛА „БИЛЈАНА“

08:30 - 10:00 Постер Презентации

10:00-10:15 **Дискусија**

10:15 - 11:15 Постер Презентации

11:15-11:30 **Дискусија**

11:30 -12:00 Затворање на Конгресот

20:30 – 23:00 - СВЕЧЕНА ВЕЧЕРА
РЕСТОРАН ХОТЕЛ „МЕТРОПОЛ“ - (НИВО 0)

АГЕНДА

11:30 – 17:00

РАБОТИЛНИЦА ЗА РЕГИОНАЛНА АНЕСТЕЗИЈА

ПРЕДАВАЧИ: Фатма Саричоглу, Алпарлан Кус, Ѓозен Оксуз, Исмет Топчи, Јавуз Гуркан

09.30 - 11:00 РЕГИСТРАЦИЈА

11:30-12:00 Блокови на горните екстремитети (интерскаленски, супраклавикуларен, инфраклавикуларен и аксиларен блок) - Исмет Топчи, Јавуз Гуркан

12:00-12:30 Блокови на долните екстремитети (феморален, ишијадичен, аддуктор канал блок, пенг и поплитеален блок) - Дерја Озкан

12:30-13:00 Блокови на абдоминален ѕид: ТАП блок, Ректус Шит Блок, Илиоингвинален блок - Фатма Саричоглу

13:00-13.30 Трункални Блокови (ESP, паравертебрален блок и QLB) - Алпарлан Кус, Ѓозен Оксуз

13.30-14.30 Ручек

Вежби на модели

Модел 1: блокови на горните екстремитети (интерскаленски, супраклавикуларен, инфраклавикуларен и аксиларен блок) - Исмет Топчи, Јавуз Гуркан

Модел 2: Блокови на долните екстремитети (феморален, ишијадичен, аддуктор канал блок, пенг и поплитеален блок) - Дерја Озкан

Модел 3: Блокови на абдоминален ѕид: ТАП блок, Ректус Шит Блок, Илиоингвинален блок - Фатма Саричоглу

Модел 4: Трункални Блокови (ESP, паравертебрален блок и QLB) - Алпарлан Кус, Ѓозен Оксуз

	14:45-15:15	15:15-15:45	15:45-16:15	16:15-16:45
Група 1	Модел 1	Модел 2	Модел 3	Модел 4
Група 2	Модел 2	Модел 3	Модел 4	Модел 1
Група 3	Модел 3	Модел 4	Модел 1	Модел 2
Група 4	Модел 4	Модел 1	Модел 2	Модел 3

АГЕНДА

08:50-17:00

РАБОТИЛНИЦА - POCUS

FATE & Белодробен ултразвук
FAST и Гастричен Ултразвук

Кристијан Арзола, Ана Сјаус, Иван Величковиќ, Хавиер Кубиљос

ДЕН 1

8.50 - 09.00	Отворање на работилницата – Иван Величковиќ
9.00 - 09.30	Вовед во ФАТЕ – Иван Величковиќ
	Зошто ФАТЕ е толку суштинска за секој анестезиолог - Ана Сјаус
09.30- 09.45	Белешки за ХОТ 1 – Ана Сјаус
09.45- 11.00	ХОТ 1 - ФАТЕ
11.00 - 11.15	Белешки а ХОТ 2 – Ана Сјаус
11.15 - 12.15	М-мод, МАПСЕ / ТАПСЕ
12.15 - 12.45	Кафе пауза
12.45- 13.00	Белешки за ХОТ 3 – Иван Величковиќ
13.00- 14.00	Повторувања од ХОТ 1 и 2, Парастернална долга оска
14.00-15.00	Ручек
15.00-15.15	Белешки за ХОТ 4 – Хавиер Кубиљос
15.15 -17.00	ХОТ 4 , дискусија, евалуација

Сценарио:

СЛУЧАЈ 1: Ана Сјаус

СЛУЧАЈ 2: Иван Величковиќ

СЛУЧАЈ 3: Кристијан Арзола

СЛУЧАЈ 4: Хавиер Кубиљос

* НОТ = Практичен тренинг

АГЕНДА

08:30-14:00

РАБОТИЛНИЦА - POCUS

FATE & Белодробен ултразвук
FAST и Гастричен Ултразвук
Кристијан Арзола, Ана Сјаус, Иван Величковиќ, Хавиер Кубиљос

Ден 2

08.30- 09.00	Вовед во ултразвук на желудникот - Зошто Гастричниот УС е толку суштински за секој анестезиолог? - Кристијан Арзола
09.00- 09.30	Вовед во FAST (Фокусирана проценка со сонографија при траума) - Зошто FAST е толку суштински за секој анестезиолог - Хавиер Кубилос
09.30-10.45	ХОТ 1: Гастричен ултразвук + FAST
10.45 -11.00	Кафе пауза
11.00 -11.30	Вовед во ултразвук на белите дробови - Хавиер Кубилос
11.30 -12.45	ХОТ 2: Ултразвук на белите дробови
12.45 -14.00	ХОТ 3: Сценарија на случај - Ана Сјаус, Кристијан Арзола, Хавиер Кубиљос

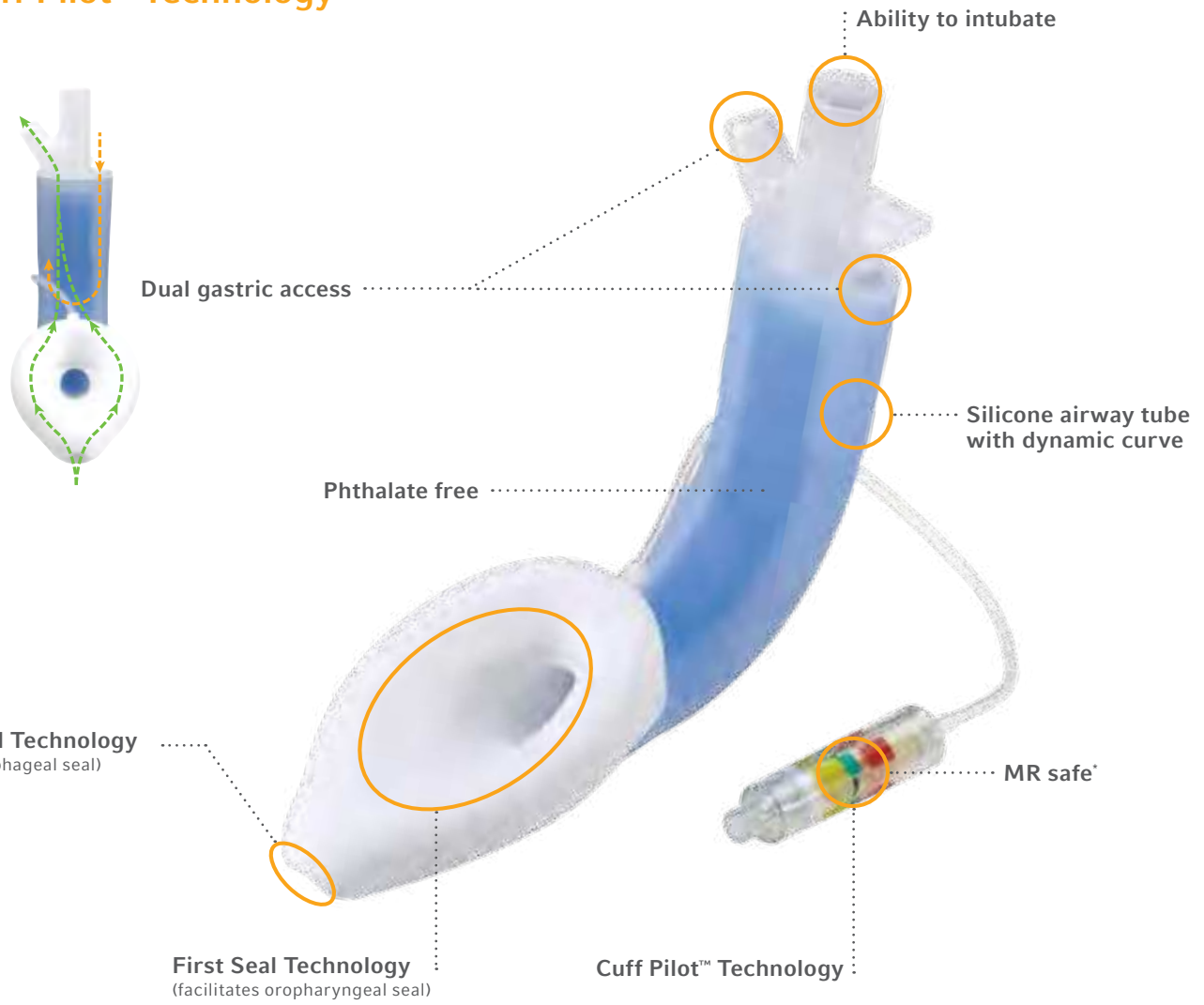
* на учесникот во секоја група му се даваат 3 минути да го изведат испитот и да ги интерпретираат најдобрите слики.
Сценариото повторно разгледано со дијагнози и слики од реалниот живот.

15.00-17.00

НАПРЕДНАТ КУРС ЗА ИНТЕРПРЕТАЦИЈА НА ГАСНИ АНАЛИЗИ
Д-Р ТУГАН УТКУ
Универзитетската болница „Yeditepe Koşuyolu“

15.00-15.30	Еволуција на ацидобазниот концепт, концептуален преглед
15.30-16.00	Алтернативна интерпретација на ацидобазниот статус - Физичкохемиски пристап
16.00-17.00	АБГ Интерактивен дел

LMA® Protector™ Airway
with Cuff Pilot™ Technology



LMA® Protector™ Airway with Cuff Pilot™ Technology

MASK SIZE	PRODUCT CODE WITH CUFF PILOT™ TECHNOLOGY	PRODUCT CODE WITH PILOT BALLOON	PATIENT WEIGHT IN KG	MAXIMUM INTRACUFF PRESSURE** IN CM H_2O	MAXIMUM ETT ID IN MM	LARGEST SIZE OG TUBE IN FR.
3	192030	195030	30-50	60	6.5	16
4	192040	195040	50-70	60	7.5	18
5	192050	195050	70-100	60	7.5	18

ETT=ENDOTRACHEAL TUBE | OG=OROGASTRIC TUBE

* LMA® Protector™ Airway with Cuff Pilot™ Technology only.
** It is recommended that the cuff be inflated to a maximum intracuff pressure of 60 cm H_2O.

VII MACEDONIAN CONGRESS OF ANAESTHESIOLOGY, REANIMATION AND INTENSIVE CARE MEDICINE

04-07.04.2024 , Ohrid, R.N. Macedonia

Здружение на Лекари по Анестезиологија, Реанимација и Интензивно Лекување

PROGRAMME

THURSDAY / APRIL 04

09:00 - REGISTRATION (LEVEL 0)

CONGRESS HALL: OHRID

11:30 – 17:00 **WORKSHOP**
PERIPHERAL BLOCKS

Fatma Saricaoğlu, Alparlan Kuş, Gözen Öksüz, Derya Özkan, Ismet Topçu, Yavuz Gürkan

Peripheral Nerve Blocks Workshop
Upper & Lower Extremity blocks
Truncal & Abdominal Wall blocks

11.30-13.30	LECTURES
13.30-14.30	LUNCH
15.00-17.00	HANDS ON STATIONS

OPENING CEREMONY 30 YEARS MSA/ZLARIL CONGRESS HALL: BILJANA

19:00 - 19:10	President of MSA - Assoc. Prof. Vesna Durnev
19:10 - 19:20	Dean of Medical Faculty Prof. - Svetozar Antovic
19:20 - 19:30	President of Doctor Chamber of Macedonia - Prof. Kalina Stardelova
19:30 - 19:40	Mayor of Ohrid - Kiril Pecakov
19:40 - 20:00	Prof. Jordan Nojkov
20:00 - 20:15	Award ceremony / Past Presidents

20:30 – 23: 00 - COCTAIL PARTY

RESTAURANT HOTEL METROPOL (LEVEL 0)

FRIDAY / APRIL 05

CONGRESS HALL: BILJANA

08:30 – 09:55 Perioperative Medicine - Session 1

CHAIRS: Jasminka Nanceva, Andrijan Kartalov

08:30-08:45	Andrijan Kartalov (MKD) **Vasopressor**
08:45-09:00	Marija Sholjakova (MKD) **Unknown effects of lidocaine**
09:00-09:15	Biljana Kuzmanovska (MKD) **Perioperative temperature management**
09:15-09:30	Jasminka Nanceva (MKD) **Intrauterine fetal surgery and anaesthesia**
09:30-09:45	Atanas Sivevski (MKD) **Anaesthetic management for ERAS protocols**
09:45-09:55	**Discussion**

09:55 -10:25 SYMPOSIUM NOVO NORDISK FARMA

Chairperson: Ana Daneva Markova MD, PhD

NovoSeven in Treatment of severe postpartum haemorrhage

Atanas Sivevski MD, PhD

Dafina Karadjova MD, PhD

University Clinic of Gynaecology and Obstetrics,
Clinical Center "Mother Teresa" Skopje

10:25 - 11:20 Perioperative / Geriatrics -Session 2

CHAIRS: Biljana Kuzmanovska, Idit Matot

10:25-10:40	Idit Matot (ISR) **Perioperative pathway for the elderly patient**
10:40-10:55	Maja Sostaric (SLO) **The importance of prehabilitation program for the success of surgical treatment of the elderly**
10:55-11:10	Miodrag Milenovic (SRB) **Frailty as a risk predictor of perioperative morbidity and mortality**
11:10-11:20	**Discussion**

11:20-11:50 SYMPOSIUM NUTRICIA - EVROPA LEK FARMA

Role of Enteral nutrition in Gut body cross talk

Vesna Durnev MD, PhD

University Clinic of Anaesthesiology, reanimation and Intensive care,
Clinical Center "Mother Teresa"

11:50-12:05 Coffee break

CONGRESS HALL: LABINO

08:30 – 09:55 AIRWAY - Session 1

CHAIRS: Shirgovska Biljana, Tanja Goranovic

08:30-08:45	Shirgovska Biljana (MKD) **Airway management at pediatric patients- guidelines and recommendations**
08:45-09:00	Tanja Goranovic – (CRO) **Airway management in head and neck pathology**
09:00-09:15	Renata Curic- (CRO) **Place for pediatric tracheotomy in airway management- anesthesiology point of view- our experience**
09:15-09:30	Paul Zilberman (ISR) **The use of LMA gastro in bariatric surgery**
09:30-09:45	Antigona Hasani (KOS) **Safe extubation in children after the shared airway surgeries**
09:45-09:55	**Discussion**

10:25 – 11:20 Paediatrics - Session 2

CHAIRS: Dusica Simic, Onur Ozlu

10:25-10:40	Dusica Simic (SRB) **Do we need relaxants for pediatric patient intubation?**
10:40-10:55	Marijana Karisik (MNE) **Pediatric airway management**
10:55-11:10	Ljubica Micunovic Derebanov (MKD) **Pediatric transfusion: what is new?**
11:10-11:20	**Discussion**

11:50-12:05 Coffee break

12:05 - 13:30 Thoraco-vascular surgery - Session 3

CHAIRS: Vojislava Neskovic, Marija Srceva

12:05-12:20	Vojislava Neskovic (SRB) **Prehabilitation in thoracic surgery: Is it feasible**
12:20-12:35	Yavuz Gurkan (TUR) **Thoracic wall blocks**
12:35-12:50	Marija Srceva (MKD) **Vascular incoherence during vascular surgery and ICU and its effect on hemostasis and coagulation**
12:50-13:05	Vasil Papestiev (MKD) **ECMO**

FRIDAY / APRIL 05

CONGRESS HALL: BILJANA

12:05 - 13:25 Career, leadership and education - Session 3

CHAIRS: Olegs Sabelnikovs, Vesna Durnev

12:05-12:25 Idit Matot (ISR)
Women anesthesiologists attitudes and reported barriers to career advancement in anesthesia

12:25-12:45 Olegs Sabelnikovs (LAT)
The role of "EBA in harmonization of Anaesthesiology training in Europe

12:45-13:00 Vesna Durnev (MKD)
Ultrasound in anaesthesiology training-present trends and future

13:00-13:15 Aleksandra Gavrilovska Brzanov (MKD)
Building collaborative environment for workplace success

13:15-13:25 **Discussion**

13:30 – 14:15 SYMPOSIUM MEDIKOFARMACIJA

Dexmedetomidine – Clinical experiences
Jasmina Markovic Bozic MD, PhD
University Medical Centre Ljubljana

14:15 -15:00 Lunch

15:00 - 16:10 ERAS - Session 4

CHAIRS: Atanas Sivevski, Medhat Shalabi

15:00 - 15:15 Medhat Shalabi (UK)
What is the real ERAS? Why it should be the Normal Standard of peri- operative care?

15:15 - 15:30 Medhat Shalabi (UK)
The vital role of the Anesthetist in ERAS.

15:30 -15:50 Thomas Hachenberg (GER)
Fast track in thoracic anesthesia

15:50-16:05 Borislava Pujic (SRB)
ERAS for Cesarean Delivery- From Idea to Implementation

16:05-16:10 **Discussion**

16:10 – 16:40 SYMPOSIUM "ZAN MITREV" CLINIC

HAEMOFILTRATION
Tanja Gramosli MD
"Zan Mitrev" Clinic

16:40-17-00 Coffee break

CONGRESS HALL: LABINO

13:05-13:20 Darko Andjusev (MKD)
One lung ventilation

13:20-13:30 **Discussion**

14:15 -15:00 Lunch

15:00 - 16:20 The cardiac patient - Session 4

CHAIRS: Marija Vavlukis, Marija Stevic

15:00-15:20 Idit Matot (ISR)
Should we measure troponin in the postoperative period?

15:20-15:40 Marija Vavlukis (MKD)
Various faces of elevated cardiac troponins- when cardiologist is needed?

15:40-15:55 Maja Sostaric (SLO)
Perioperative preparation of cardiac patient for non-cardiac operration

15:55-16:10 Saimir Kuci- (ALB)
Perioperative care of patients with valvular heart prosthesis that require non cardiac surgery

16:10-16:20 **Discussion**

16:50 -17:05 Coffee break

17:05-18:30 Miscelenous - Session 5

CHAIRS: Dafina Karadjova,Tanja Troic

17:05-17:20 Tanja Troic (MKD)
Positive anesthetic allergy testing - what to do next

17:20-17:35 Dafina Karadjova (MKD)
Complications in obstetric anaesthesia

17:35-17:50 Albert Leshi (MKD)
TIVA-TCI

17:50-18:05 Beti Kostadinovska (MKD)
ERAS Protocol in cardiac surgery

18:05-18:20 Nadica Mehmedovic (MKD)
Mechanical circulatory support challenges in anesthesia

18:20-18:30 **Discussions**

FREE NIGHT

FRIDAY / APRIL 05

CONGRESS HALL: BILJANA

17:00-18:50 TRANSPLANTATION - SESSION 5

CHAIRS: MAJA MOJSOVA MIOVSKA, SVETOOZAR ANTOVIC

17:00-17:10 Maja Mojsova Mijovska (MKD)
National Transplant Coordinator
17:10-17:25 Sasho Dohchev
Kidney transplant
17:25-17:40 Beti Todorovska (MKD)
Liver transplantation –
17:40-17:55 **follow up of transplanted patient**
Aleksandar Trajanovski (MKD)
Bone Transplant
17:55-18:10 Marjan Shokarovski (MKD)
Heart Transplant
18:10-18-25 Biljana Andonovska (MKD)
Brain death donor transplantation
18:25-18:40 **Discussions**

FREE NIGHT

CONGRESS HALL: OHRID

08:50-17:00 **WORKSHOP - POCUS**

FATE & Lung Ultrasound
FAST & Gastric Ultrasound

IVAN VELICKOVIC, CRISTIAN ARZOLA, ANA SJAUS, JAVIER CUBILLOS

08:50-14.00 LECTURES
14.00-15.00 LUNCH
15.00-17.00 HANDS ON STATIONS

SATURDAY / APRIL 06

CONGRESS HALL: LABINO

08:30 – 10:10 BAP - SESSION 6

CHAIRS: MERAL KANBAK, SHOSHOLCEVA MIRJANA

08:30-08:45 Ali Fuat Erdem (TUR)
The fresh gas flow should always be as low as possible for environmental sustainability
08:45-09:00 Hulya Bilgin (TUR)
Basic principles of TCI
09:00-09:15 Huiti Gentian (ALB)
Strange Complications
09:15-09:30 Jasmina Jakupovic Smajic (BIH)
Challenges with obese patient
09:30-09:45 Mirjana Shosholceva (MKD)
Artificial intelligence as a useful tool for personalized medicine: clinical applications in critical care settings
09:45-10:00 Paul Zilberman (ISR)
Physiological changes in space flight
10:00-10:10 **Discussion**

10:15 - 11:10 NEUROANAESTHESIA AND INTENSIVE CARE - SESSION 7

CHAIRS: FEYHAN OKTEN, ORHAN KANBAK, DAFINA KARADJOVA

10:15-10:30 Isil Ozkocak Turan (TUR)
Intracranial hemorrhages: Still dilemmas for the clinician
10:30-10:45 Rudin Domi (ALB)
Pediatric neurosurgery anesthesia considerations
10:45-11:00 Igor Lazic (SRB)
Awake brain surgery
11:00-11:10 **Discussion**

12:00- 12:15 COFFEE BREAK

12:15-13:30 PAIN MANAGEMENT AND REGIONAL ANAESTHESIA I - SESSION 8

CHAIRS: KRENAR LILAJ, FATMA SARICAOGLY

12:15-12:30 Fatma Saricaogly (TUR)
Peripheral nerve blocks at adults and children
12:30-12:45 Fatos Sada (ALB)
Evolving of thoracic spinal segmental anesthesia
12:45-13:00 Emil Stoicovski (MKD)
Cervical blocks

SATURDAY / APRIL 06

CONGRESS HALL: BILJANA

08:30 - 10:00 Intensive Medicine I - Session 6

CHAIRS: Edoardo de Robertis, Jasminka Persec

08:30-08:45 Edoardo de Robertis (ITA)
Future of Critical Care between artificial intelligence, augmented reality and passion/

08:45-09:00 Jasminka Persec (CRO)
AI for hemodynamic optimization of patients in anesthesia and ICU

09:00-09:15 Tughan Utku (TUR)
How did the perception of death change with the construction of intensive care units?

09:15-09:30 Slavica Kvolik (CRO)
Discharge of the patient with polytrauma from the ICU

09:30-09:45 Hristo Bozov (BUL)
Hyperbaric oxygenation

09:45-10:00 **Discussion**

10:00 - 11:15 Sustainability and safety - Session 7

CHAIRS: Jannicke Mellin Olsen, Biljana Kuzmanovska

10:00-10:20 Jannicke Mellin Olsen (NOR)
Safe medications safe anaesthesia

10:20-10:40 Ole John Nielsen (DEN)
Do you understand our own personal impact on climate?

10:40-11:00 Edoardo de Robertis (ITA)
Sustainability in Anesthesia and Intensive Care

11:00-11:15 **Discussion**

11:15 -12:00 SYMPOSIUM OCTAPHARMA

Use of human plasma concentrates in perioperative correction of coagulation parameters
Dragana Unić Stojanović MD, PhD, Cardiovascular Institute - "Dedinje", Belgrade, Serbia
Dejan Marković MD, PhD, Medical Faculty University of Belgrade, Serbia

12:00-12:15 Coffee break

12:15-13:25 Intensive Medicine II - Session 8

CHAIRS: Markus Huppertz, Visnja Ivancan

12:15-12:30 Markus Huppertz (GER)
Antibiotic Stewardship / Antibiotic therapies in the ICU

CONGRESS HALL: LABINO

13:00-13:15 Aleksandar Dimitrovski (MKD)
Bilateral erector spinae block as a part of multimodal anesthesia for open spine fusion surgery

13:15-13:30 **Discussion**

14:00-14:45 Lunch

14:45-15:55 Pain management and Regional anaesthesia II - Session 9

CHAIRS: Predrag Stevanovic, Aleksandar Dimitrovski

14:45-15:00 Predrag Stevanovic (SER)
EPIDUROLISIS (Percutaneous epidural neuroplasty with FOR A-B catheter

15:00-15:15 Markus Huppertz (GER)
Evidence on nerve damage and prevention strategies

15:15-15:30 Sanem Cakar (TUR)
Application of regional anaesthesia techniques in ER and trauma patients

15:30-15:45 Margarita Lovac Cepujnoska (MKD)
Clinical use of Patient Controlled Analgesia for Acute Postoperative Pain

15:45-15:55 **Discussion**

16:00-16:45 SYMPOSIUM VIATRIS

The role of Fraxiparine in thromboprophylaxis in orthopedic surgery
Aleksandar Dimitrovski MD
The role of Arixtra in the prevention of VTE in surgery
Anita Kokareva MD
University Clinic of Anaesthesiology, reanimation and Intensive care, Clinical Center "Mother Teresa"

16:45-17:00 Coffee break

17:00-18:40 Surgeon perspective - Session 10

CHAIRS: Ilir Hasani, Aleksandar Caparevski

17:00-17:15 Nikola Jankulovski (MKD)
Abdominal compartment syndrome

17:15-17:30 Jordan Savevski (MKD)
How to avoid early postoperative complications in polytrauma patients with orthopaedic trauma

SATURDAY / APRIL 06

CONGRESS HALL: BILJANA

12:30-12:45 Visnja Ivancan (CRO)
Sedation in ICU
12:45-13:00 Ivan Palibrk (SRB)
Nutrition of the critically ill
13:00-13:15 Hulya Basar (TUR)
Lung protective strategies in mechanical ventilation
13:15-13:25 **Discussion**

13:30 -14:00 SYMPOSIUM ALKALOID KONS DOOEL

"PiCCO: Get the Complete Picture" - Advanced Patient Monitoring
Lecturer : Arthur van der Deijl
"Safe and easy Low-flow anesthesia"
Lecturer: Panagiotis Psycharis

14:00 -14:45 LUNCH

14:45 -16:10 ULTRASOUND PERSPECTIVE - SESSION 9

CHAIRS: ATANAS SIVEVSKI, NADA PEJCIC

14:45-15:00 Ivan Velickovic (USA)
POCUS and Preeclampsia
15:00-15:15 Nada Pejcic (SRB)
Abnormal findings in POCUS
15:15-15:35 Igor Filipovski (MKD)
Ultrasound-Guided Percutaneous Cryoneurolysis for the treatment of Chronic and Acute Pain, -Presentation of the International Society for Ultrasound Guided Cryoneurolysis
15:35-15:50 Filip Naumovski (MKD)
Echocardiographic insights of weaning failure: prediction & perspective
15:50-16:00 **Discussion**

17:15-18:45 MISCELENOUS - SESSION 10

CHAIRS: VANJA TRAJKOVSKA, ALEKSANDRA PETRUSHEVA

17:15-17:30 Biljana Eftimova (MKD)
Environmental sustainability in anaethesia and intensive care
17:30-17:45 Vanja Trajkovska (MKD)
Ventilator associated pneumonia
17:45-18:00 Aleksandra Petrusheva (MKD)
Efficacy of preemptive multimodal opioid free analgesia in kidney transplant recipients
18:00-18:15 Marina Temelkovska Stevanovska (MKD)
Psychological and social influence of idiopathic scoliosis on adolescents and their caregivers
18:15-18:30 Darko Sazdov (MKD)
Noninvasive tests for fluid responsiveness
18:30-18:45 **Discussions**

CONGRESS HALL: LABINO

17:30-17:45 Aleksandar Caparevski (MKD)
Surgical and anaesthesiological consideration in posterior fossa surgery
17:45-18:00 Ilir Hasani (MKD)
Endoscopic lumbar spine surgery- Local vs. general anaesthesia
18:00-18:15 Risto Colancevski (MKD)
FLAIL chest - Surgical management
18:15-18:30 Sofija Pejkova (MKD)
WALANT- Surgery: A game changer in anesthesia and bridging the gap between safety, efficiency and patient comfort
18:30-18:40 **Discussions**

CONGRESS HALL: OHRID

08:30-14:00 **WORKSHOP - POCUS**

FATE & Lung Ultrasound
FAST & Gastric Ultrasound

IVAN VELICKOVIC, CRISTIAN ARZOLA, ANA SJAUS, JAVIER CUBILLOS

08:50-14.00 LECTURES
14.00-15.00 LUNCH
15.00-17.00 HANDS ON STATIONS

SUNDAY / APRIL 07

CONGRESS HALL: BILJANA

08:30 - 10:00 POSTER ABSTRACT SESSION

10:00-10:15 **Discussion**

10:15 - 11:15 POSTER ABSTRACT SESSION

11:15-11:30 **Discussion**

11:30 -12:00 CLOSING OF THE CONGRESS

20:30 – 23:00 - DINNER PARTY
RESTAURANT HOTEL METROPOL (LEVEL 0)

AGENDA

12:00 – 17:00

REGIONAL ANAESTHESIA - WORKSHOP - PERIPHERAL BLOCKS

LECTURES: Fatma Saricaoğlu, Alparlan Kuş, Gözen Öksüz,
Derya Özkan, Ismet Topçu, Yavuz Gürkan

09.30 - 11:00 REGISTRATION

11:30-12:00 Upper extremity blocks (Interscalene, Supraclavicular, Infraclavicular, Axillar)

12:00-12:30 Lower extremity blocks (Femoral, Sciatic, Adductor, Peng, Popliteal)

12:30-13:00 Abdomen Blocks Tap, Rectus, Ilioinguinal

13:00-13.30 Thruncal Blocks (ESP, Paravertebral, QLB)

13.30-14.30 Lunch break

Live models practition

Model 1: Upper extremity blocks (Interscalene, Supraclavicular, Infraclavicular, Axiller) - İsmet, Topçu Yavuz Gürkan

Model 2: Lower extremity blocks (femoral, sciatic, adductor, peng, popliteal) - Derya Özkan

Model 3: Abdomen Blocks Tap, rectus, ilioinguinal - Fatma Sarıcaoğlu

Model 4: Thruncal Blocks (ESP, paravertebral QLB) - Alparlan Kuş, Gözen öksüz

	14:45-15:15	15:15-15:45	15:45-16:15	16:15-16:45
Group 1	Model 1	Model 2	Model 3	Model 4
Group2	Model 2	Model 3	Model 4	Model 1
Group 3	Model 3	Model 4	Model 1	Model 2
Group4	Model 4	Model 1	Model 2	Model 3

AGENDA

08:50-17:00

WORKSHOP - POCUS

FATE & Lung Ultrasound
FAST & Gastric Ultrasound

Ivan Velickovic, Cristian Arzola, Ana Sjaus, Javier Cubillos

Program Day 1

8.50 - 09.00	Opening remarks - Ivan Velickovic
9.00 - 09.30	Introduction to FATE (focused assessed transthoracic echocardiography) - Why is FATE so essential for every anesthesiologist - Ana Sjaus
09.30- 09.45	Highlights to HOT 1 - Ana Sjaus
09.45- 11.00	HOT 1: Knobology, FATE views, FATE card page 1, IVC
11.00 - 11.15	Highlights to HOT 2 - Ana Sjaus
11.15 - 12.15	HOT 2: Repetition of HOT 1; M-mode in pos 2, MAPSE/TAPSE
12.15 - 12.45	Caffe break
12.45- 13.00	Highlights to HOT 3 - Ivan Velickovic
13.00- 14.00	HOT 3 - Knobology, Repetition HOT 1,2; HOT 3: M-mode in pos 3, parasternal long axis view
14.00-15.00	Lunch break
15.00-15.15	Highlights to HOT 4 – Javier Cubillos
15.15 -17.00	HOT 4: Certification test and scenario training, discussion, evaluation

Scenario:

CASE 1: Ana Sjaus

CASE 2: Ivan Velickovic

CASE 3: Cristian Arzola

CASE 4: Javier Cubillos

* HOT = Hands-on training

AGENDA

08:30-14:00

WORKSHOP - POCUS

FATE & Lung Ultrasound
FAST & Gastric Ultrasound

Ivan Velickovic, Cristian Arzola, Ana Sjaus, Javier Cubillos

Program Day 2

08.30- 09.00	Introduction to Gastric Ultrasound -Why is Gastric US so essential for every anesthesiologist, Cristian Arzola
09.00- 09.30	Introduction to FAST (Focused assessment with sonography in trauma) - Why is FAST so essential for every anesthesiologist, Javier Cubillos
09.30-10.45	HOT 1: Gastric Ultrasound + FAST
10.45 -11.00	Coffee break
11.00 -11.30	Introduction to Lung Ultrasound – Javier Cubillos
11.30 -12.45	HOT 2: Lung Ultrasound
12.45 -14.00	HOT 3: Case scenarios - Ana Sjaus, Cristian Arzola, Javier Cubillos

* participant in each group is given 3 minutes to perform exam and interpret best images. Scenario revisited with diagnoses and real life images.

15.00-17.00

COURSE

ADVANCED ARTERIAL BLOOD GAS COURSE
Prof. Dr. Tuğhan Utku
Yeditepe University Koşuyolu Hospital

15.00-15.30	Evolution of the acid base concept, conceptual overview
15.30-16.00	Alternative Interpretation of Acid-Base - Physicochemical Approach
16.00-17.00	ABG Interactive section

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ПЛЕНАРНИ СЕСИИ
КОНГРЕСНА САЛА „БИЛЈАНА“

PLENARY SESSIONS
CONGRESS HALL “BILJANA”

VII МАКЕДОНСКИ КОНГРЕС ЗА АНЕСТЕЗИОЛОГИЈА, РЕАНИМАЦИЈА И ИНТЕНЗИВНО ЛЕКУВАЊЕ

MACEDONIAN CONGRESS OF ANAESTHESIOLOGY, REANIMATION AND INTENSIVE CARE MEDICINE

MACEDONIAN SOCIETY OF ANAESTHESIOLOGY AND INTENSIVE CARE MEDICINE

MSA

Здружение на Лекари по Анестезиологија, Реанимација и Интензивно Лекување

WFSA WORLD FEDERATION OF SOCIETIES OF ANAESTHESIOLOGISTS

E S A IC European Society of Anaesthesiology and Intensive Care

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СЕСИЈА 1 / SESSION 1

ANDRIJAN KARTALOV (MKD)

Profesor Dr. Andrijan Kartalov is a Specialist in Anesthesiology and Intensive care Medicine since 2001 and a subspecialist in Clinical pharmacology. He is a full professor of Anesthesiology and Intensive care Medicine and currently he is a Head of Department of Anesthesiology, Resuscitation and Intensive care Medicine and a Hed of department of Anesthesiology for Digestive Surgery. He has finished his master studies in 2008 and 4 years later in 2012 he became a PhD of Anesthesiology and Intensive care Medicine working on his thesis of the efect of Ketamine on the cytokin levels in patients under general anesthesia. During his career he has published more than 50 articles and more than 80 poster presentations.

He has passed a 6 montnth period of Cardiac Anesthesiology Fellowship in Izrael. He was a ESAIC Council Member from Macedonia. His field of interest are General Anesthesiology, Airway management, Regional anaesthesia, Ultrasound guided thoracic and abdominal wall blocks as well as TIVA & TCI.

At the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, Dr. Andrijan Kartalov will give a lecture on "**Vasopressor".**

BILJANA KUZMANOVSKA (MKD)

MD, MSc, PhD. Anesthesiologist

Prof. Biljana Kuzmanovska is a Specialist in Anesthesiology and Intensive care Medicine and a subspecialist in Clinical pharmacology. She is a full Professor in Anesthesiology and Intensive care Medicine and a Head of Department of Anesthesiology for Digestive Surgery. She became a Master of Anesthesiology in 2008 researching about Acid Base balance during surgery and in 2012 she ended her Doctoral studies working on a research project dedicated on Brain oxygenation in patients undergoing laparoscopic surgery. She is a Director of the Course of Contnous Postgraduate education in Anesthesiology and Intensive care Medicine (CEEA). Her field of interest in research is General Anesthesiology, Laparoscopic surgery and Anesthesia, Mechanical ventilation, Acid base homeostasis and disturbances as well as Resuscitation and Intensive care Medicine.

She has published more than 110 articles and participated as a principal investigator in many research projects endrosed by ESAIC.

At the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, Dr. Biljana Kuzmanovska will give a lecture on **"Perioperative temperature management".**

MARIJA SHOLJAKOVA (MKD)

Marija (Šoljakova) Sholjakova is retired Full Professor of anesthesiology at Medical Faculty, University Ss. Cyril and Methodius, Skopje, North Macedonia. Now she is an Accredited full professor for doctoral studies, in the field of medical science, anesthesiology and intensive care at the same University. During her career as an anesthesiologist, she worked at the University Clinic of anesthesiology in Skopje, where she was director (1993-1999). She worked also as a locum tenure in Holand – Dordrecht Community hospital (1982, 1984), in UK, Hammersmith hospital – British Council scholarship (1983-1984), and as Consultant of Anesthesiology at "Marmara" University, Medical School, Istanbul, Turkey (1988-1991). From 1999 –2004 She was Vice Dean at Medical Faculty, University Ss. Cyril and Methodius, Skopje, North Macedonia.

She had several extramural activities. She was President of JORMASMIS - Scientific Group of Students in Macedonia, Member of the Macedonian Association of Doctors, and Treasurer in Yugoslav association of anesthesiology. After the Macedonian independence in 1991 she took activities in the establishment of the Macedonian Society of Anesthesiology and Intensive Care (MSA-1992), where she was Vice president and President (2001-2003).

In 1994 She was elected as a member of The European Academy of Anesthesiology, from1996 a member of SFAR, a member of EAA, observer member of the European Board of Anesthesiology (2002-2010), accredited in neuro-anesthesia, educator, and provider for ALS, PHTALS and member of the Network in advances in transfusion alternatives.

She is Author and coauthor of the textbooks of: Anesthesiology (2012,2017), Nursing Care (2012) and Palliative Care (2022). She published more than 150 articles in Macedonian and Foreign Journals.

LESSER-KNOWN EFFECTS OF LIDOCAINE

Objectives. Recent evidence about the various effects of lidocaine and its wide range of usage as a local anesthetic, antiarrhythmic drug, pain relief drug and other properties, completes its portfolio.

The aim of this article is to present the known and unknown effects of lidocaine.

Method and Result. A systematic search of the available literature, Internet data, Medline and Cochrane databases was done. It resulted in finding 30 sources with data about lidocaine that were consulted. They were organized as: history of lidocaine, pharmacological properties of lidocaine, mode of application, the mechanism of the therapeutic effect and dosage of lidocaine. There was a huge diversity of applications of lidocaine with different effects and mode of action.

Discussion. Lidocaine with its properties involving strong analgesia, long duration of action, and stability of the compound, is the most popular local anesthetic widely used in all types of regional anesthesia. In addition to the existence of newer local anesthetics, lidocaine is still popular for various types of blocks in regional anesthesia as well as an antiarrhythmic agent.The parenteral use of lidocaine has shown antinociceptive, antithrombotic, and anti-inflammatory effects. It has also been found that it provides better postoperative pain relief, has opioid sparing effect, decreases acute pain, prevents chronic postsurgical pain, and has antihyperalgesic effects. Furthermore, it plays an important role in the maintenance of the immune function and has an antitumor effect. It was found useful in the treatment of respiratory distress syndrome. All these lesser-known effects cannot be explained with its known mechanism of action (sodium channel inhibition). This study discusses the effect of lidocaine on pathophysiological events and alternative mechanisms of action.

Keywords: lidocaine, pain, inflammation, immune function, antitumor effects.

ATANAS SIVEVSKI (MKD))

Prof. Dr. Atanas Sivevski, 1961, Skopje, since 1994. is a specialist in anesthesia and resuscitation, 2002. Master of Anesthesiology with Resuscitation, 2007. primarius, 2015 was selected as an assistant professor at the Faculty of Medicine. Skopje; from 2016 is the head of the service for Anesthesia, resuscitation and IL at PJU UGAK; from 2020 is an associate professor. professor of anesthesiology with resuscitation. Dr. Atanas Sivevski has published a total of 115 papers (UKIM Bulletins 1997-2022), of which 51 are author's papers, 3 with IF, 39 published in scientific journals with an international editorial board; author and co-author of 143 abstracts published in proceedings of domestic and international conferences. He has held study stays in: Odense, Denmark (1996), Madrid, Spain (2012), Florence Nightingale Istanbul, Turkey (2013), Al-Amiri Hospital, Kuwait (2014), UKC Ljubljana, Slovenia (2015). year). He actively participates in numerous professional seminars and congresses at the domestic and international level (Europe and the USA); is the recipient of plaques and awards (MLD, Certificate of Recognition-Kybele Inc, 2019). Today, he works as the head of the Anesthesia, Resuscitation and ICU service at PJU UGAK. is the president of UO-ZLARIL and ex. prof. at the Faculty of Medicine, Skopje. ERAS протокол и анестезиолошки пристап.

ERAS PROTOCOL AND ANESTHETIC MANAGEMENT

The term "Enhanced Recovery After Surgery" denotes a multidisciplinary approach of evidence-based strategies applied to conventional perioperative techniques, in order to reduce postoperative complications and achieve early recovery from surgery. **Preoperative recommendations:** preoperative examination aims to identify risk factors and all comorbid conditions that should be optimized before the operation. The ideal agent for premedication should be aimed at reducing surgical stress without the possibility of deeper sedation. In more severe cases of anxiety, short-acting oral anxiolytics can be used, whereas long-acting sedatives (>12 h) are avoided. Evidence suggests that adequate prophylaxis with intermittent compression devices and the use of LMWH is an important part in the struggle against this serious complication. Clear (carbohydrate) liquids are allowed up to 2 h before the operation. **Intraoperative recommendations:** A single dose of antibiotic covering both aerobes and anaerobes is recommended for infection prophylaxis administered immediately before the surgical incision. Optimal volume status is an essential component of ERAS protocols, thus implementing adequate euvolemia is mandatory for ERAS. Intraoperative pain management should be based on the multimodal analgesia (MMA) and opioid-sparing (OSA) techniques with minimal effect on postoperative recovery and gastric motility. Intraoperative and postoperative use of medications like magnesium, dexmedetomidine, ketamine, and lidocaine are indicated. Regional anesthetic techniques, which emphasize the perioperative analgesic effect, such as neuraxial and peripheral nerve blocks are preferred also. The use of neuraxial techniques with low concentrations of anesthetic mixtures which reduce the degree of motor block and promote early mobilization are recommended. **Postoperative recommendations:** early discontinuation of i.v. fluids and initiation of oral fluids, including carbohydrate drinks, is a basic principle of postop. hydration. Early mobilization aims to reduce the deterioration of skeletal muscles and improve respiratory function; patients should be encouraged to achieve daily routine activity as early as possible. NG tubes and drains may slow down bowel function and make pain control more difficult, hence, these should be avoided as much as possible; the same applies to urinary catheters. Early oral nutrition improves recovery of bowel function and does not increase the risk of postoperative complications, so patients are encouraged for early fluid intake and nutrition wherever possible. MMA should consist of local infiltration techniques or peripheral and neuraxial blocks combined with acetaminophen and NSAID, or PCEA where necessary. Small doses of oral opioids for breakthrough pain may be given where appropriate.

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JASMINKA NANCHEVA (MKD)

Prof. Dr Jasminka Nancheva is a Specialist Anesthesiologist with a subspecialty in Clinical Pharmacology, working at the Clinic for Traumatology, Orthopedics, Anesthesia, Reanimation, Intensive Care and Emergency department as a Chef of Anesthesia at Department of Orthopaedics. She completed her Master studies elaborating the Nosocomial infections in the ICU related to a central venous line and her PhD thesis was dedicated fully on the evaluating the patients stress response who underwent surgery under different types of anesthesia, focusing on the regional anesthesia techniques. She has completed numerous educational visits outside this country which includes educational stay in Rigs Hospital, Copenhagen, Algemainehouse in Vienna, Roland Regal Hospital-UCLA, Papa Nikolau Hospital in Thessaloniki and Liv Hospital in Istanbul. She has published numerous articles from the different fields of Anesthesiology but her special field of interest is Regional anesthesia, especially the use of regional anesthesia techniques in children. Her special field of interest and expertise are the ultrasound guided regional anesthesia techniques in adults as well as in children including peripheral nerve blocks of the upper and lower extremity.

INTRAFETAL SURGERY AND ANESTHESIA

J. Nancheva, B. Kiprijanovska, A. Nancheva Bogoevska, N. Andonovska

Intrafetal surgery is operative procedure which is performed on a pregnant mother to treat her baby before it is born. Maternal-fetal surgery can occur either during the middle of pregnancy or at the end of the pregnancy.In all cases, anesthesiologists are involved to provide for the comfort and safety of pregnant mothers and their babies. As these defects and malformations have become more readily identified, the number of innovative therapies have also amplified.The rapid advances in imaging techniques and prenatal diagnosis, have allowed for the progressive development of prenatal interventions and surgeries and today they have become an integral part of the management of high risk pregnancies. In addition, the rapidly growing capability of digital optics and miniaturized instrumentation has now allowed fetoscopic procedures to become a reality.

There are 3 basic types of surgical interventions: 1.Minimally invasive midgestation procedures, 2.Midgestation open procedures, 3.Ex utero intrapartum treatment(EXIT). These procedures require many manipulations and monitoring in both the mother and the unborn fetus.

The combination of underdeveloped organ function and usually life-threatening congenital malformation places the fetus at a considerable risk. Fetal surgery also leads to enhanced surgical and anaesthetic risk in the mother including haemorrhage, infection, airway difficulties and amniotic fluid embolism, so anesthetic management should focus on maintaining adequate uteroplacental blood flow, optimizing surgical conditions, and mini-mizing maternal and fetal risk.

Key words: Maternal-fetal surgery, fetoscopy, ultrasound guided procedures

СЕСИЈА 2 / SESSION 2

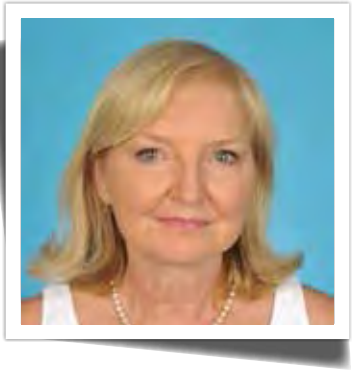
IDIT MATOT (ISR)

Prof Matot is the Director of the Division of Surgery and Chair of the Department of Anesthesiology, Intensive Care and Pain at the Tel Aviv Medical Center, Israel. Prof Matot is the Immediate Past Chair of the Scientific Committee of the European Society of Anesthesiology and Intensive Care (ESAIC) (2019-2024) and in 2022 she received the Honorary member award of the ESAIC. Additional honorary awards received are from the Romanian Society of Anesthesia and Intensive care (2019), International Federation of the Dentistry Anesthesiology (2024) and the German Society of Anaesthesiology and Intensive Care Medicine (DGAI) (2022). Prof Matot was also the President of the Israeli Society of Anesthesiologists (ISA), representative for the ISA at the NASC and member of the nomination committee of the ESAIC. Prof Matot was a member of the Research Committee and Transfusion Committee of the ESAIC, chair of the Geriatric anesthesia Committee of the ESAIC. Her research interests include both experimental research related to the liver (perfusion, hemodynamics, effects of blood transfusion, the regeneration process), and clinical outcome research in the perioperative period. Dr Matot received her M.D at the Hebrew University, Jerusalem, Israel. Following medical school she spent 3 years as a research fellow at the Department of Anesthesiology, University of Pennsylvania, Philadelphia, studying tone dependent responses in the pulmonary vascular bed. She completed her anesthesia residencyat the Department of Anesthesiology and Critical Care Medicine in Hadassah Medical Center, Hebrew University, Jerusalem after which she returned to the University of Pennsylvania in Philadelphia, Department of Environmental Medicine, for further studies on lung injury and few years later to Department of Anesthesiology at Stanford University. Prof Matot received multiple prestigious grants including an award grant from the American Society of Cardiovascular Anesthesiologists, GIF (German Israel Foundation), ISF (Israel ScienceFoundation) and more. Prof Matot has published > 100 peer review papers in prestigious journals and is an invited speaker to many international meetings.

PERIOPERATIVE PATHWAY FOR THE ELDERLY

Department of Anesthesiology, Intensive Care and Pain at the Tel Aviv Medical Center, Israel

The elderly patient scheduled for surgery has the highest postoperative complications and mortality rates. Nevertheless, in many centers, this patient population does not get focused attention. In my talk I will discuss the setting of developing an infrastructure for the surgical elderly population. Topics that will be highlighted are preoperative testing for cognition and frailty, postoperative surveillance for delirium both in the PACU and the ward, protocoled journey for the hip fracture patient with the anesthesiologist as case manager, initiatives to improve patient's well-being (such as escorting the patient into the operating room), and more. I will also present data that challenge misconception such as the effect of midazolam on postoperative delirium (does it?), are there futile surgeries and does intraoperative hypotension affect delirium rate. Recent publications from the department will be presented – all of which published in the last year or so with significant results that might affect the way we treat this ever growing patient population.



MAJA SOSTARIC (SLO)

Assoc. prof. dr. Maja Šoštarič graduated from primary school at the University of Ljubljana in 1989. After graduation, she was employed at University Medical Center Ljubljana and completed her specialization in anesthesiology and reanimatology, and specialization in intensive medicine. From 2005 she is the head of the department for cardiovascular anaesthesia and intensive care. In 2006 she attained a doctorate and in 2020 she was habilitated to the title of associated professor at the Medical Faculty of Ljubljana. Since 2010, she has also been employed at the University of Ljubljana, and from 2012 she has been the head of the Cathedra of Anaesthesiology and reanimatology. In her research work, she focused on perioperative management for minimally invasive cardiac surgery; neuroprotection in cardiac surgery; Fast-track in cardiovascular surgery; and regional anaesthesia for thoracic surgery. Invited lectures and publications in scientific journals are from this field. As a member of the research group, she was involved in the development of new methods in cardiac surgery in the research work that was submitted for the ARRS project. The field of acute and chronic pain relief brings together specialists from various medical fields. As the head of the UL program group, she participated in the ERASMUS+ project entitled "Strengthening Capacities for Higher Education of Pain Medicine in Western Balkan Countries". She is a mentor for residents in aneaesthesia, reanimatology and perioperative intensive medicine and a mentor to doctoral students. She is a member of Medical Chamber of Slovenia, Slovenian medical association, Slovenian society of anaesthesiology and intensive medicine, ESAIC and EACTAIC. She was a president and at the moment she is vice-president of Slovenian society of anaesthesiology and intensive medicine Publications in international professional journals As 1st or lead author, she has 18 publications in international professional journals with IF. As an invited lecturer, she participates in national and international conferences.

THE IMPORTANCE OF PREHABILITATION PROGRAM FOR THE SUCCESS OF SURGICAL TREATMENT OF THE ELDERLY

ABSTRACT

With ageing population, surgery is being performed more frequently in progressively older patients and those with a higher prevalence of comorbidities. Prehabilitation has emerged as a crucial strategy for improving outcomes in surgical patients, particularly for older or frail individuals who are at higher risk of morbidity and mortality following surgical procedures[1].

Frailty, characterized by diminished endurance, strength, and increased vulnerability to adverse health events, serves as a more accurate predictor of surgical outcomes compared to age alone[2]. Studies, such as Shinall et al.'s investigation involving over 430,000 mostly male patients undergoing noncardiac surgeries, have demonstrated significantly elevated mortality rates among frail patients, emphasizing the importance of preoperative preparation[3]. Traditional surgical practices often include unnecessary elements that exacerbate the body's stress response, such as fasting before surgery, which was initially introduced in the 19th century but continues in some institutions despite updated anesthesia standards.

Multimodal approaches like Enhanced Recovery After Surgery (ERAS) protocols, aim to replace these traditional practices with evidence-based methods to mitigate the surgical stress response[4]. ERAS protocols incorporate various perioperative elements that minimize stress and promote homeostasis, including the avoidance of fasting, leading to improvements in patient outcomes such as reduced complications, shorter hospital stays, and lower costs,

particularly noted in colorectal surgery. Prehabilitation encompasses unimodal or multimodal interventions aimed at improving patients' overall health status weeks prior to surgery. Various risk factors, including smoking, alcohol consumption, malnutrition, and mental health disorders, further exacerbate complications in elderly surgical patients. In addition, a significant percentage of elderly patients experience transient postoperative delirium following surgery or long-term postoperative cognitive dysfunction.

These factors underline the necessity of prehabilitation protocols to enhance the patients' health status before procedures and potentially mitigate risks. Interventions focus on modifiable risk factors to improve the physical, nutritional, and mental status of the patient. Several molecular effects of exercise have an effect on wound healing by vascular repair, neuroprotection, anti-inflammation, and tumor repair.

This prompts discussions about the potential replacement or integration of conventional preoperative and postoperative care, including ERAS protocols, with prehabilitation strategies to optimize long-term surgical outcomes.

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OLEGS SABELNIKOVS (LAT)

Current Positions:

- Associate Professor, Riga Stradiņš University (Riga, Latvia); Director of Anaesthesiology and Reanimatology Residency Training Programme.
- Anaesthesiologist and Reanimatologist; Deputy Chair of the Anaesthesiology and Reanimatology Clinic at Riga Stradins Clinical University Hospital (Riga, Latvia).

Other Positions:

- President, European Section and Board of Anaesthesiology.
- Delegate from Latvian National Medical Association (NMA) to UEMS.
- Board Member, European Society of Anaesthesiology and Intensive Care (ESAIC).
- Vice-President, Latvian Society of Anaesthesiology and Reanimatology.
- Expert of Latvian Council of Science (Clinical Medicine, Anaesthesiology, Reanimatology).

Training:

- Medical Studies: Riga Stradiņš University (1994-2000).
- Residency in Anaesthesiology and Reanimatology: Riga Stradins Clinical University Hospital (2000-2004).

Member of Editorial Board:

- "Macedonian Journal of Anaesthesia", ISSN 2545-4366.
- Review Editor, "Frontiers in Anesthesiology" (Critical Care Anaesthesiology section).

THE ROLE OF "EBA IN HARMONIZATION OF ANAESTHESIOLOGY TRAINING IN EUROPE

The European Board and Section of Anaesthesiology (EBA) operates as a specialized division within the European Union of Medical Specialists (UEMS) and plays a pivotal role in harmonizing anaesthesiologists' training across Europe. Through the establishment and promotion of common standards, guidelines, and best practices, the EBA ensures a standardized approach to anaesthesiology training throughout European countries. This is primarily achieved through the development of European Training Requirements (ETR), which are endorsed by the UEMS Council, comprising representatives from National Medical Associations of EU member states. These requirements encompass various aspects related to trainers, trainees, and training institutions and are intended to serve as the basis for national curriculum development.

In collaboration with the European Society of Anaesthesiology and Intensive Care (ESAIC), the EBA promotes the Accreditation of Training in Anaesthesiology and Intensive Care (ATAIC) program. ATAIC offers accreditation to hospitals and training centers that uphold high standards of education and training in anaesthesiology and intensive care.

Furthermore, the EBA endorses the European Diploma in Anaesthesiology and Intensive Care examination (EDAIC), organized by ESAIC. This multilingual, end-of-training, two-part examination covers relevant basic sciences and clinical subjects pertinent to specialist anaesthesiologists.

In addition to these efforts, the EBA prioritizes various initiatives related to patient safety, as well as workforce development, working conditions, and welfare. These initiatives significantly contribute to the standardization and quality assurance of anaesthesiology training, thereby facilitating professional mobility and ensuring consistently high standards of patient care across Europe.

СЕСИЈА 3 / SESSION 3

IDIT MATOT (ISR)

Prof Matot is the Director of the Division of Surgery and Chair of the Department of Anesthesiology, Intensive Care and Pain at the Tel Aviv Medical Center, Israel. Prof Matot is the Immediate Past Chair of the Scientific Committee of the European Society of Anesthesiology and Intensive Care (ESAIC) (2019-2024) and in 2022 she received the Honorary member award of the ESAIC. Additional honorary awards received are from the Romanian Society of Anesthesia and Intensive care (2019), International Federation of the Dentistry Anesthesiology (2024) and the German Society of Anaesthesiology and Intensive Care Medicine (DGAI) (2022). Prof Matot was also the President of the Israeli Society of Anesthesiologists (ISA), representative for the ISA at the NASC and member of the nomination committee of the ESAIC. Prof Matot was a member of the Research Committee and Transfusion Committee of the ESAIC, chair of the Geriatric anesthesia Committee of the ESAIC. Her research interests include both experimental research related to the liver (perfusion, hemodynamics, effects of blood transfusion, the regeneration process), and clinical outcome research in the perioperative period. Dr Matot received her M.D at the Hebrew University, Jerusalem, Israel. Following medical school she spent 3 years as a research fellow at the Department of Anesthesiology, University of Pennsylvania, Philadelphia, studying tone dependent responses in the pulmonary vascular bed. She completed her anesthesia residencyat the Department of Anesthesiology and Critical Care Medicine in Hadassah Medical Center, Hebrew University, Jerusalem after which she returned to the University of Pennsylvania in Philadelphia, Department of Environmental Medicine, for further studies on lung injury and few years later to Department of Anesthesiology at Stanford University. Prof Matot received multiple prestigious grants including an award grant from the American Society of Cardiovascular Anesthesiologists, GIF (German Israel Foundation), ISF (Israel ScienceFoundation) and more. Prof Matot has published > 100 peer review papers in prestigious journals and is an invited speaker to many international meetings.

WOMEN ANESTHESIOLOGISTS ATTITUDE AND REPORTED BARRIERS TO CAREER ADVANCEMENT IN ANESTHESIA

Department of Anesthesiology, Intensive Care and Pain at the Tel Aviv Medical Center, Israel

Gender imbalance in anaesthesia leadership needs further exploration. Whether women (compared to men) anaesthesiologists aspire to career advancement and what are their reported barriers to advancement, are the focus of this talk. In total, 3048 ESA members (1706 women, 1342 men, 30% of all ESAIC members) responded to a survey that addressed these questions. The majority were specialists, married or with a partner, and have children; 47% of women and 48% of men wish to pursue a leadership career. Barriers to career promotion noted by women were primarily attributed to work–private time considerations (extra workload and less personal time [84%], responsibility for care of family [65%], lack of part-time work opportunities [67%]), and the shift away from clinical work [59%]). Men respondents indicated the same barriers although the proportions were significantly lower. Considerations related to the partner (lack of support, career development of partner) were last on the list of variables reported by women as barriers. Importantly, many women noted deficiencies in leadership (68%) and research education (55%), and women role models (41%) and self-confidence (44%). Although many barriers are noted by women, they are as eager as men to assume leadership positions. The survey results help in identifying possible areas for intervention to assist in career development.

MIODRAG MILENKOVIC (SRB)

Associated Professor at the University of Belgrade, Faculty of Medicine, Belgrade, Serbia. Head of Anaesthesiology section in Operation Room, Department of Anaesthesiology and Resuscitation, Emergency Center, Clinical Center of Serbia. Dr Milenovic is member of the Professional Wellbeing Committee and immediate Past Chair of the Education Committee of the World Federation of Societies of Anaesthesiologists (WFSA), member of the European Society of Anesthesiology (ESA) and Serbian Association of Anaesthesiologists and Intensivists. Dr Milenovic received his PhD academic degree in Epidemiology at the University of Belgrade, Faculty of Medicine. His major fields of interest are patient safety, professional wellbeing and anesthesia education.

FRAILTY AS A RISK PREDICTOR OF PERIOPERATIVE MORBIDITY AND MORTALITY

Miodrag Milenović[1,2], Marija Rajković[1,2] Tijana Nastasović[1,2] Ana Sekulić[1,3] Ivana Petrov Bojičić[1,4], Dušica Simi4[1,2]

[1.]Medical Faculty, University of Belgrade, Serbia [2.] University Clinical Centre of Serbia, Department of Anesthesiology and Intensive Care, Belgrade, Serbia [3.] CHC Bežanijska Kosa, Department of Anesthesiology and Intensive Care, Belgrade, Serbia [4.] University Children's Hospital, Department of Anesthesiologlt and Intensive Care, Belgrade, Serbia

Frailty is characterized by a cluster of clinical criteria, including unintentional weight loss, self-reported exhaustion, weakness, slow walking speed, and low levels of physical activity.. Its significance is particularly pronounced during the perioperative period, when patients experience elevated levels of stress and inflammation. Frailty is associated with ageing and is characterized by a vulnerability to stressor: internal and external. Distinct from medical comorbidity and functional disability, evidence suggests that frailty more accurately predicts hospitalization, institutionalization, and mortality among elderly outpatients. Perioperative medicine is being established to provide optimal preoperative, intraoperative and postoperative care for all patients, with a focus on those at high risk of adverse postoperative outcomes.

The high-risk group is defined as surgical patients with an aggregate 90-day mortality rate greater than 1/20. These high-risk patients are predominantly those with age related physiological changes, accumulation of multimorbidity and geriatric syndromes including frailty. With the advent of this new speciality, perioperative medicine, it is no surprise that there has been a focus on identifying patients with frailty in order to modify the perioperative pathway and achieve improved outcomes for individual patients. Projections for the future by 2030, assumes that 1/5 of all surgical procedures will be conducted in patients over 75 years old. By the surgical pathology nature, it is often degenerative, neoplastic, or metabolic. It is predictable that the surgical population is ageing. While frailty is associated with ageing, it not exclusively observed in older people, nor all elder people are frail. Incorporating measures of frailty into clinical practice is essential for devising interventions aimed at combating disabling conditions in older individuals.

The frailty phenotype, established and verified by Fried and colleagues in the Cardiovascular Health Study, and the Frailty Index, introduced and authenticated by Rockwood and colleagues in the Canadian Study of Health and Aging, are widely recognized as the primary operational definitions of frailty in older individuals. Frequently reported complications for patients above 80 years old associated with in-hospital mortalities were bleeding, respiratory and mental deterioration with unplanned intubation and septic shock. Nevertheless, 30-day mortality rate of 4.2%, in patients above 80 years, represents well tolerated anaesthesia in quite vulnerable population.

Several mortality-related risk factors have been identified. Importance of peri-interventional organization and services for elderly, patient-centred and flexible treatment approaches. Prehabilitation programmes, peri-interventional geriatric expertise and post-discharge surveillance are needed.

VESNA DURNEV (MKD)

Associate Professor of Anesthesiology at Medical Faculty, Ss Cyril and Methodius University;
Head of Department for Neurosurgical Anesthesia, Reanimation and Intensive Care – University Clinic of Traumatology, Orthopedics, Anesthesia, Reanimation, Intensive Care and Emergency, University Clinical Center "Mother Theresa", Skopje
President of Macedonian Society of Anaesthesiologists and Intensive Care Medicine.

Fully qualified in anaesthesia with extensive experience and commitment to neurosurgical intensive care medicine. Dedicated to share the knowledge and skills among students and anaesthesia residents, educator in simulation center and hospital transplant coordinator.

ULTRASOUND IN ANAESTHESIOLOGY TRAINING - PRESENT TRENDS AND FUTURE

Durnev V.[1], Naumovski F.[1]
[1] University Clinic for Traumatology, Orthopaedic Diseases, Anaesthesia, Reanimation, Intensive Care and Emergency Center, Clinical Center "Mother Teresa", University "Ss. Cyril and Methodius", Faculty of Medicine, Skopje, RN Macedonia

Ultrasound as rapidly emerging science that is relatively affordable, portable, safe and available and has a wide range of use in many different specialties. Anesthesiologists have identified many potential use cases for ultrasound in anesthesiology, and research has confirmed its many benefits for both real-time guidance and clinical decision-making. The emergence of Point of Care Ultrasound (POCUS) has made this imaging technology more cost-effective and easier to use, and thus more accessible to anesthesiologists and other subspecialists and compared to other initial bedside assessment offer real time valuable diagnostic and therapeutic insights. Ultrasound-guided nerve block is among the most common uses of POCUS in anesthesiology. Ultrasound has also been shown to offer excellent guidance for difficult venous access. In patients with a difficult airway, neck ultrasound provides an accurate visualization of the trachea and esophagus. Ultrasound can help anesthesiologists in surgical risk assessment identifying cardiac, pulmonary, and gastric risk factors before and during surgery. Diverse use for ultrasound, and a growing body of research shows that improves patient outcomes, and enriches quality of care.
As the ultrasound guidance is becoming standard practice of future, anaesthesiologists need to develop a thorough understanding of this technology and practical skills by training themselves. The training in ultrasound techniques becoming part of the core training of every anaesthesiologists. The European Society of Anesthesiology and Intensive Care has created POCUS guidelines for the perioperative use of regional anesthesia and vascular access. American Society of Anesthesiologists introduced POCUS guidelines and a certification program. This provides clinicians with qualifications in three primary areas: cardiac, lung, and abdominal ultrasound as well as six secondary applications: musculoskeletal/soft tissue, airway, ocular, transcranial Doppler, renal/genitourinary, and deep venous thrombosis.
Future trends in ultrasound develop in few directions. Traditional ultrasound teaching is normally delivered using large, costly and advanced cart-based systems or laptop style systems. Many of these systems can be intimidating and can lead to poor uptake of ultrasound into clinical practice. This is being progressively changed with the advent of smaller handheld devices, financially affordable for most practitioners.
Ultrasound as popular imaging modality has received notable attention from the AI community. There is no doubt that AI and the related technological advances will impact the ultrasound-based screening and diagnostic services. Ultrasound practitioners supported by technology could reduce their subjectivity, improve the clinical workflow and increase diagnostic accuracy paving the way for even more diverse utilities and possibilities for ultrasound in the future of anaesthesiology.

Key words: ultrasound, artificial intelligence, anaesthesia training, PoCUS, regional anaesthesia.

ALEKSANDRA GAVRILOVSKA BRZANOV MD, MSC, PHD (MKD)

Aleksandra Gavrilovska Brzanov MD, Msc, PhD is a Specialist in Anesthesiology resuscitation and Intensive care since 2014 and a subspecialist in Pediatric Anesthesia since 2021 working in University clinic for TOARILUC at the Department of Anesthesia, Reanimation and Intensive Care. She is a PhD since 2018 when finished her thesis "Carboxyhemoglobin and methemoglobin as predictors for postoperative respiratory complications". She underwent few seminars in Salzburg as well as few educational visits as an observer in Ljubljana, Slovenia as well as Vienna, Austria. She has been working as a cardiac anesthesia resident in Sudan and has passed a Pediatric Advanced Life Support Program in USA back in 2016. Her field of interest are Pediatric Anesthesia and Intensive Care as well as application of Anesthesia techniques in Urology.

BUILDING COLLABORATIVE ENVIRONMENT FOR WORKPLACE SUCCESS

University Clinic for Traumatology, Orthopaedic Diseases, Anesthesia, Reanimation, Intensive Care and Emergency Center, Medical Faculty, University SS Cyril and Methodius, Skopje Macedonia

Abstract: The foundation of any successful institution is teamwork. Improved performance, a more engaged staff, and elevated levels of trust are observed in collaborative workplaces. Establishing a collaborative environment among medical experts is crucial in the medical sector to ensure organizational success and effective patient care. The dynamics of teamwork in healthcare environments are challenging, with a special emphasis on interactions among leaders and employees. This evaluation assess and improve collaboration dynamics among healthcare professionals by introducing the DOPE (Desired Outcome, Outputs, Process, and Enablers) assessment framework. This framework classifies individuals into distinct personality types: Dominant, Outstanding, Supportive, and Cautious.

Inspired by a number of personality typologies, such as the well-known 4 Bird Personality Test with its dove, owl, peacock, and eagle archetypes, the DOPE evaluation adds further archetypes to its repertory of characters. The aforementioned supplementary personas offer refined perspectives on personal inclinations and modes of communication in healthcare groups. To get a better idea of how the birds cooperate, you can mix and match the aforementioned categories. Although the data that comes out of it should be used as a reference to assist us in making improvements to our life in light of the conclusions.

Healthcare leaders can customize tactics to foster productive collaboration by utilizing the unique qualities of each personality type and the traits that go along with them. The DOPE evaluation is investigated in the application approach to promoting a collaborative culture among healthcare teams through case studies and useful insights. In the end, this strategy leads to better patient care outcomes, staff satisfaction, and organizational success.

Key words: DOPE bird personality test; collaborative environment; workplace success.

СЕСИЈА 4 / SESSION 4

MEDHAT SHALABI (UK)

Professor Medhat Shalabi has the highest qualifications obtainable in Egypt and in the UK. He also has his training to the highest standards in Egypt as a university staff member in Alexandria University, and in the UK as a Specialist Registrar in the Merseyside (Liverpool) Deanery. He presented many papers to the Anesthetic Research Society (UK) and the British Nutrition Society. Prof. Shalabi went through the entire training scheme in the UK. He worked as a Senior House Officer and specialist Registrar in Anesthesia, till he obtained his CCST & Specialist Registration with the General Medical Council, then worked as a Consultant Anesthetist in the UK for over ten years. He is a regular guest speaker in many International Anesthesia Conferences e.g., The Egyptian Anesthesiology Society, Alexandria Anesthesia & Intensive Care Society, Pan Arab Anesthesia Society, All Africa Anesthesia Society, Emirates Critical Care Society, Asia Africa Critical Care Society, International Pan Arab Critical Care Medicine Society, the Iranian Anesthesiology & Intensive care society, the Turkish Anesthesiology & Intensive Care Society, and the World Congress of Anesthesiology (WCA). Prof. Shalabi is a member of the editorial board of the Egyptian Journal of Anesthesia (EgJA). He is a European Resuscitation Council (ERC) and UK Resuscitation Council International Instructor and Course Medical Director for Advanced Life Support (ALS) Courses, and a Generic Instructor Course Instructor (Instructing the instructors). He used to be an Expert member on the UK Research Ethics Committee. He attended many courses in Medical Law and Ethics at King's College London and the Imperial College London.

WHAT IS THE REAL ERAS? WHY IT SHOULD BE THE NORMAL STANDARD OF PERI- OPERATIVE CARE?

In this lecture I will start by the definition of ERAS.
This definition is of utmost importance to know and understand. Highlighting the fact that It is mainly evidence based practice and Peri-operative (Pre, Intra, & Postoperative)

The lecture will focus on the benefits of ERAS that resulted in its widespread desire of its implementation.

These benefits are, the massive improvement of perioperative care of our patients, resulting in a very high patient satisfaction, excellent patient experience and outcome. Adding to this the most important fact of cost reduction. This cost reduction is the result of much shorter Length of Hospital Stay (LOS), marked reduction of complications rate, both Surgical complications such as surgical site infection, and Medical complications such as chest infections and DVT by 40-60%.

Then, will try to explain the Implementation barriers, obstacles, and how to overcome and achieve successful implementation.

THE VITAL ROLE OF THE ANESTHETIST IN ERAS

Is about the important role of anesthetists (Perioperative Medicine physicians) in ERAS.

As ERAS is Perioperative, Anesthetists as Perioperative physicians are the best fit to be ERAS champions in their hospitals.

Preoperative: Preoperative assessment, patient's education, and Optimization.

Intraoperative: Individualized patient management, Patient Temperature Management and the prevention of unintentional Hypothermia, Proper fluid Management, effective pain management, etc.

Post operative: Early DREAMS; Early Drinking, Eating, Mobility, Sleep.
This will be followed by some ERAS videos of real patients showing how impressive the outcome can be .

THOMAS HACHENBERG (GER)

1977 - Prof. Hachenberg enrolled at the Westphalian Wilhelms University in Münster 1983 - Prof. Hachenberg received his license to practice medicine 1984 - Promotion to Dr. med. ; Topic: "Informativeness and possible statements of expiratory CO2" 1984-1994 - Research assistant at the clinic and polyclinic for anesthesiology and intensive care medicine at the Westphalian Wilhelms University in Münster 1989 - Completion of specialist training; 1990 - Appointment as senior physician 1990 - Habilitation and granting of the Venia legendi (private lecturer) for the subject of anesthesiology; Topic: "Apnea ventilation with constant intrabronchial gas flow" 1994 - Professorship (C3) for anesthesiology at the Ernst Moritz Arndt University of Greifswald in the role of senior physician and deputy clinic director 1995 - Doctor of medical science at Uppsala University; Topic: "Gas exchange impairment in patients undergoing cardiac surgery" 1997 - Recognition of the subspecialization "Special anesthesiological intensive care medicine" 1999 - Expert advisor to the anesthesiology commission at the Mecklenburg-Western Pomerania Medical Association 2001 - Obtained a chair at the Medical Faculty of the Otto von Guericke University Magdeburg in the Clinic for Anaesthesiology and Intensive Therapy.

At the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, Dr. Thomas Hachenberg will give a lecture on **"Fast track in thoracic anesthesia"**

BORISLAVA PUJIC (SER)

Borislava Pujic, MD, PhD, Prim. is a board-certified anesthesiologist with a specific interest in regional anesthesia in gynecology and obstetrics, as well as ultrasound-guided truncal blocks. Most of her working time is devoted to researching stress among anesthesiologists post on-call duties, and in the last several years, she has focused on implementing the first ERAS protocol after cesarean section in Serbia. Dr. Pujic is a member of the International expert group for ERAS.

As an invited lecturer, she has spoken at numerous anesthesia congresses in Serbia and surrounding countries. Every year, she actively participates in the Society for Obstetric Anesthesia and Perinatology (SOAP) Annual Meeting.

Over the past 14 years, she has collaborated with Kybele, a non-profit organization from the USA, to promote regional anesthesia in obstetrics. She organized thirteen Schools of OB Anesthesia, featuring unique workshops in the Labor and Delivery Department. Her hospital has become recognized as a teaching hospital for regional anesthesia in Serbia and the entire region.

In the last two years, she also initiated a POCUS course primarily for anesthesiologists but open to other specialists as well. She actively serves as an organizer and lecturer, including workshops. She served as a coordinator for the translation of the Stanford Obstetric Anesthesia Emergency Manual into the Serbian language.

ERAS FOR CESAREAN DELIVERY- FROM IDEA TO IMPLEMENTATION

UCCV, Clinic of Anesthesia, Intensive Care and Pain Therapy, Novi Sad, Serbia

Summary: Enhanced Recovery After Surgery (ERAS) is not a new concept in anesthesia but still is new in obstetrics. Implementation of this program is well known in some developed countries. ERAS is the first concept where the patient has an active role- its wish to return as soon as possible to every day duties and normal routine.

ERAS was introduced for gynaecological oncology procedures at first and many years later for obstetrics (specially for Cesarean Delivery- CD). ERAS Society has its own protocols created for every surgery.

ERAS implementation is a very hard work in developed health care system as well in developing countries, too. This protocol has three parts: preoperative, intraoperative and postoperative. This program is not suites to every patient and one of the first important parts is patient randomization. Only healthy patients and those with mild comorbidities are good for this program. It has to be tailored for every hospital and adopted in Health Care System. The most important part is to find members of the team and team leader. Protocol creation is next step and implementation is a final step. After the gathering all team members and protocol creation it is necessary to inform hospital management and head of the hospital, then ask for Ethical Committee consent. Written information and patient education are two very important parts which start in obstetrician's office, continuous in anesthesiologist's office and prepare patient for future surgery. There are different obstacles in this implementation in every step. Once, if team jumped all the obstacles, it is very obvious that this protocol gives many advantages to obstetricians, anesthesiologists, nurse anesthetists, post- surgical nurses, hospital and the most important part is highly satisfied mother.

Conclusion: ERAS implementation is a very hard work in developed health care system as well in developing countries, too. In our environment, it is even harder. Medical professionals suffer from bournout, everywhere is luck of staff and nobody is motivated to have an extra work. At the end, the most important thing is patient satisfaction and with this protocol implemented it is enormous.

СЕСИЈА 5 / SESSION 5

MAJA MOJSOVA MIJOVSKA (MKD)

2011 Transplant Coordinator Scholarship from ISODP/TTS/ Astellas. 2012 Zagreb, Sestre Milosrdnice Hospital 3 weeks training in deceased donor transplantation and hospital coordinator. 2014- become a hospital transplant coordinator. 2015- she finished with success the advanced school for organ transplantation-TPM, (Transplant Procurement Management) University of Barcelona. 2016- she defended her doctoral thesis " The role of targeting central venous pressure on the early graft function in living donor transplantation". 2017- she was appointed from the Ministry of Health from North Macedonia as a representative in (South- Eastern Europe Health Network) SEEHN in WHO in the field of transplantation. 2017 she became head of the University Clinic of Anesthesia, Reanimation and Intensive Care-(KARIL)-Mother Theresa-Skopje. In august 2018 she was appointed from the Government of North Macedonia as a National Transplant Coordinator. During her mandate she managed to increase the total number of deceased donation and open 3 more programs as heart transplantation, bone and tissues transplantation and liver transplantation. The same year she started working as an Ass.Prof. in faculty of medical sciences "Goce Delcev"-Stip. In march 2019 she was elected for the President of Macedonian Society of Anesthesiologist from North Macedonia. Same year in October she organized the 6th Macedonian Congress of Anesthesiologist from North Macedonia with international participants held in Ohrid. She won e prestigious reward „ 13 November„ of the capital of North Macedonia- Skopje for humanism and achievements in the field of organ donation and transplantation in 2020. She was proclaimed for the women of the year for 2021 in Republic of North Macedonia. In 2022 she was reelected form the Government of North Macedonia for National Transplant Coordinator for the second mandate. In this past years we established the organ donation program in the country and for the first time during the past corona pandemic time we managed to perform 8 heart transplantation and 47 deceased donor kidneys transplantation, 3 livers and 11 bones transplantations. In 2022 she was reelected for National Transplant coordinator and start the new mandate for another 4 years. In 2023 she won the state reward for achievements in liver transplantation. She is member of European commission in the field of organ and tissue transplantation. She is working as a Professor in faculty of medical sciences "Goce Delcev"-Stip.

ORGAN DONATION AND TRANSPLANTATION IN NORTH MACEDONIA

Introduction: Organ transplantation saves thousands of lives every year but the shortage of donors is a major limiting factor to increase transplantation rates. To allow more patients to be transplanted before they die on the wait-list an increase in the number of donors is necessary. Multiple steps in the process of deceased organ donation can be targeted to increase the number of organs suitable for transplant. In our country we started with deceased organ donation in 2014 with small numbers of donors (2 per million)and the only program that was developed was kidney transplantation . This program was established 30 years ago and mostly form living related donor.

In the period of 2016-2018 there was no improve of the program of kidneys transplantation from deceased donor. Lack of Intensive Care Unit (ICU) facilities for taking care of potential donors, and low public awareness regarding brain death have been quoted as significant hurdles to deceased organ donation in the rest of the country. The common parameter adopted in different countries to measure the activity of organ donation has been traditionally the number of donors/million population. Although this metric is prone to the flaws of regional variations in health status, it is still used worldwide

Several obstacles have been overcome over the last few decades to make organ transplantation an effective life-saving treatment for many patients. Among them, the refinement of surgical techniques and the availability of

effective immunosuppressive regimens against rejection have played a major role. However, only the availability of of donated organs from deceased persons has made it possible for organ transplantation to become an established, worldwide treatment for patients with organ failure.

Developing of program of organ donation was challenging and for the first time in 2020 was established the program for heart ,liver and bone transplantation. During the start of Covid 19 pandemic we decided to stop the program due to lack of information but the patients with organ failure cannot wait so in may we started the program. On May 23 in 2020 we had the first consent from the family for the donation of the kidneys and the heart . The first time in our country the heart and kidneys were transplanted at the same time. That historical day was the starting point for building the system of organ donation and transplantation in the country and during this year and half we managed to have nine consent of the families and performed 6 heart transplantations. 16 kidneys and 4 bone transplantation form deceased donors after brain death. The role of media was very important in this stage and of course this was the way to rich the citizens and to raise the awareness of organ donation.

Without the “gift of life” from deceased donors, it is difficult to imagine how so many lives could have been saved. Patients with devastating irreversible brain injury, if medically suitable, are potential deceased donors and strategies are needed to successfully convert them into actual donors.

The donor’s family plays a key role in the donation process. A dedicated team of trained personnel approaches the family in a sensitive way. This trained doctors have enough knowledge and they were trained in past several years in TPM network, basic and advanced courses and workshops.

However, organ harvestation rates from potential donors can be further increased. The biggest impact on raising awareness among population has the media and telling the story about philanthropy, nobility and global human love. Raising the awareness among population means that we have to explain the hole process of organ donation, the status of brain death and donation after brain death. Maybe this is the most complicated and challenging part of the program. From the other hand the successful transplantation led to gaining back the trust in to the heath care system.

Conclusion: An increase in deceased organ donation is necessary to make organ transplantation accessible to more candidates. Among others, new strategies to manage the pool of potential donors are needed in order to increase donation rates. The need of national campaign of deceased organ donation and raising the awareness about this way of giving life after death is crucial. From the other hand the need of continues medical education and trained personnel is very important for continuing the program of organ donation after brain death.

Key words: Organ donation, transplantation, gift of life.

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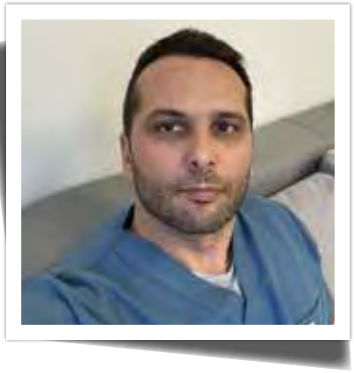
SASHO DOHCHEV (MKD)

Prof. Dr. Sasho Dohchev was born on May 1, 1961 in Skopje. He graduated from the Faculty of Medicine in Skopje in 1999 with an average of 9.00. On November 2, 1989, he got a job at the Urology Clinic at the Clinical Center in Skopje, where he still works. In the course of his career, he has been to several professional stays and congresses in several European centers. In addition to the vast experience in overall pathology in the field of Urology (especially in cancer surgery), he has many years of experience in the field of kidney transplantation. Since 1990, he has been an active member of the kidney transplant team, and since March 2012, he has been the head of the same team and the head of the Department of Kidney Transplantation at the University Clinic of Urology - Skopje. For a period of less than three years (March 2012-June 2015), record results were achieved in this area with a record 99 kidney transplants. He is the current director of the University Clinic for Urology - Skopje. The year 2013 is noteworthy, when according to the number of kidney transplants from a living donor, R. Macedonia ranks 9th in the world (before the USA, Great Britain, Switzerland, Norway, Japan and other highly developed countries), which is the top result of Macedonian healthcare in general. He participated in several domestic and international congresses and symposiums as a presenter and invited lecturer. He is an author of more than 80 scientific papers. In the period from 2002-2006, he was a deputy in the Assembly of the Republic of Macedonia, and he is also a member of three parliamentary committees (Commission on Education, Commission on Human Rights and Freedoms and a member of the parliamentary delegation of the Central European Initiative). From 2002-2006, he was also a member of the health commission at the Assembly of R.M. The winner is on a plaque from the University of St. Kiril and Metodij,, - Skopje, for contribution to its development and affirmation (May 24, 2005) and the "November 13" award, as co-author of the book 'Calculus of the Urinary Tract' (2004).

At the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, Dr. Sasho Dohchev will give a lecture on **"Kidney transplant"**



MARJAN SHOKAROVSKI (MKD)

Ass. dr. Marjan Shokarovski, Director of University Clinic of Cardiosurgery is part of the team of heart transplants performed so far in the country, and he was also involved in innovative surgical heart interventions with a minimally invasive approach. Dr. Shokarovski is a subspecialist in cardiac surgery, with many years of surgical and academic experience in this field, he is the head of the operational blog and is hired as an assistant at the Faculty of Medicine – Skopje.

At the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, Dr. Marjan Shokarovski will give a lecture on **"Heart Transplant".**

BETI TODOROVSKA (MKD)

Prof. Dr. Beti Todorovska is a gastroenterohepatologist working at PHI University Clinic for Gastroenterohepatology, Faculty of Medicine, Ss.Cyril and Methodius University in Skopje Since January 2024, she is Associate Professor of Internal Medicine/Hepato-Gastroenterology, Faculty of Medicine, Ss.Cyril and Methodius University in Skopje while in November 2023 she became a Head of Department of Internal Medicine, Faculty of Medicine, Ss.Cyril and Methodius University in Skopje. In November 2021 she was promoted in Head of Hepatology Department, University Clinic for Gastroenterohepatology while since January 2014 she is working as a Hospital Coordinator of Liver Transplantation, University Clinic for Gastroenterohepatology, Skopje. Her Scientific Field of Expertise is Hepatology (Liver Transplantation, Viral Hepatitis, Cirrhosis, Liver Tumors).

LIVER TRANSPLANTATION - FOLLOW UP OF TRANSPLANTED PATIENT AND POST LIVER TRANSPLANTATION MANAGEMENT

Todorovska B[1], Curakova RE[1], Josifovikj LF[1], Nikolovska TE[1], Stardelova GK[1], Antovikj S[2].
[1]University Clinic for Gastroenterohepatology, Faculty of Medicine, University "Ss. Cyril and Methodius", Skopje, RN Macedonia [2]University Clinic for Digestive Surgery, Faculty of Medicine, University "Ss. Cyril and Methodius", Skopje, RN Macedonia

The outcome of liver transplantation depends on the preoperative factors of the recipient (heart and pulmonary disease, diabetes, renal failure, age), perioperative factors (quality of the donor liver, operative technique, appropriate management by the anesthesiology team), as well as on the development of postoperative complications (vascular, biliary, immune complications, infections and side effects of immunosuppressive drugs). This review will cover the most important segments related to the follow-up of patients after liver transplantation, such as: immunosuppressive therapy (including interactions and compliance); complications after transplantation and their management.

The key drugs for graft maintaining after transplantation are immunosuppresants. The most common regimens include a combination of calcineurin inhibitors, corticosteroids and antimetabolites. Monotherapy with calcineurin inhibitors will continue after stable liver function is achieved, with the aim of reducing side effects (toxicity, infections and the appearance of malignant diseases). The most common complications related to surgical techniques are hepatic artery thrombosis and portal vein thrombosis, as well as complications related to biliary anastomosis (stenosis or leakage). Vascular complications should be detected early through regular ultrasound examinations with Doppler, CT angiography or portography. The absence of treatment that includes revascularization with thrombectomy, placement of a stent, application of anticoagulant therapy or possibly reoperation with the creation of a new anastomosis will cause graft failure and the need for retransplantation. An enormous challenge in posttransplant period is to detect the reasons for increased liver function tests (LFTs). The following scenarios can play a role: graft rejection (acute or chronic), hepatic artery stenosis, drug toxicity, biliary complications or cholangitis, disease recurrence, bacterial or viral hepatitis, non-alcoholic fatty liver disease, metabolic syndrome, etc. This requires a detailed investigation with laboratory tests, virological analyses, imaging procedures, including MRCP or ERCP, liver biopsy, etc. An early diagnosis of existing complications and appropriate management will enable graft functionality and patient survival.

Key words: liver transplantation, immunosuppressive therapy, complications.

ALEKSANDAR TRAJANOVSKI (MKD)

Medical director of TOARILUC.
2006 Graduate on Medical faculty Skopje Rep of North Macedonia; 2012 Become a Specialist Orthopedic surgeon; 2013 He finished one month education in Acibadem hospital in Istanbul Turkey (knee and shoulder arthroscopy); 2015 He finished one month education in University clinic in Ljubljana Slovenia department for Orthopedic surgery (knee and hip Prosthesis); 2018 He finished with success course in Institute for Orthopedic surgery Banjica in Belgrade Serbia (basic principles of implementation TPK); 2019 Become subspecialist of Traumatology; 2020 He became head of the University Clinic for trauma, orthopedic surgery, anesthesia, reanimation and intensive Care and urgent center TOARILUC Mother Theresa-Skopje; 2021 He finished with success Instructional Course "10 Basic Principles in Primary TKA"; 2021 He defended his doctoral thesis “Comparative analysis of application of two surgical approaches during implantation of total hip endoprostheses”; 2021 He was the leader of the team that performed the first explanation of bone tissue from a deceased donor; 2021 He was the leader of the team that performed the first transplantation of bone tissue from a deceased donor to live patient; 2021 He started working as an Assistant in faculty of medical sciences “Kiril and Metodi”-Skopje; 2022 He was a part of the team that preformed the first transplantation on anterior cruciate ligament from deceased donor to patient with knee instability; 2022 He finished curses for digital and robotic solution in Knee prosthesis by Smith and Nephew in Larissa Greece; 2023 He started working as a Docent in faculty of medical sciences “Goce Delcev”-Stip; 2023 He performed the first knee operation whit robotic assistant in North Macedonian health care system in history; 2023 He finished with success the Zimmer Biomet course for advancing TKA personalization through implants, digital and robotic solution; 2023 He finished with success the Basic Principles for the complex primary TKA, in LKH Murtal Hospital in Stolzalpe, Austria.

BONE TRANSPLANT

Background: The human skeleton has a remarkable ability to regenerate itself after injury. Unfortunately, conditions for spontaneous bone healing are not always ideal, besides the efficacy of modern internal fixation techniques. For this purpose, nowadays when we have such cases of nonunion fractures, the surgeon often opts for a bone transplant.

Materials and Methods: This review will discuss the allogenic transplantation from a cadaver, to patients, with nonunion fractures, of the femur, tibia and ulna, with various comorbidities such as Ewing sarcoma, angiosarcoma, high blood pressure, and diabetes. Patients underwent allogeneic cadaver bone graft transplantation, with reconstructing the defect with an allograft and fixating it appropriately.
Conclusion: Treatment with bone graft transplantation was successful in all treated patients, returning the normal function of the limb.

Keywords: nonunion fractures, allograft, allogenic transplantation, Ewing sarcoma, angiosarcoma.

BILJANA ANDONOVSKA (MKD)

Biljana Andonovska MD, PhD is born in Bitola, where she completed primary and secondary education. In the academic year 1998/99, she was enrolled at the Faculty of Medicine and graduated in 2004. She was employed at the Clinic for Anesthesia, Reanimation, and Intensive Care in 2006, and in the same year, she started specializing in Anesthesia with Intensive Care. In the academic year 2011, she completed her specialization. In 2021, she was selected as an assistant at the Faculty of Medicine, and in the same year, she defended her doctoral thesis.
For the past 10 years, she has been working as a specialist anesthesiologist in an intensive care unit. In 2018, she was included in the program of organ donation and transplantation as a hospital coordinator; in 2022 she was nominated for Deputy National Transplant Coordinator.

BRAIN DEAD DONOR TRANSPLANTATION

Andonovska Biljana, Mojsova Mijovska Maja, Trajkovska Vanja, Andonovski Alan, Muminovic Amela - TOARILUC

ABSTRACT

Organ donation and transplantation remain the best and most cost-effective clinical solution for end-stage organ failure. Organ donation and transplantation rates widely differ between countries. This rate being highest rates in Spain with 47 organ donations per million people. Reasons for this international variation are not well defined. It's well known that there's a worldwide shortage of organ donors. More than 100,000 organ transplants have taken place around the world every year since 2008 but this is way below what's needed. Countries in Europe and in the world provide legislative, regulatory, and humanitarian services to generate smoother applications in all transplantation processes and donor-recipient relationships. Religion, underrepresented minority groups, difficulties in obtaining consent, lack of understanding, and general ethical concerns present challenging barriers to organ donation. Breaking down these barriers to reduce the organ-supply imbalance requires an appropriate multifaceted approach. Suitable policies and standardized guidelines for both donors and recipients, alongside educational initiatives, full transparency in organ donation are needed to ensure patient safety and global awareness. Looking forward, novel and effective research plans and initiatives are needed if we are to avoid a colossal supply-demand gap.

Key words: Organ donation, organ donor, organ transplant, organ shortage.

СЕСИЈА 6 / SESSION 6

EDOARDO DE ROBERTIS (ITA)

Edoardo De Robertis is Full Professor in Anaesthesiology and Intensive Care at the University of Perugia where he coordinates the Division of Anaesthesia, Analgesia, and Intensive Care. Director of the Clinical University Department of Anaesthesia and Intensive Care. Director of the Residency Program and School in Anaesthesia, Intensive Care and Pain. President of the European Society of Anaesthesia and Intensive Care (ESAIC) for the two years term 2022-23.

Prof. Edoardo De Robertis graduated with honor in Medicine and Surgery at the University of Napoli Federico II, where he completed his anaesthesiology residency. At the University of Lund, Sweden he received the Ph.D. Leader of a research group at the University Federico II and more recently at the University of Perugia, Prof. De Robertis has been involved in the planning, management and coordination of experimental studies in complex animal models and clinical studies on mechanical ventilation. An innovative system of ventilation aimed at the reduction of airway dead space (ASPIDS) was developed.

Prof. De Robertis has been actively involved in numerous collaboration and research projects with European partners and in the drafting of guidelines of the European Society of Anesthesiology (ESA/IC). He coordinated for Italy the ESA multicentric study PROVHILO and the ESICM consensus study WELPICUS. He is involved in several financed European research projects.

Prof. De Robertis has focused his research activity in intensive care medicine with particular attention to mechanical ventilation in critically ill patients and management of massive bleeding. He is also interested in obstetric anaesthesia and pelvic robotic surgery.

Invited lecture at national and international meeting and congresses: more than 200 Scopus 3.2024: papers 196; H-index 28; citations 5467 Scientific Societies

2003-2006 Secretary-Treasurer of the Italian Society of Anaesthesia, Analgesia and Intensive Care.

2004-2021 member of the Anaesthesia Section/Board of the UEMS (EBA_UEMS). Chair of the EBA Working Party on Medical Emergency. 2005-2012 member of the Multi Disciplinary Joint Commission in Emergency Medicine.

Past President of the European Board of Anesthesiology (EBA_UEMS)

Past_Chairperson of the ESA Guidelines Commission.

Immediate Past-President of the European Society of Anaesthesia and Intensive Care (ESAIC).

At the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, Dr. Edoardo de Robertis will give a lecture on **"Future of Critical Care between artificial intelligence, augmented reality and passion"** and **"Sustainability in Anesthesia and Intensive Care".**

JASMINKA PERSEC (CRO)

Affiliation: Associate Professor Jasminka Peršec MD PhD - Head of the Clinical Department for Anesthesiology, Resuscitation and Intensive Care Medicine, University Hospital Dubrava, Zagreb, Croatia - President of the Croatian Society of Intensive Care Medicine.
Biography: Associate Professor at the University of Zagreb and University of North, Varaždin, Croatia. Head of the Chair of Anesthesiology and Resuscitation, School of Dental Medicine, University of Zagreb. Head of the Clinical Department for Anesthesiology, Resuscitation and Intensive Care Medicine, University Hospital Dubrava. President of the Croatian Society of Intensive Care Medicine. National coordinator for the Specialist Training Program in Anesthesiology, Resuscitation and Intensive Care Medicine appointed in the Croatian Ministry of Health. Currently, she published 42 original articles indexed in Current Contents, numerous papers indexed in WoSS, Medline and Scopus (Embase) databases. Author of chapters in 4 university textbooks and 3 expert books in the field of anesthesiology and intensive medicine, and chief editor of 2 university textbooks. Principal organizer and member of the Organizing Committee at several national and international conferences, invited speaker at international and domestic conferences and postgraduate courses. Member of the Editorial board in three journals, and reviewer in several international journals.

ARTIFICIAL INTELLIGENCE FOR HEMODYNAMIC OPTIMIZATION OF PATIENTS IN ANESTHESIA AND ICU

Jasminka Peršec[1,2]
[1]Clinical Department for Anesthesiology, Reanimatology and Intensive Care Medicine, University Hospital Dubrava, Zagreb, Croatia; [2]University of Zagreb, Croatia

Key words: intraoperative hypotension, hemodynamic monitoring, hypotension prediction index, goal-directed hemodynamic therapy

Introduction: Intraoperative hypotension and liberal fluid hemodynamic therapy are associated with postoperative medical and surgical complications during anesthesia in major surgery and high risk patients. Among 20 million major surgical procedures performed in Europe each year, 1-4% of these patients die and up to 15% have serious postoperative morbidity caused by adverse events that could have been prevented in more than one third of cases.[1] One of the causes of increased perioperative morbidity and mortality is intraoperative hypotension (IOH), considering its significant association with adverse events such as myocardial infarction, perioperative acute kidney injury and stroke due to inadequate perfusion.[2] IOH is surprisingly common and, depending on the definition, has an incidence range of 5 to 99%.[3] It is treated with intravenous fluids and vasopressors/inotropes. The problem with intravenous fluid administration in risk patients and major reconstructive surgery with free flaps is high risk of developing oedema due to lack of lymphatic drainage, denervation and poor reabsorption of excess interstitial fluid.
Materials and Methods: A recent randomized controlled trial reported that preventing intraoperative hypotension reduces the risk of postoperative organ dysfunction by about a quarter. It is possible that the ability to recognize when a patient is likely to become hypotensive, as well as the pathophysiology of these events, may help the anesthesiologist act accordingly and hopefully improve patient outcomes. Goal-directed hemodynamic therapy (GDHT) is a term that describes a potentially effective method for determining optimal doses of intravenous fluids, inotropes and vasopressors using a clinical algorithm to optimize cardiac output and oxygen delivery to tissues, preventing hypoperfusion. It implies the use of more or less invasive methods of hemodynamic monitoring. The primary reason for using this therapy and monitoring is that it can improve perioperative outcomes in terms of survival and quality of life, as shown by recent meta-analyses and studies analysing long-term complications.[4]

Results: The Hypotension Prediction Index (HPI) is a novel hemodynamic monitoring tool that predicts episodes of intraoperative hypotension before they occur. HPI is based on machine learning analysis of database containing various arterial pressure trace waveforms extracted from previous monitored cases which preceded occurrence of hypotension (mean arterial pressure, MAP < 65 mmHg) and it is presented as a non-dimensional number between 1-100 (%) which correlates with probability of occurrence of hypotension within minutes. Use of HPI compared to conventional arterial waveform analysis is linked to reduction of incidence and duration of hypotension when compared to arterial waveform analysis alone.[8] HPI values ≥80 will activate the alarm which will urge the anesthesiologist to review the clinical decision tree screen with hemodynamic parameters. Optimization of preload is guided by stroke volume variation (SVV) parameter (depending on whether its value is higher or lower than 13%), afterload according to dynamic arterial elastance (Eadyn) parameter (depending on whether its value is higher or lower than 0.9) and myocardial contractility by dP/dtmax parameter (depending on whether its value is higher or lower than 400 mmHg/s). When certain values of these parameters are observed, goal directed therapeutic intervention by predetermined protocol will take place (intravenous volume expansion, vasopressors or inotropes). In addition to that, monitoring of tissue perfusion using NIRS sensor will objectively derive value of perfusion and provide rapid information if StO2 will drop upon clinicans can intervene. HPI-based hemodynamic protocols are able to reduce the duration and depth of hypotension and has shown its accuracy in clinical trials. Retrospective study of Grundmann et al. on patients who underwent major abdominal, gynecological or urological procedures showed that patients in whom HPI was used had fewer hypotensive episodes and their duration was shorter than patients who were hemodynamically monitored with the help of the FloTrac sensor. Patients in both groups received GDHT.[9] Investigation of Davies et al. on 255 patients undergoing major surgery (major abdominal, vascular and cardiac surgery without extracorporeal blood flow) showed that the HPI had the highest accuracy in predicting hypotension compared to all other measured hemodynamic parameters such as MAP, cardiac ejection fraction, stroke volume, SVV, pulse pressure, pulse pressure variation (PPV) and systemic vascular resistance (SVR).10 A randomized prospective study by Schneck et al. of 100 patients who underwent total hip arthroplasty showed fewer episodes of hypotension, a shorter duration of hypotension when they were monitored and intervened using HPI.11 This monitoring was also investigated on patients undergoing thoracic surgery comparing hemodynamic therapy guided by machine learning algorithm HPI or conventional pulse contour analysis. Patients whose hemodynamic optimization was guided by HPI had significantly lower area below the hypotensive threshold (AUT) and time-weighted AUT (TWA) with less patients with hypotensive events and cumulative duration of hypotension.[12] Rationale behind such decisions is not only avoidance of hypotension, but also minimization of unnecessary therapeutic interventions (excess fluid or catecholamine administration—i.e., overtreatment).

Conclusion: Given the significant association between hypotension and postoperative complications and adverse outcomes, it seems likely that the damage can be mitigated by timely and appropriate anesthesiologist intervention to reduce the occurrence and duration of intraoperative hypotension in patients undergoing major surgical procedures. Use of machine learning algorithm that can predict hypotension improves values of tissue perfusion and seems to be a helpful and promising tool in perioperative optimization.

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TUGHAN UTKU (TUR)

Dr. Tughan Utku is born and raised in Istanbul, Turkey.
From 1992 to 1996, Dr. Utku pursued his residency in Anaesthesiology and Reanimation at the Cerrahpaşa Medical Faculty Hospital, Istanbul University. During this period, he demonstrated exceptional dedication to his training and developed a strong foundation in critical care medicine. Following his residency,served in the Agrı Military Hospital from 1997 to 1998 as part of his military service, further honing his skills in anaesthesiology and reanimation. In 1998, joined the Anaesthesiology and Reanimation Department at Cerrahpaşa Medical Faculty Hospital, Istanbul University, as a Consultant of Anaesthesiology and Intensive Care. Over the next fourteen years, he made significant contributions to the department, earning recognition for his clinical expertise and commitment to patient care. In 2012, was appointed as an Associate Professor in the Anaesthesiology and Reanimation Department at Cerrahpaşa Medical Faculty Hospital, Istanbul University. During his tenure, he continued to excel in his academic pursuits while providing mentorship to medical students and residents. In 2018 joined the Anaesthesiology and Reanimation Department at Yeditepe University School of Medicine Speciality Hospital as an Associate Professor, where he continues to contribute his expertise to the field of intensive care medicine. Dr.Utku is actively involved in several professional organizations, including the European Society of Parenteral Enteral Nutrition (ESPEN), the European Society of Intensive Care Medicine (ESICM), the European Society of Anaesthesiology (ESA), the Turkish Society of Anaesthesiology and Reanimation (TARD), the Turkish Society of Intensive Care (TYBD), the Society of Clinical Enteral and Parenteral Nutrition (KEPAN), the Turkish Society of Resuscitation, and the Turkish Society of Thorax. His memberships reflect his commitment to staying abreast of the latest developments in his field and collaborating with colleagues from around the world.

HOW DID THE PERCEPTION OF DEATH CHANGE WITH THE CONSTRUCTION OF INTENSIVE CARE UNITS?

In modern societies, unlike traditional tendencies, there has been a break with the reality of "death", and after the "medicalization" of death and all related issues, healthcare professionals have turned into warriors fighting against death. There is a return from the fact that humans are mortal creatures to a healthcare system that is considered a failure as a result of death. The medicalization of death has created a situation in which people do not want to keep their dying relatives in sight and, if possible, ensure that they are in a secluded environment. Although it is a fact that the majority of people want to die peacefully at home, it is also a fact that more than 70% of deaths occur in hospitals and most of them in intensive care units.

It is seen that death has turned into a pornographic taboo that is othered especially for the elderly and is not wanted to be talked about. According to Foucault, with "The Birth of the Clinic", doctors have bio-power and in Classical reigns "lethal" or "vital" power is mentioned, while in Modern reigns the power become in the form of "reviving" or "leaving to die".

With the establishment of intensive care and technological developments, the dilemma of "keeping alive" or "delaying death" with organ system support, even for "hopeless" patients, has become increasingly prevalent in our daily lives. Among the goals of intensive care treatment; helping patients regain their health, reducing disabilities, and supporting the dying process with compassion. Issues such as using modern intensive care facilities to deserving patients and paying attention to ethical codes while using them are the most important areas of discussion in intensive care medicine.

SLAVICA KVOLIK (CRO)

Prof. Slavica Kvolik, MD. PhD. Specialist in anesthesiology, resuscitation, and critical care, with postgraduate education in the field of clinical pharmacology in Zagreb, Croatia. My Ph.D. thesis was “Effects of inhalation anesthetics on human cell lines in vitro.” Currently, I work as a chair of the Anesthesiology department at the Medical Faculty at Osijek University and in the Osijek University Hospital, Croatia, as a consultant in the perioperative ICU dealing with neurosurgical, abdominal, and trauma patients. I’m responsible for undergraduate and post-graduate students' and residents’ education. My field of interest is surgical intensive care, brain trauma, and infection. I’m currently involved in the EU-funded research project on G-infections and MALDI-TOF Mass Spectrometry for pathogen detection. I’m an active member of the European Society of Intensive Medicine (ESICM) as a Clinical Trials Committee member, engaged in educational activities, like bronchoscopy workshop, examiner at the European Diploma in Intensive Care (EDIC II), and in the ESICM-supported COSMOGI project, aimed to define the final core outcome set for monitoring of daily gastrointestinal dysfunction in the ICU patients. I’m actively participating in the work of the Croatian Society of Anesthesiology, resuscitation, and Intensive Care and as a reviewer for several journals in the field of anesthesiology and intensive care.

DISCHARGE OF THE PATIENT WITH POLYTRAUMA FROM ICU

The treatment of a polytraumatized patient in the ICU is complex and multidisciplinary. In addition to treating severe injuries, maintaining the airway, implementing quality analgesia, and preventing infections are particularly important in these patients. Although damage control surgery must be performed urgently, the necessary elective procedures should be anticipated during the ICU treatment, and the patient prepared for them. An individual approach to this treatment is essential because it must, in addition to the importance of trauma to individual organ systems, also take into account the patient's previous comorbidities.

During their treatment in the ICU, especially in patients with acute brain injury or severe lung injuries, mechanical ventilation is often required. Weaning the patient from the ventilator with stable breathing is one of the discharge criteria. The recovery of the state of consciousness should be to the level that allows the patient to breathe spontaneously and is able to maintain his airway. If it is estimated that this will not happen, the airway should be secured with a tracheostomy and alternative ways of respiratory support should be established. Other important factors include bleeding control and recognized and corrected laboratory abnormalities. Clinical markers of stable circulation, i.e., blood pressure, pulse, temperature, and diuresis, should be controlled. Risk factors that may contribute to rebleeding or thromboembolic incidents must be recognized, and thromboprophylaxis appropriate. Adequate nutrition that can be continued on the ward should be started. It is important to confirm how well the patient tolerates it.

All these measures should result from multidisciplinary consultation between intensivists and specialists of all surgical disciplines involved in the treatment of an individual polytraumatized patient.

СЕСИЈА 7 / SESSION 7

JANNICKE MELLIN OLSEN (NOR)

Dr. Jannicke Mellin-Olsen stands at the forefront of global healthcare as a passionate advocate for patient safety and a leading figure in the field of anaesthesiology. As the immediate past president of the World Federation of Societies of Anaesthesiologists (WFSA), represented anaesthesiologists across 150 countries, leveraging her position to advance crucial initiatives in collaboration with the World Health Organisation (WHO). Her tenure was characterized by a relentless commitment to improving patient safety standards worldwide. Dr. Mellin-Olsen's influence extends beyond the confines of the WFSA. As a member of the Board of Directors of the Patient Safety Movement Foundation, she played a pivotal role in shaping strategies to enhance patient safety practices globally. Her leadership was instrumental in the development and launch of the Helsinki Declaration on Patient Safet in Anaesthesiology, a seminal document that has set new benchmarks for safety protocols in the field. A driving force behind the dissemination and implementation of the Helsinki Declaration, Dr. Mellin-Olsen has tirelessly advocated for its adoption, recognizing its potential to save countless lives and mitigate risks in anaesthesiology practice. Her efforts have earned her widespread recognition and acclaim within the medical community. Prior to her esteemed role with the WFSA, Dr. Mellin-Olsen served as the president of the European Board of Anaesthesiologists, where she continued her crusade for patient safety and professional excellence. Her tenure saw significant advancements in education and training standards, ensuring that anaesthesiologists around the world are equipped with the necessary skills and knowledge to deliver optimal care.

Dr. Mellin-Olsen's commitment to patient safety transcends organizational boundaries. As the secretary of the European Society of Anesthesiology, she played a pivotal role in shaping policy initiatives and advocating for reforms that prioritize patient well-being. Currently practicing at Baerum Hospital in Oslo, Norway, Dr. Mellin-Olsen continues to make invaluable contributions to the field of anaesthesiology. In September 2021, her exemplary service was honored by the King of Norway, who appointed her as Knight 1st Class of the Order of St. Olav, the highest civilian honor in the country. This prestigious recognition is a testament to Dr. Mellin-Olsen's enduring legacy and her profound impact on healthcare worldwide.

SAFE MEDICATIONS SAFE ANAESTHESIA

It has been estimated that 5% of all patients who are admitted to a hospital experience a medication error. But to experience an error, the medication must be available. Globally, including in Europe, there is a varying and increasing shortage of medicines, including anaesthetics. Some examples of medicines that have been in shortage during the latter years, are bupivacaine, ketamine, thiopental, acetyl salicylic acid and saline. The hospitals will then try to find replacement medicines, and ever-changing packages represent a risk for errors.

Another major problem is counterfeit medicines – “what is in the vial”? About 10 percent of medical products circulating in low- and middle-income countries are substandard or falsified , but the problem is valid in high-income countries, as well. In other cases, the research leading to introduction of new medicines is substandard, like in the GVK Hyderabad case that led to the withdrawal of 1250 European medicines. In 2015, the European Union introduced the Falsified Medicines Directive.

In the operating theatre, there are ample opportunities for medication errors. Nanji & al. found that 1 in 20 perioperative administrations and every second operation resulted in a medical error or/and an adverse drug event.
Everybody should check "the five rights" (right patient, medicine, route, dose, time), but in addition, the organisations must introduce failsafe systems.

The Helsinki Declaration on Patient Safety in Anaesthesiology also addresses medication safety, as does the European Board of Anaesthesiology recommendations for safe medication practice. Syringes should be labelled. Pre-filled syringes and colour coding is advisable.

Finally, potential international scheduling of medicines causes threats to anaesthesia safety, like for ketamine.

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OLE JOHN NIELSEN (NOR)

Currently works at the Department of Chemistry, University of Copenhagen, as Professor in atmospheric chemistry. He is teaching air pollution and health, environmental chemistry, atmospheric chemistry and climate change impacts adaptation and mitigation (CCIAM).
Sir. Prof. Nielsen was previously the head of the atmospheric chemistry department at Risø National Laboratory from 1990 until 1997. Between April 1995 and August 1996, he worked at Ford Research Center Aachen (Germany) as leader of atmospheric science.
Along more than 40 years of experience, Nielsen has always been interested in atmospheric chemistry with focus on laboratory investigations. His focus remains environmental impact of alternative CFCs, alternative fuels and more climate friendly chemical compounds. Moreover, he has had an on-going collaboration with Ford Motor Company since 1987 on alternative fuels, prevention of particle/soot formation and general atmospheric chemistry

He has 275 Peer-reviewed publications, 17 book chapters, 27 reports, 114 popular writings and interviews, +6000 citations and an H-index of 46. He has supervised 30 PhD students and gives approximately 20 presentations per year.

One career highlight is certainly his work for the IPCC (Intergovernmental Panel for Climate Change) and being a member of the team that received the 2007 Nobel Peace Prize. He also received the Henry Ford Technology Award in 1996.

Ole John Nielsen has been member of the Royal Danish Academy of Sciences and Letters since 2008

DO WE UNDERSTAND OUR OWN PERSONAL IMPACT ON CLIMATE CHANGE?

Ole John Nielsen
Department of Chemistry
University of Copenhagen, Copenhagen, Denmark

We have a challenge for this and future generations – climate change will not go away. Numbers for energy use and greenhouse gas emission are hard to understand. This lecture offers a solution to this problem. In addition, I will try to answer questions like: Can we electrify? What kind of car should you drive? What kind of food should you eat? What are the challenges? Moreover, at the end a couple of words about volatile anesthetics.

СЕСИЈА 8 / SESSION 8

MARKUS HUPPERTZ (GER)

Dr.med. M. Huppertz-Thyssen MHBA, DESAIC. Deputy Medical Director of St. Augustinus Hospital, Dueren, Germany since 2020. Director of Anaesthesia, Intensive Care, Emergency Medicine and Pain Therapy since 2017. Coordinating Director of the Anesthesia and Intensive Care Departments of JG group, Cologne, Germany since 2019. Diplomate of ESAIC and Examiner for EDAIC since 2022/23. Master - Degree (Thesis, MHBA) in Ecomics and Management 2016. Doctor- Degree (Thesis, Dr.med.) 2010. Deputy Director of Intensive Care & Pain Therapy, Klinikum Vest, Germany 2016-2017. Senior Specialist at University Clinic Muenster, Germany 2015. Deputy Director of Anaesthesia and Intensive Care, St. Marien- Hospital Dueren 2004- 2014. Specialist Degrees in Anaesthesia, Intensive Care, Emergency Medicine, Palliative Care, subspecializations in Antibiotic Therapy, Hospital Hygiene, Transfusion Medicine, Ultrasound in Anaesthesia.

ANTIBIOTIC STEWARDSHIP IN THE ICU: WHY? WHAT TO DO, WHAT TO AVOID?

Introduction: Increasing antibiotic resistance is an important issue in the ICU. Extended-Drug-Resistant. Bacteria with carbapenemases are a growing problem [(1)]. Pan- Drug- Resistant- Bacteria with resistance against any antibiotic emerge [(2)]. There`s a correlation between antibiotic overuse and resistance. The lecture focusses on on the available evidence for antibiotic therapy in the ICU, based on ABS principles like optimizing pharmacokinetics, narrowing, shortening and deescalating therapies.

Material and Methods: Review of literature

Conclusions: Responsible, educated use of antibiotics is crucial in the ICU. ABS strategies like mandatory guidelines, restriction and approval, mandatory education and qualification before using reserve antibiotics, pathogen & resistance surveillance etc. should be established to “preserve the miracle of antibiotics” [(3)] and reduce side effects and mortality[(4)]

- Don`t use antibiotics as antipyretics
- Implement a five- day- bundle[(4,5)]
- Re- evaluate empiric therapy after 48-72 hrs.[(4,5)]
- No prolonged perioperative prophylaxis
- No antibiotic prophylaxis for drains/ catheters
- Shorten therapy courses[(6)]
- Deescalate treatment[(7)]
- Therapy control by PCT reduces side effects and mortality[(8)]
- Penicillin- derivatives whenever possible
- Time-dependent Beta- Lactam effect, use prolonged infusions[(9,10)]
- Individualized dosing - TDM in selected patients
- Antibiotic Stewardship programs are safe[(11)]

All general considerations about the implementation of an ABS program are also true onthe ICU.
Nevertheless, ideally such programs should be implemented in a broader approach for the whole hospital[(12,13)]

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VISNJA IVANCAN (CRO)

Was born in Zagreb 1956. year. Study medicine from 1975. -1980. on Medical Faculty University of Zagreb. Was working in a general practice for a seven years after graduation and than started my education for to be anesthesiologist and intensive medicine doctor. From 1997. - 2022. was head of Departement of anesthesiology and intensive care medicine for cardiac surgery patients on Clinic for anesthesiology, reanimatology and intensive medicine University hospital Rebro-Zagreb, Than move to University hospital Split where had the same position. In 2021. I become a proffesor on Medical faculty Zagreb.

During my anesthesiology practice I teach a lot of young doctors and nurses and share with them my experience. Also did a lot of humanitarian trips around the world like member of the team ICHF and ICHFNO (China, Peru, Venezuela, Honduras, Belorus, Ukraine, Macedonia, Dominikana Republic). From 2017.

I am President of Croatien Society of anesthesiology, reanimatology and intensive medicine.

SEDATION IN ICU

Patients in the Intensive care unit are treated with many interventions that are observed or perceived to be distressing. Consequently sedatives and analgesic are the most commonly administered drug sin the ICU.

Early intensive care practice evolved from intraoperative anesthetic care at a time when mechanical ventilation was delivered by rudimentary machines that were not capable of synchronising with patients respiratory efforts. As aresult, deep sedation was commonly used until a patient was able to breath without assistance. Developements over the past 30 years, including microprocessor-controled ventilators and a new shorter-acting sedative and analgesic medications, have dramatically changed this approach.

Dexmedetomidine may also have advantages over benzodiazepines: it produces analgesia and causes less respiratory depression. Seemingly provides a qualitatively different type of sedation in which patients are more interactive and so potentially better able to communicate their needs.

Volatile anesthetics were shown to protect the heart both in vitro and in vivo when applied shortly before a period of prolonged coronary artery occlusion (precondition and postcondition). The beneficial effects of volatile anesthetic on ischemia reperfusion and other types of ijuries have been shown in experimental and clinical studies assessing other organs such as lung, liver, bowel, kidney and brain.

Randomized, controlled trials consistently supports the use of the minimum possible level of sedation. In a landmark trial that compared routine daily interruption of sedative infusions with discretionary interruption by treating clinicians, patients whose sedation was routinely interrupted received less sedation overall and spent fewer days undergoing mechanical ventilation and fewer days in the ICU.

IVAN PALIBRK (SRB)

Professor of anesthesiology with resuscitation at the department of surgery with anesthesiology. Faculty of Medicine, University of Belgrade.
Head of Department for anaesthesia and Intensive Care Unit . Clinic for Digestive Surgery University Clinical Center of Serbia.

NUTRITION OF THE CRITICALLY iLL

Who is a critically ill patient? This is a patient who requires constant monitoring of vital parameters and support for certain life functions. Nutrition has long been just a support for patient therapy. It itself has become a therapy that evidently affects the outcome of the disease. The type of diet, its composition, components, have indications, contraindications for use, the dose of certain macro and micronutrients is known. The moment of inclusion, the duration of the therapy, the interval of administration are known exactly.. In a way, nutrition has all the components as well as the application of some other therapeutic measures, such as the application of antibiotics, vasopressors. Now, the diet is prescribed according to the patient, the stage of the disease, the type of disease,... it is "tailored" individually. All of this leads to a significant impact of nutrition on morbidity, mortality, quality of life, length of illness, and finally to a positive economic effect. Thus, nutrition has become a necessary part of the therapy of a critically ill patient. The questions are when to start nutritional therapy? Which way of nutrition to use? What is the energy requirement of a critically ill patient? What amount of protein does such a critically ill patient need? When and should a nutritional goal be reached?

A critically ill person should be fed. It is not necessary to start with reaching the nutritional goal from the beginning. The reason for this is strong catabolism, which is at the beginning of a critical illness. Then, the positive effect of starvation on the body's defenses, i.e. macrophage function.Whenever it is possible to use the enteral route of nutrition, only if it is impossible to use parenteral nutrition. Achieving the nutritional goal should be intensified from the fifth day of critical illness. Otherwise, it is not recommended to reach 100 percent of the nutritional goal, but only 75%. from energy at rest. Indirect calorimetry is used to calculate energy needs, thus avoiding excessive energy intake as well as insufficient energy intake. Both are harmful.

Feeding the critically ill is essential. Energy requirements are determined using indirect calorimetry.

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HULYA BASAR (TUR)

Prof Dr Hülya Başar - She graduated from Ankara University Faculty of Medicine in 1989. He completed his Anesthesiology and Reanimation specialization at Ankara University Ibni Sina Hospital. He became an associate professor in '003 and a professor in 2017. He currently works as the head of Anesthesiology and Reanimation clinic at SBU Ankara Training and Research Hospital. Her major of interest is intensive care.

LUNG PROTECTIVE VENTILATION IN ICU

Mechanical ventilation is one of the cornerstones of treatment in patients with respiratory distress, especially ARDS. But it has long been known that mechanical ventilation itself damages the lungs. These damages are, for example, barotrauma, volutrauma and biotrauma.

VILI is a condition caused or aggravated by mechanical ventilation. During mechanical ventilation, both the patient and the normal lung are damaged. Protective ventilation means protecting the lungs as much as possible from all these effects. In the 1990s, the concept of Permissive Hypercapnia highlighted the rationale for limiting the intensity of mechanical ventilation and inspired the design of the ARDS Network ARMA study. In this study, approximately 800 patients were divided into two groups. The first group was ventilated with a TV of 6 ml/cmH2O and a plateau pressure of at least 30 minutes. In the second group, tidal volume was determined as 12 with conventional application. This study was finished early because the mortality difference was revealed. This study revealed low TV and ppl.
It is now clear that both static (tidal volume, PEEP, plateau pressure, transpulmonary drive pressure) and dynamic parameters (respiratory rate, inspiratory and expiratory airflow) play a role in the pathophysiology of ventilator-induced lung injury (VILI).

Trans-pulmonary pressure can be used to assess the force applied to the lung during mechanical ventilation. The concept of lung 'stress and strain' followed. Driving pressure (ΔP = plateau pressure - PEEP) has been shown to be a stronger predictor of mortality risk than inspiratory pressure or VT.

Driving pressure is the difference between Plato pressure and PEEP.The best available experimental and clinical evidence suggests that driving pressure is more important than plateau pressure, " but both should be considered". P-SILI is a new concept. This concept is known as self-induced lung damage. No clinical studies to date have confirmed its relevand. The concept of P-SILI is a dynamic situation that needs to be broken.

As a result, it is necessary to apply personalized lung protection strategies for each patient receiving mechanical ventilation.

HRISTO BOZOV (BUL)

Prof. Dr. Hristo Bozov, MD graduated in medicine and health management at Medical University - Varna. Specialist in "Anesthesiology and Intensive care" and "Military toxicology". He worked as a military doctor in the Bulgarian Navy, incl. on board the Slava"" submarine. He specialized in Naval and Aviation medicine on board the American aircraft carrier "John Stennis" in 1996 and Hyperbaric Oxygenation at the Military Hospital "Queen Astrid" in Belgium in 2003. During the period 2001-2008 he was the Chief of the Naval Hospital in Varna. Since 2018 he has been the manager of the Complex Oncology Center - Burgas. Prof. Bozov has over 250 scientific publications in the field of Anesthesiology and Intensive care, Marine Medicine and Hyperbaric Oxygenation. In 2000, he defended his thesis on the topic "Application of hyperbaric oxygenation in acute intoxications with carbon monoxide". Author of the monographic work "Hyperbaric oxygenation in the complex treatment of diabetic foot ulcers" and of 3 textbooks on Marine and Emergency medicine. Prof. Bozov is Rector of "Prof. Dr. Asen Zlatarov" University - Burgas and Head of the Department of Anesthesiology, Marine and Intensive Care Medicine in Military Medical Academy. Prof. Bozov is a member of the Board of Directors of the Bulgarian Association of Anesthesiology and Intensive Care, vice-chairman of the Bulgarian Association of Aviation, Marine and Space Medicine. Chief editor of the journal "Aviation, Marine and Space Medicine" and member of the editorial board of the "Macedonian journal of Anaesthesiology".

INDICATIONS FOR HBO IN INTENSIVE CARE

Summary

Hyperbaric oxygenation (HBO) is a clinical method of treatment with oxygen under increased pressure. In the treatment of a number of diseases, HBO is an independent healing factor, while in the therapy of others it enters the complex of healing measures. HBO is applied in single and multiplace chambers. From a pharmacological point of view, HBO can be described as a short-term therapy, performed by inhalation and subsequent diffusion of high doses of oxygen, provided systemically through the respiratory tract and blood. It is achieved by breathing by the patient concentrated oxygen at a pressure higher than 1 ATA. Hyperbaric oxygenation achieves its therapeutic effect through four mechanisms: mechanical effects, bacteriostatic effects, hyperoxygenation for the treatment of carbon monoxide and cyanide poisoning and for treatment aimed at recovery from hypoxia. Advantages of Oxygen Under Elevated Pressure (HBO) Treatment over Normal-Pressure Oxygen (NBO) Treatment:

1. HBO compensates for practically any form of oxygen deficiency.
2. HBO increases the oxygen capacity of the blood in diseases associated with hemoglobin loss and inactivation.
3. HBO prolongs the distance of effective oxygen diffusion into tissues.
4. HBOT provides the metabolic needs of the tissues in case of slowing down the volumetric rate of blood flow. In the United States, there is a list of 13 diseases with proven effect from the use of HBOT, in which the treatment is paid by the insurer. In the European Union, countries are working on the consensus of Lille (2016), which is more detailed, but not everywhere treatment is paid for by health funds. These diseases are:

1. Air and gas embolism.
2. Poisoning with carbon monoxide and cyanides.
3. Gas gangrene.
4. Crush syndrome, compartment syndrome and other traumatic ischemic damage.
5. Decompression sickness.
6. Difficult to heal wounds, incl. in diabetic foot.
7. Anemia.
8. Necrotizing soft tissue infections.
9. Refractory osteomyelitis.
10. Radiation tissue damage.
11. Skin transplants.
12. Thermal burns.
13. Concomitant hyperbaric therapy in intracranial abscess.

In most of these diseases, patients are subject to intensive care.

Keywords: Hyperbaric Oxygenation (HBO), Intensive care, Indications, Oxygen

СЕСИЈА 9 / SESSION 9

IVAN VELICKOVIC (USA)

Ivan Velickovic M.D., FASA is Director, Obstetrical Anesthesiology, SUNY Downstate Healthcare Science University, Brooklyn NY. He graduated from Anesthesia residency and Obstetrical Anesthesia Fellowship in Pittsburgh PA, USA. He is board certified anesthesiologist and holds ASA Diagnostic POCUS Certificate. He is ASA Mentor for POCUS. His practice is 100% Obstetric Anesthesiology.

POCUS AND PREECLAMPSIA

POCUS (Point of Care Ultrasound) exam has become an integral part of the daily work of emergency medicine and intensive care physicians in the last 20 years, at least when it comes to medicine in the United States. Regarding the use of POCUS ultrasound in the perioperative period, significant changes have occurred in the last 5 years. There is an increasing trend suggesting that POCUS should become a routine practice for all anesthesiologists. In 2021, the American Society of Anesthesiologists (ASA) started offering an educational course called the "ASA Diagnostic POCUS Certificate Program." This course sets standards for how POCUS exam should be performed. Simultaneously, the American Board of Anesthesiology has included POCUS examination as part of the practical component of the specialty exam (OSCE exam). Every future specialist (board-certified anesthesiologist) is expected to know how to perform PLAX, PSAX, and A4C examinations. Future anesthesia specialists are also expected to be proficient in performing POCUS examinations of the lungs, stomach, as well as the FAST examination. All of these requirements emphasize the need for in-depth discussions on POCUS examinations during professional meetings, symposiums, conferences, and other educational activities.

Studies using POCUS in cases of preeclampsia have revealed the presence of cerebral edema, pulmonary interstitial edema, and cardiac dysfunction.[1] Accurate fluid management and volume assessment are crucial in preventing maternal fatalities in severely pre-eclamptic patients. Ultrasound, being noninvasive and user-friendly, can play a vital role in diagnosing cardiorespiratory issues and making decisions during pregnancy.
The use of point-of-care lung ultrasound proves beneficial in assessing third-trimester pregnant women with pre-eclampsia who exhibit respiratory complaints or signs indicative of pulmonary edema. However, it's essential for obstetrical/anesthesia healthcare professionals to undergo formal training before widely adopting point-of-care lung ultrasound.[2] POCUS parameters can serve as early indicators of fluid status, aiding in precise clinical management of preeclampsia. Notably, there's a correlation between B-line patterns and diastolic dysfunction (elevated E/e' ratio), as well as between LUS score and thoracic fluid content.[3]

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NADA PEJCIC (SRB)

Prim. Dr. Nada Pejčić is a board-certified, fellowship-trained anesthesiologist with a particular interest in regional anesthesia (RA) and pain medicine. She works at Leskovac General Hospital in Serbia (LGH). She is a pioneer in ultrasound-guided regional anesthesia and has introduced and taught many new regional blocks. She took part in the organization of seven Schools of Regional Anesthesia at LGH. Her other interest is POCUS (point-of-care ultrasonography). She is one of the few non-Americans who took the ASA Diagnostic POCUS exam and obtained the ASA Diagnostic POCUS Certificate in March 2023. She is a team member of the Stanford/SOAP/Kybele POCUS course and was a lecturer at seven POCUS courses. She completed an Anesthesia Observership at SUNY Downstate (NY, USA) in 2017 and 2019.
She presented her work at the ESAIC, ASA, NYSSA, SOAP, and ESRA conferences. As an invited lecturer, she has delivered many lectures, been a faculty member at RA and POCUS workshops, and served as a bedside teacher at hospitals in Serbia, Macedonia, Bosnia and Herzegovina, and Croatia. She is an ad-hoc reviewer for several journals in the area of regional anesthesia. She took part in translating the Stanford Obstetric Anesthesia Emergency Manual (2019) into the Serbian language.

ABNORMAL POCUS FINDINGS

Point-of-care ultrasound (POCUS) is an ultrasound examination performed at the patient's bedside. This versatile and relatively inexpensive non-invasive technology helps anesthesiologists achieve perioperative goals. POCUS provides "yes" or "no" answers to goal-oriented questions, including those related to airway, pulmonary, cardiovascular, and abdominal assessment [1].

Extended focused assessment with sonography for trauma (eFAST) is essential in trauma settings. However, it helps clarify postoperative respiratory or hemodynamic instability. Cardiac POCUS helps us exclude serious findings on the heart that can contribute to perioperative complications and allows us to proceed to the planned procedure. It also helps guide postoperative management.
When we start with the cardiac POCUS, we first learn how to assess left ventricle contractility, right ventricle size and contractility, hemodynamics, and to exclude serious valve abnormalities. Valvular assessment is right at the boundary between basic echocardiography, which every resuscitative clinician should know, and advanced echocardiography. The detailed assessments may require extensive additional training to accurately diagnose valvular abnormalities [2].
Eyeballing is the initial tool for valvular assessment that can identify the majority of severe valvular lesions and should prompt further exploration by applying Doppler or color techniques to the image. Color Doppler is the second tool for valvular assessment, typically used to evaluate the jet area, turbulence, and vena contracta. There are three grades of the importance of valve lesions: devastating, important, and incidental. Devastating valve abnormalities are of particular interest because their causes have to be diagnosed and treated early. Important valve lesions are those that complicate the management of any patient with cardio-pulmonary failure. Incidental valve findings can be ignored in acute care [3].

References:

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IGOR FILIPOVSKI (MKD)

EDUCATION: University: "St. Cyril and Methodius", Skopje, Macedonia
◆ Medical Faculty, 1995
◆ Specialisation - 01.10.1997 – 09.10.2001 – Specialist Anesthesiologist-Reanimatologist
WORK EXPERIENCE: Delivering masterclasses in Ultrasound Guided Cryoneurolysis: 2016 – Cryo meeting in Warsaw, Poland; 2017 - Bulgaria, Estonia, Kazakhstan, Poland; 2018 - Lithuania, Croatia, Spain; 2017 – University Hospital in Sofia, Bulgaria; 2018 - University Hospital in Tartu, Estonia, University Hospital Rebro in Zagreb – Croatia, University Hospital in Kaunas and Vilnius -Lithuania, University Hospital in Valencia -Spain; 2019 - University Hospital in Hanoi – Vietnam, University Hospital in Lisbon – Portugal; 2022 - Stadt Hospital Triemli Zürich, Switzerland – project for preoperative cryo ablation for mini thoracotomies; 2022 – University Hospital Poitiers, France – cryo treatment for spasticity.

◆ Founder and president of the International Society for Ultrasound Guided Cryoneurolysis –2022 - present;
◆ Co-Owner and Medical responsible in Copenhagen Cryo Center, 2014 – present Pain treatment with ultrasound guided Cryoneurolysis on peripheral nerves;

PUBLICATIONS: Shawler E, Finneran IV J, Kestenholz R, Filipovski I, Gabriel R. Management of Chronic; Post-Mastectomy Pain Syndrome Through Repeated Ultrasound-Guided Percutaneous; Intercostal Cryoneurolysis. 49th Annual Regional Anesthesiology and Acute Pain Medicine; Meeting. March 2024. San Diego, CA. Abstract ID: 5391.; Ultrasound Guided Cryoneurolysis for Treating CRPS-Case Report.

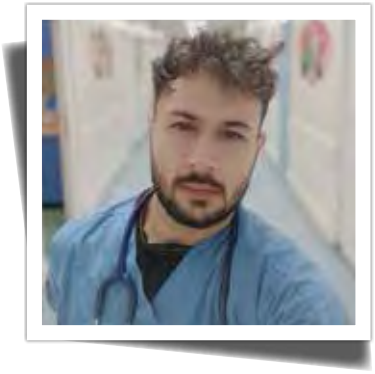
ADVANCING PAIN MANAGEMENT: "ULTRASOUND-GUIDED PERCUTANEOUS CRYONEUROLYSIS FOR THE TREATMENT OF CHRONIC AND ACUTE PAIN", AND PRESENTATION OF THE INTERNATIONAL SOCIETY FOR ULTRASOUND GUIDED CRYONEUROLYSIS

This presentation introduces ultrasound-guided percutaneous cryoneurolysis as an innovative approach for managing chronic, acute pain and treating spasticity. Cryoneurolysis offers a minimally invasive solution by targeting peripheral nerves, disrupting pain signals, and providing long-lasting pain relief.

The technique's precision, guided by real-time ultrasound imaging, enhances efficacy and safety, minimizing potential risks associated with traditional procedures. We delve into the procedure's application in various pain conditions, including neuropathic, musculoskeletal, cancer-related pain and treating spasticity, highlighting its versatility and effectiveness across different patient demographics.

Furthermore, we provide insights into the International Society for Ultrasound Guided Cryoneurolysis, showcasing its role in advancing research, education, and standards in this evolving field.

Join us as we explore the promising potential of ultrasound-guided percutaneous cryoneurolysis in revolutionizing pain management practices worldwide.



FILIP NAUMOVSKI (MKD)

Filip Naumovski is young Specialist in Anesthesiology, Resuscitation and Intensive care Medicine showing a special interest for Intensive Care Medicine, Toracovascular anesthesia and implementing Regional anesthesia techniques as a part of routine patient care. He is passionately dedicated of implementing ultrasonography on a daily basis as a monitoring tool in the Anesthesiologist's hand. He is a PhD candidate in the field of Intensive Care Medicine working on a research project named "Evaluation of right ventricular function in polytraumatized patients with pulmonary contusions with or without mechanical ventilation". Despite the completition of the specialty training in North Macedonia, he has successfully passed few educations about Regional Anesthesia and Point of Care ultrasonography in Turkey.

ECHOCARDIOGRAPHIC INSIGHTS OF WEANING FAILURE: PREDICTION & PERSPECTIVES

University Clinic for Traumatology, Orthopedics, Anesthesiology, Reanimation, Intensive Care and Emergency Department – Skopje

It has been reported that around 20-30% of mechanically ventilated patients will develop a weaning failure. Since, the causes of weaning failure could be diverse a structured ABCDE approach was developed in order to deal successfully with such patient. Cardiac dysfunction as a reason for weaning failure will be discussed in this article as well as the role of point of care echocardiography in detection & treatment guidance. Regarding the process of switching patients from positive pressure ventilation to spontaneous breathing few cardiopulmonary interactions occur with potential of failing especially in patients with cardiac and pulmonary comorbidities.

It is well known that in every patient with cardiac dysfunction the level of SvO2 is expected to be lower than 50%. Systolic disfunction is less frequent cause of weaning failure and could be diagnosed by simple measurement of MAPSE or LV FAC. In contrary diastolic dysfunction is the leading cause for weaning failure from cardiac origin precipitated by the elevating of preload and afterload by the spontaneous respiration. Diastolic disfunction could be easily assessed by measuring the E/A ration using transmitral PW Doppler and measuring e' using septal tissue doppler. Calculation of E/e' ratio produces a value of Left Atrial Pressure (LAP) which could be converted in Pulmonary Capillary Wedge Pressure (PCWP) by using the equitation of Nageh. Measuring a high E wave, low e' wave and a higher E/e' ratio were strongly associated to a diastolic disfunction in a patient difficult to wean.

Performing echocardiography before and during a spontaneous breathing trial should be a mainstay for ruling out the weaning failure risk because of cardiac dysfunction. Higher values for E/e' showing high left ventricular filling pressures in patients who are difficult to wean suggest that diastolic dysfunction lies in the essence of weaning failure.

Keywords: Point of Care Echocardiography; Weaning Failure; Diastolic disfunction.

СЕСИЈА 10 / SESSION 10

BILJANA EFTIMOVA (MKD)

Prof .dr. Biljana Eftimova was born on June 29, 1962 in Shtip. She received his primary and secondary education in her hometown. In 1980, she enrolled atFaculty of Medicine at the University "St. Cyril and Methodius" - Skopje and graduated in1985. Since 1986, she has been working as a trainee in the Department of Emergency Medical Assistance in the Medical Center in Shtip. Specialization in anesthesiology, resuscitation and intensive care ends in 1993. After specialization, until today, she works in The anesthesia, resuscitation and intensive care service in Shtip. She is Head of Anesthesia,Reanimation and ICU at Clinical Hospital Shtip.

ENVIRONMENTAL SUSTAINABILITY IN ANESTHESIA PRACTICE

Prof. D-r Biljana Eftimova, Cilnical hospital-Stip, Dep.of Anesthesia and ICU
Faculty of Medical scienceUniversity Goce Delcev-Stip, R. Macedonia

Climate change is defined as the world's greatest global health challenge of the 21st century , leading to a global call for action in the health community .International organizations such as the Intergovernmental Panel on Climate Change ,call for fundamental and transformative change at every level of our personal and professional lives [2]. Health care pollution itself harms public health4 and can indirectly increase the cost of health care by increasing the demand for services. Global warming affects human life and health in many ways: the essential elements of healthy living – drinking water, nutritious food, clean air are under threat. The healthcare sector significantly contributes to the climate crisis, accounting for over 4% of global CO2 emissions [3, 4]. Furthermore, healthcare practices lead to smog formation, acidification, the release of carcinogenic and non-carcinogenic air toxins, and waste production..The health implications associated with climate change are increasingly widespread. Climate change could undermine the progress made in global health for decades.

As a highly technical, resource-intensive discipline, anesthesia practice accounts for a significant portion of health-care's CO2 emissions [8–10]. With growing calls to address the significant role of anesthesia practice in exacerbating climate change, volatile anesthetics have received increased attention, primarily due to their potent greenhouse gas properties. These volatile anesthetics undergo minimal in vivo metabolism and are released into the troposphere with minimal changes, accounting for over 95% of their emissions [11]. Inhaled anesthetics can account for 50% of perioperative emissions [13] and 5% of hospital emissions [14]. Additionally, 30% of daily medical waste is produced in operating rooms; anesthesia practice is responsible for approximately 25% of it, of which 40% is potentially recyclable [15]. Inhaled anesthetics are an obvious target for mitigation and simple practice changes could reduce emissions.7 Reducing waste by decreasing excess fresh gas flows is one of the simplest ways to reduce pollution and facility costs, without affecting care quality.
In recent years, numerous anesthesiology societies have published recommendations on how anesthesiologists can contribute to a reduction of the CO2 footprint [16–18]. The World Federation of Societies of Anesthesiologists has outlined core principles to guide anesthesia providers in the transition to environmentally sustainable practice, including choosing medications and equipment; minimizing waste and overuse of resources; and addressing environmental sustainability in education, research, quality improvement, and leadership activities .
There is no human health without planetary health.

Key words: Climate change, sustainability, anesthesia practice, pollution.

VANJA TRAJKOVSKA (MKD)

Ass. Prof. Vanja Trajkovska MD. MSc. PhD was born in Stip, where she completed primary and secondary education. In the academic 1995/96 year she was enrolled at the Faculty of Medicine and graduated in 2001.Employed at the Clinic for Anesthesia, Reanimation and Intensive Care in 2006 y, and the same year she started specializing in Anesthesia with Intensive Care. In the course of academic 2011 year she completed her specialization,and in the same year she defended her masters thesis.In 2015 she was selected as an assistant at the Faculty of Medicine.In 2017 she defended her doctoral thesis. In 2019 she was elected as a Assistant Profesor at the Faculty of Medicine.

Vanja Trajkovska has published 46 scientific papers in international journals. For the past 10 years, she has been working as a specialist anesthesiologist in an intensive care unit.

VENTILATOR ASSOCIATED PNEUMONIA. SYMPTOMS, CAUSES AND TREATMENT

University Clinic for Traumatology, Orthopedic Desease, Aanesthesiology, Reanimation and Intensive care and Emergency Department, Skopje, Republic of North Macedonia.

Abstract

Ventilator-associated pneumonia (VAP) is one of the most frequent ICU-acquired infections. Reported incidences vary widely from 5 to 40% depending on the setting and diagnostic criteria. VAP is associated with prolonged duration of mechanical ventilation and ICU stay. The estimated attributable mortality of VAP is around 10%, with higher mortality rates in surgical ICU patients and in patients with mid-range severity scores at admission. Microbiological confirmation of infection is strongly encouraged. Which sampling method to use is still a matter of controversy. Emerging microbiological tools will likely modify our routine approach to diagnosing and treating VAP in the next future. Prevention of VAP is based on minimizing the exposure to mechanical ventilation and encouraging early liberation. Bundles that combine multiple prevention strategies may improve outcomes, but large randomized trials are needed to confirm this. Treatment should be limited to 7 days in the vast majority of the cases. Patients should be reassessed daily to confirm ongoing suspicion of disease, antibiotics should be narrowed as soon as antibiotic susceptibility results are available, and clinicians should consider stopping antibiotics if cultures are negative.

Key words: ventilator associated pneumonia, ICU, antibiotic treatment

ALEKSANDRA PANOVSKA PETRUSHEVA (MKD)

Aleksandra Panovska Petrusheva was born in Shtip. She completed her primary and secondary education in Skopje with continuous excellent success. At the Medical Faculty at the University "St. Cyril and Methodius" in Skopje, she enrolled in the academic year 1994/95 and graduated in September 2000. She has been employed at the University Clinic for Anesthesia, Resuscitation and Intensive Care in Skopje since 2001, where she is actively involved in clinical health and scientific activity. Regular participant in domestic and international congresses, workshops and symposiums. She completed her specialization in anesthesiology and intensive care in 2009 and has been working as a specialist anesthesiologist-intensivist ever since. In the academic year 2004/2005, she enrolled in postgraduate studies at the Faculty of Medicine in Skopje. She has been elected as a teaching assistant at the Department of Anesthesia and Intensive Care at the Faculty of Medicine at the University "St. Cyril and Methodius" in Skopje in May 2008. In June 2012, she defended her master's thesis entitled "Comparative evaluation of sodium turnover in neurosurgical patients" obtaining an academic title Master of Medical Sciences. In the academic year 2012/2013, she enrolled in doctoral studies at the Faculty of Medicine in Skopje. On 02.11.2017, he defended his doctoral thesis under the title: "Evaluation of the electrolyte, acid-base and coagulation status during transurethral resection of the prostate" and acquired the scientific title :doctor of medical sciences-clinical medicine. On 26.12.2019, she was elected as an assistant professor in the field of: anesthesiology, anesthesiology and resuscitation and health care.

EFFICACY OF PREEMPTIVE MULTIMODAL OPIOID-FREE ANALGESIA IN KIDNEY TRANSPLANT RECIPIENTS

University Ss. “Cyril and Methodious”, Medical Faculty Skopje, University Clinic for Anesthesia Reanimation and Intensive Care, Skopje

Abstract

Chronic kidney disease is one of the most common causes of death. Kidney transplantation is the only long-term option for the treatment of end-stage chronic kidney disease, and the rate of this operation is expected to increase in the coming years. Surgery induces tissue injury, pain, and a stress response as a protective mechanism associated with the risk of postoperative organ dysfunction, increased morbidity, and mortality. Despite advances in surgical and anesthetic techniques, pain is still an important problem in patients undergoing kidney transplantation and represents a major challenge for anesthesiologists. Multimodal analgesia is an approach to pain management that involves the use of a combination of different drugs and techniques in order to minimize opioid analgesia. In the context of kidney transplant recipients, where careful use of analgesics is critical due to the challenges of chronic kidney disease, this strategy aims to address the complexity of pain and the risks associated with opioid overuse in this specific group of patients. Moreover, the specificities of this disease highlight the complexity and challenges that anesthesiologists face when applying multimodal anesthesia protocols that could change pain management methods. In addition, recent literature and the ERAS pathway emphasize the efficacy of multimodal analgesia combined with the use and advancement of newer interfascial blocks in patients undergoing renal transplantation. The importance of implementing comprehensive pain management strategies is clear, emphasizing their key role in treatment success and better graft function.

Key words: Preemptive multimodal analgesia, minimal opioid analgesia, regional anesthetic techniques, chronic kidney disease, transplantation.

MARINA TEMELKOVSKA STEFANOVSKA (MKD)

Marina Temelkovska Stevanovska MD, PhD - Doctor specialist in anesthesiology with resuscitation and intensive care. Education: Faculty of Medicine; University "St. Cyril and Methodius" - Skopje, Graduation date: 1995.
Specialization in Anesthesia with Resuscitation and Intensive Care: 2003
Master's thesis defense: 2011; University "St. Cyril and Methodius", Faculty of Medicine, Skopje. Doctoral Dissertation: 2015: University "St. Cyril and Methodius", Faculty of Medicine, Skopje Work experience: December 2023 – today- University Orthopedics Clinic, TOARILUC Clinic, Skopje. August 2022 – December 2023- University Clinic for State Cardiac Surgery, Skopje. June 2020 – August 2022 - GOB September 8th, Skopje. June 2017 – June 2020 - Acibadem Sistina Private Clinical Hospital. August 2013 – June 2017 - Head of Department of Anesthesia at the Department of Traumatology. Mar 2008 – Jun 2017 - Assistant at the Faculty of Medicine in the subject of anesthesiology with resuscitation December 2014 – March 2015 - Work experience as anesthesiologist in "Al Amiri", General Hospital in Kuwait. April 2003 - August 2013 - Doctor specialist in the specialty of anesthesiology with resuscitation and intensive treatment in KARIL. Languages: Macedonian, English, German. Member of: Medical Chamber of Macedonia (LKM), Macedonian Association of Anesthesiologists (MSA), European Society of Anesthesiologists and Intensive Care (ESAIC), Macedonian Medical Association (MLD).

PSYCHOLOGICAL AND SOCIAL INFLUENCE OF IDIOPATHIC SCOLIOSIS ON ADOLESCENTS AND THEIR CAREGIVERS

Introduction: Adolescent idiopathic scoliosis (AIS) is a lateral curvature of the spine greater than 10° in children aged 10-18 years. The deformity may progress severely during adolescent development and if the curve is greater than 45°, operative treatment should be considered. This condition is accompanied by cosmetic deformity and dissatisfaction of adolescents with their own body image, which results in changes in their mental health and lifestyle. In addition, family functioning and the emergence of parental anxiety and depression may be affected after a child is diagnosed with a chronic health condition.

Objective: Recognition of mental health disorders in the patients and their parents in order to take appropriate measures that would improve the outcome of AIS treatment.

Method: A search was performed, using available databases, including PubMed and Google Scholar, to capture relevant research published covering AIS.

Results: Adolescents with scoliosis may show a less positive outlook on life, suffer from lower self-esteem and have difficulty relating to peers. However, there is conflicting evidence whether the different stages of treatment, such as observation, bracing or surgery, affect the long-term psychological effect of scoliosis. Parents' depression and anxiety were closely related to their children's depression and anxiety. Parents face challenges such as acquiring adequate knowledge about scoliosis, participating in decisions about the type of treatment and managing their child undergoing invasive spine surgery.

Conclusion: Psychosocial support is a key component in promoting better outcomes in adolescents as they cope with the challenges associated with idiopathic scoliosis. Providing parents with adequate information and resources on how to support their child can alleviate some of the emotional burden they experience.
Key words: adolescent idiopathic scoliosis, parents, mental health, quality of life.

DARKO SAZDOV (MKD)

Dr. Sazdov Darko was born in Skopje in 1979. He enrolled at the Faculty of Medicine in 1998. Started his studies at the Faculty of Medicine, at the University "St. Cyril and Methodius" in Skopje, in 2005. In 2006, he began his specialist studies in Anesthesia with resuscitation at the Faculty of Medicine in Skopje.He got his first job in the private healthcare institution in general medicine "Neuron", as a general practitioner. He completed his specialist studies in 2010. In 2011, Dr. Sazdov enrolled in doctoral studies at the University "St. Cyril and Methodius" of the study program in Medicine. In 2012, Sazdov received a contract to work at PZU Clinical Hospital Acibadem, Skopje, as a doctor specialist in anesthesiology and intensive care. In 2013 together with prof. Dr. Kartalov and Prof. Dr. Guchev participates in the organization of a workshop on the use of ultrasound for peripheral nerve blocks. In 2016, Sazdov participated in Balkan States Anesthesia Days III with a lecture "Comparative analysis of anatomical versus ultrasound-guided central venous catheterization". In 2020, he completed his doctoral studies at the "Kiril and Metodij University" in Skopje with the defense of his doctoral dissertation entitled "Influence of the application of positive end-expiratory pressure and the Trendelenburg position on the success rate and complications during ultrasound-guided catheterization of the axillary vein in patients on mechanical ventilation ". In 2020, he was promoted to Doctor of Medical Sciences/Clinical Medicine in the field of Anesthesiology with resuscitation. 2021 participates in the professional symposium on "All aspects of the infection COVID-19" organized by the Macedonian Medical Association. 2023 organizes the workshop entitled Application of ultrasound in anesthesia and intensive care, which is held at Acibadem Sistina Clinical Hospital, where he also appears as a lecturer with his lecture Application of ultrasound for central venous catheterization. 2024 completes the training for writing a project organized within the International Balkan University in Skopje.

NONINVASIVE TESTS AND INDICES FOR FLUID RESPONSIVENESS

Acute circulatory failure is a common occurrence in everyday clinical practice. Fluid administration remains a fundamental aspect of treating these patients. International guidelines recommend administering large volumes of fluid to treat sepsis-related acute circulatory failure. The objective is to enhance cardiac output by raising mean systemic pressure, thereby generating the driving force for systemic venous return and preload. However, apart from cases of severe absolute hypovolemia, such as hypovolemic shock, or relative hypovolemia during the initial phase of distributive septic shock, this increase in cardiac output only occurs in around half of the cases before resuscitation. Consequently, a significant portion of patients may not benefit from or could even suffer adverse effects from administered fluid therapy. Numerous studies now suggest that inappropriate fluid therapy and positive fluid balance in patients with sepsis and ARDS are associated with increased morbidity and mortality. Therefore, accurately assessing intravascular volume status in critically ill patients and predicting those who may benefit from volume expansion is crucial. Echocardiography has become the preferred standard of care for hemodynamic monitoring in the intensive care unit (ICU).Static indices of cardiac preload, such as left ventricular end-diastolic dimensions or the E/e' ratio, do not correlate with fluid responsiveness. Conversely, dynamic indices of fluid responsiveness involve measuring changes in stroke volume induced by alterations in cardiac preload. These changes may be spontaneous or provoked and result from heart-lung interactions, passive leg raise, or the infusion of small fluid volumes. While the respiratory variation of the velocity-time integral (VTI) in the left ventricular outflow tract (LVOT) **during** positive pressure ventilation reliably indicates fluid responsiveness, it may not be applicable in all cases. The same limitation applies to respiratory variation in the diameter of the superior or inferior vena cava, which is also the least reliable of fluid responsiveness tests and indices. In contrast, changes in the LVOT VTI during a passive leg raising test are more reliable. The effects of a mini-fluid challenge, consisting of 100–150 mL of fluid, approach the reproducibility limit of echocardiography. Moreover, the effects on the LVOT VTI of successive end-inspiratory and end-expiratory pauses can be utilized in mechanically ventilated patients, provided their respiratory activity allows for brief respiratory occlusions.

Key words: fluid responsiveness, echocardiography, left ventricular outflow tract, passive leg raise, end -inspiratory occlusion test.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ОДГОВОРНА ПРИМЕНА
https://www.hemofarm.com/srb/odgovorna_upotreba_opioida
1.Palexia SR, Збирен извештај за особините на лекот, Мај 2019.

ПЛЕНАРНИ СЕСИИ
КОНГРЕСНА САЛА „ЛАБИНО“

PLENARY SESSIONS
CONGRESS HALL “LABINO”

VII МАКЕДОНСКИ КОНГРЕС ЗА АНЕСТЕЗИОЛОГИЈА, РЕАНИМАЦИЈА И ИНТЕНЗИВНО ЛЕКУВАЊЕ

MACEDONIAN CONGRESS OF ANAESTHESIOLOGY, REANIMATION AND INTENSIVE CARE MEDICINE

Здружение на Лекари по Анестезиологија, Реанимација и Интензивно Лекување

САМУИЛОВА ТВРДИНА

SAMUEL'S FORTRESS

СЕСИЈА 1 / SESSION 1

BILJANA SHIRGOVSKA (MKD)

Biljana Shirgoska was born in 1963 in Skopje. He works as the head of the Department of Anesthesia with Resuscitation at the University Clinic of Otorhinolaryngology in Skopje. He also organizes and manages the anesthesiology service of the University Clinic of Ophthalmology in Skopje. He received his master's degree, specialization and doctorate at the Faculty of Medicine in Skopje, St. Cyril and Methodius University. He teaches at the first, second and third cycle of studies at the same faculty. He is the author of 4 textbooks and 2 manuals on anesthesiology, and he is the co-author of 2 textbooks on anesthesiology and otorhinolaryngology. He is also the co-author of the manuals that come out as aids in the context of continuous medical education in the field of anesthesiology under the auspices of the European Association of Anesthesiologists. Biljana Shirgoska has been a member of the Macedonian Association of Anesthesiologists since 1992. In From 1999-2003, Biljana Shirgoska was the secretary of the association. In 2002, he received a Diploma for contribution and involvement in the work of the Macedonian Medical Association. He has been a member of the Medical Chamber of Macedonia since 1989. She is actively involved in the work of expert commissions and working groups at the chamber. He is the representative of the Macedonian anesthesiologists in the European Association for Difficult Airway (EAMS) since 2006. Actively participates in all activities: symposia, congresses and workshops organized by this association in the region and in Europe. In 2019, he is the course director of the school for continuing education in the field of anesthesiology and intensive care (CEEA). Organized CEEA 2019 in Dojran and CEEA 2020 electronically. He organizes respiratory tract workshops, for the first time in 2005 as part of the 3rd Congress of Macedonian Anesthesiologists, as well as in 2010 at the 4th Congress of Macedonian Anesthesiologists. The workshops on the treatment of severe respiratory tract in 2009 in Skopje, as well as the two Balkan Symposia on the treatment of severe respiratory tract, organized under the auspices of EAMS, follow. In 2014, he organized the 5th congress of Macedonian anesthesiologists with international participation, and in 2015, he organized a respiratory tract workshop as part of ARUD. With his lectures, he actively participates in anesthesiology congresses with international participation in the region, namely: in Nis, Belgrade, Zagreb, Sarajevo and Podgorica. He also actively participates in respiratory tract treatment congresses, organized under the auspices of the European Association for Respiratory Treatment in the cities of: Istanbul, Ankara, Prague and Berlin. He is an educator at the Medical Simulation Center in Macedonia. 2022 receives a plaque for a special contribution to cooperation from the Serbian Association of Anesthesiologists. In 2023, he received a plaque from the Macedonian Medical Society for the development of anesthesiology in Macedonia.

AIRWAY MANAGEMENT AT PEDIATRIC PATIENTS – GUIDELINES AND RECCOMENDATIONS

Biljana Shirgoska, Angelina Trajcevska Jovcevska, Igor Kamshikovski, Marija Dokoska, Marjan Marolov, Filip Kostovski

ABSTRACT

Airway treatment at pediatric patients that have to be inducted in general anesthesia, is essential life threatening condition, such as cardiopulmonary resuscitation. Recently publications indicates a high incidence of critical situations, particularly at neonates and infants. Trying to define the best strategy for airway management at neonates and infants, European Society of Anesthesiology and Intensive Care (ESAIC) and British Journal of Anesthesia (BJA) published guidelines and recommendations, which helps clinicians to provide safe and effective anesthesia care. They identified seven main areas of interest: 1) preoperative airway assessment and preparation; 2) medication; 3) optimal techniques and algorithms; 4) identification and treatment of difficult airways; 5) confirmation of tracheal intubation; 6) tracheal extubation, and 7) the influence of human factors.

They used PICO (Population, Intervention, Comparison, Outcomes) questions and GRADE (Grading of Recommendations, Assessment, Development and Evaluation) methodology for formulation the recommendations as strong '1' or weak '2', as well as recommendation with high 'A', medium 'B' or low 'C' quality of evidence. Their recommendations are: 1. Use the medical history and perform good physical examination to predict the difficult airway (1C). 2. Ensure adequate level of sedation or general anesthesia during airway management (1B). 3. Keep spontaneous breathing and do not administer neuromuscular blocker for tracheal intubation at difficult airway pediatric patients (1C). 4. Use a video laryngoscope with an age-adapted standard blade as the first choice for tracheal intubation (1B). 5. Mandatory apply apneic oxygenation while performing the act of tracheal intubation in neonates and infants (1B). 6. Consider a supraglottic airway device for rescue oxygenation and ventilation, if tracheal intubation fails (1B). 7. Limit the number of tracheal intubation attempts (1C). 8. Use a stylet to reinforce and reshape tracheal tubes if you are using hyper angulated video laryngoscope blades for anatomically anterior larynx position (1C). 9. Verify successful intubation with clinical assessment and capnography (1C). 10. Apply high-flow nasal oxygenation, (or continuous positive airway pressure, or nasal intermittent positive pressure ventilation) as respiratory support, after the extubation (1B).

Keywords: difficult airway management, neonates, infants, general anesthesia, guidelines, recommendations.

TATJANA GORANOVIC (CRO)

Assist. Prof. Tatjana Goranović, M.D., Ph.D.

Specialist in anaesthesiology, resuscitation, and intensive care; subspecialist in intensive care medicine. Employed at the Sveti Duh University Hospital in Zagreb, Croatia. Senior research associate at the Faculty of Medicine, University of Zagreb. Assistant Professor in the Department of Anaesthesiology, Resuscitation, Intensive Medicine and Pain Therapy at the Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek. Teacher to the undergraduate medical and nursing students, postgraduate students and on continuing education courses. Mentor to residents in anaesthesiology, trainee doctors and students. I actively participate in international multicentre clinical research studies and have been invited to lecture on national and international congresses.

I am a member of few national Croatian and European professional associations in anaesthesiology, resuscitation, and intensive care medicine. I am the actual president and secretary of the Croatian Society for Difficult Airway Management of the Croatian Medical Association (CMA-CSDAM).

AIRWAY MANAGEMENT IN HEAD AND NECK PATHOLOGY

Tatjana Goranović[1,2]
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[2]*Faculty of Medicine, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia*

Airway management in head and neck pathology should overcome several potential airway problems. Firstly, distorted airway anatomy due to existing pathology should be preoperatively evaluated. Secondly, the one should be prepared on the risk of loss of airway intra-operatively due to airway obstruction, breathing system disconnection and soiling of the airway due to bleeding and surgical debris. Thirdly, there is always the potential for airway compromise post-operatively.

Good airway management in head and neck pathology starts with careful planning preoperatively. Knowledge of predictive factors and a detailed preoperative evaluation to predict which airway strategies are likely to be successful /to fail. A comprehensive plan should include alternative and hybrid strategies. Preparedness for intra-operative and postoperative airway complications should be sustained. Last but not least, team work and close communication between the anesthesiology and ENT or head and neck surgery team is essential.

RENATA CURIC (CRO)

Prim. Renata Curić Radivojević MD, PhD is consultant anesthesiologist and intensivist in the Department of Anesthesiology, Reanimatology, Intensive Medicine and Pain Therapy at the University Hospital Centre (UHC) Zagreb, Croatia, at the position of medical director for anesthesia, perioperative and intensive care for ENT, head and neck and ophthalmology patients. Renata graduated from the School of Medicine, University of Zagreb. Started training in anesthesiology at UHC Zagreb in 2007, and has a license in anesthesiology since 2011.; Postgraduate degree in "Biomedicine and Health" since 2016. subspecialty in intensive care medicine since 2017.; research associate since 2022, and Primarius since 2023. She received several international scholarships for education abroad. She is also a European instructor for Pediatric Basic and Advanced Life Support (PBLS; EPALS) and lecturer at the graduate and postgraduate study in anesthesiology. Her clinical research presently deals with airway management and patient safety in head and neck surgery, thyroid surgery and pediatric anesthesia. She actively participates in several international studies.

She has been a thesaurus of Croatian society of anesthesiology and intensive care medicine since 2018. and is an active member of several international (ESAIC; SHANA; EAMS; SAMBA) and domestic societies.
Mother and wife rest of the time.

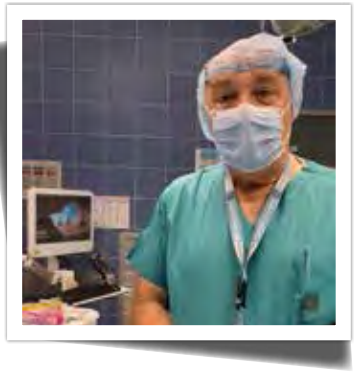
PEDIATRIC TRACHEOSTOMY IN AIRWAY MANAGEMENT, ANESTHESIOLOGY POINT OF VIEW- OUR EXPERIENCE

Pediatric tracheostomy

Renata Curić Radivojević[1] ; Ivana Vukušić; Anita Visković; Igor Balenović; Ratko Prstačić, Slobodan Mihaljević
[1] Consultant anesthesiologist and intensivist at Department of Anesthesiology, Reanimatology, Intensive medicine and Pain Therapy, University Hospital Centre Zagreb, Kišpatićeva 12, 10000 Zagreb, Croatia

Abstract

There is a wide range of basic and advanced techniques and ways of securing pediatric airways nowadays: from invasive to noninvasive, intubating and non-intubation techniques. Growing number of airway devices on the market is a sign that no device is perfect nor one size fits all. Surgical tracheostomy is a life-saving procedure performed for emergent or expectant airway compromise due to upper airway obstruction or to support the need for prolonged ventilation. Although it is generally thought of as safe, morbidity in the pediatric population is higher than in adults due to smaller operating field, immaturity of tissues, anatomical specificities of the child's neck, or presence of craniofacial dysmorphism. In some cases, tracheostomy is also a permanent solution for airway management. According to the literature, indications for tracheostomy in pediatric patients have changed a bit. Retrospective chart review was performed on pediatric patients who had a tracheostomy during the 5-year study period (between 2018 and July 2023) at University Hospital Centre Zagreb (UHC), Croatia. 50 surgical tracheostomies have been done during that period, in pediatric patients (<18 years old). Pediatric candidates for tracheotomy are few and often burdened by their primary diseases, requiring interdisciplinary planning, timing and preparing for the procedure.



PAUL ZILBERMAN (ISR)

Staff anesthesiologist at the Hadassah Medical Center in Jerusalem, Israel, Mount Scopus Campus. He has graduated the medical school in Romania, 35 years ago after what he moved to Israel back in 1995. He has done his Anesthesia residency in Israel. After a one-year fellowship in Canada, Toronto Western Hospital, returned to Israel to continue activity including at the present time. The basic formation of mathematics and physics in the high school helped him to get a better grip on several aspects of our activity as doctors in general and anesthesia in special. He was attracted by Low flow anesthesia due to its simplicity, logic, and wide relationship not only with medicine, but also environment protection and greening the OR, to mention only two of its important aspects. Started as a personal passion, the continuous study of the LFA brought him to present his initial ppt. from 2010, with different modifications in several countries around the world. The laryngeal mask airway came across my way not only as a novelty but as a lifesaving device.

A few years ago, he saw the LMA Gastro (Teleflex) and his unchained thinking made the direct connection between this device and the bariatric airway management. He used it in the first five world bariatric surgeries known at that time. The same permanent curiosity brought him to space medicine. A vast field demanding tremendous financial resources but opening a large horizon for reading and investigating. The adaptation of the human physiology “both ways” and the medical implications for earth medicine and deep space travel attracted him like a “positive black hole”. All along the way he had the opportunity to meet great names in space explorations, deliver several basic presentations and last, but not least, be the medical mentor of a group of very talented school children, with big dreams!

THE LARYNGEAL MASK GASTRO IN ANESTHESIA FOR BARIATRIC SURGERY

This type of surgery is done traditionally with tracheal intubation.
The obese patient is considered high risk airway due to anatomical concerns.

Silent aspiration and the theoretical ventilation difficulty are two concerns for which many anesthesiologists hesitate or refuse to use supraglottic airway devices even in non-bariatric surgeries.
While these concerns are legitimate, more recent literature seems to challenge these this concept.

Obstetric and gynecological surgeries are a specific group that make the use of supra glottic devices problematic. The frequent head down position with abdominal contents pressing the diaphragm poses special ventilating problems that are better avoided by endotracheal intubation.

The airway management in anesthesia for bariatric surgeries appears to be less problematic than thought before. Unless gastro esophageal reflux is clearly documented there seems to be no further risk of aspiration. The head up position in these surgeries facilitates even more the ventilation since, despite the pneumoperitoneum, the diaphragm is not subject to the supplementary pressure of the abdominal contents.

The article describes the first world use of the Laryngeal Mask Airway Gastro (Teleflex) in the airway management for bariatric surgeries from the beginning till the end.

ANTIGONA HASANI (KOS)

Prof. dr. Antigona Hasani, MD, is a distinguished figure in the field of anaesthesiology, currently serving as Professor and Head of the Department of Anaesthesiology, Reanimation, and Emergent Medicine at the Faculty of Medicine, University of Prishtina, Kosovo's capital. Her expertise is widely recognized, evidenced by her significant contributions to peer-reviewed scientific papers and books covering anaesthesia, reanimation, and pain medicine. Dr. Hasani's involvement in six multicenter studies conducted by esteemed organizations such as the European Society of Anaesthesia (ESA) and the European Society of Critical Care Medicine (ESCIM) underscores her commitment to advancing medical knowledge.

As an esteemed member of various state, national, and international organizations and societies, including the European Society of Anaesthesia and the European Resuscitation Council, Dr. Hasani actively contributes to the global anaesthesia community. In 2008, she founded the Society for Anaesthesiology and Intensive Care of Kosovo (SAICK), demonstrating her dedication to improving healthcare standards in her region. Dr. Hasani's leadership extends further with the establishment of the Kosova Airway Management Society in 2018, followed by the Kosovo Resuscitation Society in 2019 and the Kosovar Society of Intensive Care and Perioperative Medicine in 2023.

Dr. Hasani's diverse clinical and research interests encompass a wide range of areas, including neuroanaesthesia, pediatric anaesthesia, airway management, cardiopulmonary resuscitation, trauma life support, and the management of critically ill patients. Through her comprehensive expertise and leadership, Dr. Hasani continues to make significant strides in advancing medical practice and improving patient care in Kosovo and beyond.

SAFE EXTUBATION AFTER THE ‘SHARED AIRWAY’ SURGERIES

Airway surgery is a teamwork activity that requires close cooperation and trust between the anesthetist and the surgeon. The best example is shared airway the situation where the anesthetist maintains the airway and ventilation of the patient, while the surgeon performs the surgery in the same confined anatomic space.

The term ’share’ means that original owner grants to another the partial use, or possession of a thing; and in this contest, the ‘thing’ is the patient’s airway.

There are common pathologies with shared airway and most common situations are foreign body removal, tonsillectomy, dental procedures or tracheotomy opening.

Planing and preparing creates conditions to succsesful extubation, the ABCDE approach to extubation shows the essential considerations when preparing for extubation at the end of surgery.

We must be sure that the airway is patent and patient is able to protect the airway, take in consideration if we had the difficult intibation or other complications expecially if we deal with airway surgery, which mean shared airway.
Our message is: have a good plane and be prepared; avoid hypoxia; prevent, recognise and treat anatomical and functional airway obstruction; establish locally accepted simple algorithms, and teach and train.

СЕСИЈА 2 / SESSION 2

DUSICA SIMIC (SRB)

Prof. dr. Dusica Simic is widely recognized for her leadership and expertise in the field of pediatric anaesthesia and intensive care. Currently serving as the Head of the Department of Pediatric Anaesthesia and Intensive Care at the prestigious University Children's Hospital, she plays a pivotal role in shaping the standards of pediatric care.

In addition to her clinical responsibilities, Simic holds the esteemed position of President of UDAIS (Union of Doctors of Anaesthesiology and Intensive Care of Serbia), where she advocates for excellence and innovation in medical practice. Simic's influence extends beyond national borders, as she actively contributes to the European medical community. She is a valued member of the ESPA (European Society for Pediatric Anaesthesia) board and holds a distinguished position as an ACORNS (Advisory Committee of Representatives of National Societies) member, where she collaborates with experts from across Europe to advance pediatric anaesthesia practices. Furthermore, Simic serves as a board member of SAAI (Society of Anaesthesiologists and Intensivists of Serbia), where she contributes to the development of professional standards and guidelines. Her contributions to the field have been recognized on a global scale, as she holds membership in the Academy of Medical Sciences, a testament to her dedication and expertise in pediatric anaesthesia and intensive care. Through her leadership and commitment to excellence, Simic continues to make significant contributions to the advancement of pediatric healthcare both nationally and internationally.

DO WE NEED NEURO-MUSCULAR RELAXANTS FOR INTUBATION OF A PEDIATRIC PATIENT?

Dušica Simić [1] Ivana Budić [3,4] , Miodrag Milenović [2,5] , Marija Stević [1,2] , Ivana Petrov Bojičić [1,2]
[1] University children's clinic, Belgrade,
[2] Faculty of Medicine, University of Belgrade
[3] Clinical Center Nish,
[4] Faculty of Medicine, University of Nish
[5] Emergancy Center KC Srbija

Neuromuscular relaxants were a real discovery of the twentieth century and greatly facilitated intubation and administration of general anesthesia. As it usually happens, we soon became aware of their side effects. When it comes to pediatric patients, the use of relaxants began to be reconsidered when we became aware of the percentage of residual paralysis after their application, which can be very dangerous, especially in this age group. It has also become questionable how to overcome the problem of using relaxants in extremely short-term surgical interventions where their effect may exceed the duration of the operation. Frequent allergic reactions that can develop in anaphylaxis are also a problem.

Intubation of a pediatric patient without neuromuscular relaxation is certainly possible. However, in order to perform it, it is necessary to increase the anesthesia to a level that has serious consequences. If, on the other hand, intubation is attempted without relaxation and in superficial anesthesia, the consequences can be even more dangerous.

In the lecture, the results of the latest studies dealing with this problem were highlighted. We hope that these points will help pediatric anesthesiologists in making a decision - whether to use neuro-muscular relaxants before intubating pediatric patients.

MARIJANA KARISIK (MNE)

Assist. prof. Marijana Karisik MD; Faculty of Medicine, University of Montenegro; Clinical center of Montenegro, Institute for children Disease, Department of Anesthesia and Intensive care;
President of Montenegrin Society of Anesthesuiology and Intensive Care;

I am committed to development of my knowledge and skills needed for anesthesia in neonatal and pediatric patients, and gaining expertise in area of airway management for pediatric population. I was improving my skils in Pediatric anesthesia at University hospitals in Zurich and Graz and in "Great Ormond Street Hospital" in London. Author and co-author in 200 publications in national and international scientific meetings and journals. University of Montenegro Faculty of Medicine, Podgorica, 2021- today; Montenegrin Society of Anesthesiology and Intensive Care, one of founder and President, Podgorica, 2019- today; Clinical Center of Montenegro; Institute for Children Disease, Department of Anesthesia and Intensive Care Podgorica, 2019 – today; University Hospital " Mater Dei", Malta; Department of Anesthesia, Reanimation and Intensive Care Malta, 2017-2019; Clinical Center of Montenegro Institute for Children Disease, Head of Department of Anesthesia and Intensive Care Units; Podgorica, 2012 – 2017 Clinical Center of Montenegro; Institute for Children Disease; Podgorica, 2008 – 2010 Anesthesiologist; Podgorica, 2010 – 2012 Pediatric Anesthesiologist; 2022 - today Board member of Balkan Anesthesia Platform; 2020 - today (two mandates) Council member of ESAIC; 2013 - today TAT (trein of airway teachers) of EAMS.

PEDIATRIC AIRWAY MANAGEMENT

Abstract

Securing an airway is undoubtedly the most important lifesaving skill and knowledge any prehospital and hospital emergency medical service provider owns and vital task for the anesthetists. Anesthetized children, especially toddlers and neonates, have a high risk of critical airway incidents. Delayed management of compromised pediatric airway still causes significant perioperative morbidity and mortality.

Reviewing data shows us that the real progress in the management of pediatric airway, and changes in pediatric anetshesia altogether, started in the first decade of the 21st century (EXIT procedure, fiberoptic and videolaryngoscopy intubation as a gold standard) then, over the following years, the guidelines were, at first, a modification of adult based approaches, and only later on were the guidelines made specially for pediatric patients, then, the neuromuscular blocker was added to the guidelines, the ultrasound and apneic oxygenation started being used in airway management and now the ECMO is incorporated in airway management guidelines in pediatric patients.

Framework to guide in practicing safe and secure control of the pediatric airway could be good knowledge of anatomical and physiological pediatric airway specificity, good airway assessment, planning, minimum standard of equipment, accepted difficult airway algorithms combine with personnel dedicated teaching, training and practice. Ultimately and always the primary goal is to provide child’s oxygenation and ventilation.

LJUBICA MICUNOVIC DEREBANOV (MKD)

Dr. Ljubica Mile Micunovic Derebanova was born on February 18, 1986 in Ohrid. In 2010, she finished School of Medicine in Skopje, R. North Macedonia with high grade. She started her residency in anesthesia with resuscitation and intensive care in 2011 and in November 2016 she passed the specialist exam and became specialist in Anesthesia and Intensive Care. Since December 2013, she has been employed at the University Clinic for Anesthesia, Resuscitation and Intensive Care – Skopje. Dr. Ljubica Mikjunovikj Derebanova started her PhD studies in 2014. In 2022, she defended her thesis under the title "Comparative effects of epinephrine and dexamethasone as adjuvants in peripheral nerve blocks of the upper limb in pediatric patients" and she became Doctor of Medical Sciences. In 2021 she started her subspecialization in Pediatric Anesthesiology and in 2023, she became a subspecialist in Pediatric Anesthesiology. World Federation of Societies of Anesthesiologists (WFSA) granted her a three months' fellowship in University pediatric hospital Tirshova in Belgrade in 2018. Dr. Ljubica Mikjunovikj Derebanova attended to many "hands on" workshops for regional anesthesia and on the 31st cadaver workshop in Innsbruck and also on many congresses as a participant and as a lecturer. She is author on 42 publications.

PEDIATRIC TRANSFUSION: WHAT IS NEW?

Mikjunovikj Derebanova Ljubica[1], Donev Ljupcho[1],, Llesji Albert[1],, Demjanski Vasko[1],, Lozanovska Biljana[2],
[1]University Clinic for Traumatology, Orthopedic diseases, Anesthesia, Reanimation, Intensive care and Emergency Center – Skopje, R. North Macedonia [2] Clinical hospital Acibadem Skopje, R. North Macedonia, Department of anesthesia and intensive care medicine

Most blood components in our country rely on volunteer blood donors, so they need to be wisely used. When we make a decision to transfuse children, we must consider the potential risks and benefits of blood products before transfusion. There are many medical conditions that require transfusion, including acute blood lost, iatrogenic blood lost, hemoglobinopathy, hematologic and nonhematologic malignancies and stem cell transplant. Due to limited amount of evidence – based literature, a significant number of pediatric transfusion practices, particularly for non-red blood cell products, are based on guidelines from adult population. But, there are important differences that are unique for children, especially preterm newborns and infants.

In recent years, clinical trials focused on pediatric transfusion are more frequent. Generally, is considered that restrictive red blood cells transfusion thresholds (< 70g/L) are safe for stabile, critically ill patient. Resent studies of platelet transfusion thresholds in preterm neonates have shown that restrictive prophylactic thresholds as low as 25 x 109/L are safe and have lower risk for bleeding than liberal thresholds greater then 50 x 109/L. Major bleeding, such as intraventricular hemorrhage, in the early neonatal period seem does not depend on the severity of thrombocytopenia. Prolonged prothrombin time, thrombin time and/or activated partial time in absence of bleeding is not indication for neonatal fresh frozen plasma (FFP) transfusion. In massive transfusion, protocol of fixed ratio of red blood cells, plasma and platelets (1:1:1) is used and this ratio should be based on volume (ml) rather than units. Studies showed that 74% of patients transfused with red cell component and 42% of FFP transfusion might be avoidable. Rational use of blood products is essential.

Keywords: pediatric transfusion, red blood cells, plasma, platelets, guidelines.

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СЕСИЈА 3 / SESSION 3

VOJISLAVA NESKOVIC (SRB)

Prof. dr sc. med Vojislava Nešković, boasts a distinguished career in anaesthesiology, marked by decades of notable achievements. Born in 1966 in Vranje, she obtained her medical degree from the Faculty of Medicine in Belgrade in 1990, graduating with an exceptional average grade of 9.61. Dr. Nešković continued her academic journey by completing postgraduate studies in cardiology at the same institution in 1997, showcasing her commitment to advancing knowledge in the field. In 1998, she attained the esteemed European Diploma in Anaesthesiology and Intensive Care, earning recognition as a Diplomate of the European Academy of Anaesthesiology (DEAA). Further enhancing her expertise, Dr. Nešković underwent specialized training in cardiothoracic anaesthesia at Glenfield Hospital in Leicester, United Kingdom, enriching her clinical acumen through six months of intensive practice.

Throughout her career, she held pivotal roles at renowned institutions such as the Clinical Center of Serbia and the Institute for Cardiovascular Diseases, contributing her expertise to various departments and serving as Head of the Department of Anaesthesia and Intensive Care. Dr. Nešković is deeply committed to education, having served as an Assistant and later as an Instructor in Anaesthesiology at esteemed institutions including the Faculty of Medicine in Belgrade and Novi Sad. Additionally, she has made significant contributions to the academic literature, authoring numerous articles and chapters in both domestic and international journals. Fluent in English and Italian, her global perspective enriches her contributions to the field of anaesthesiology, solidifying her position as a respected authority in the field.

At the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, Dr. Voislava Neskovic will give a lecture on **"Prehabilitation in thoracic surgery: Is it feasible"**

YAVUZ GURKAN (TUR)

I was born in Istanbul in 1968. I graduated Marmara University School of Medicine in Istanbul, 1992. Following my graduation, I had training in Anatomy department of Marmara University. I did my anesthesiology residency in-between 1995-2000 years at Kocaeli University Hospital, Kocaeli, Turkey. Starting from my residency until 2019 I worked as academic person at Kocaeli University Hospital where I had the degree of Prof. of Anesthesiology and Reanimation. Since 2019 I have been working as Prof of Anesthesiology and Reanimation at Koç University Hospital in Istanbul. My main research and clinical interest areas have been airway management, acute pain management and regional anesthesia. My work focused on mainly peripheral nerve blocks and currently on interfascial plane blocks. I have many publications mainly about regional anesthesia and book chapters that have been cited many times. I have lectured all over the world about regional anesthesia. I am involved in organizing and conducting many national and international congresses and workshops. I have been a board member of ESRA and Turkish Society of Anesthesia and Reanimation. I have chaired Turkish Regional Anesthesia Society. I am in the editorial board of Turkish Journal of Anesthesiology and Reanimation.

THORACIC WALL BLOCKS

Effective postoperative analgesia is crucial for managing severe pain after thoracotomy. Inadequate pain management can hinder recovery, increase the incidence of pulmonary complications and dyspnea due to inadequate secretory excretion, and even result in post-thoracotomy pain syndrome that may persist for years. Regional anesthesia tech-niques are preferred over intravenous opioids due to their ability to provide more effective analgesia and fewer side effects. Traditionally, thoracic epidural, thoracic paravertebral, and intercostal blocks have been used for thoracic surgery. In recent years, ultrasound-guided fascial plane blocks have also been utilized. Local anesthetic is administered between two fasciae, allowing it to spread to the nerves and tissues between them. TPVB (Thoracal Paravertebral Block), ESPB (Erector Spinae Plane Block), PECS Blocks, Rhomboid Blocks, Parasternal Blocks are commonly used in thoracic surgery [1, 2]. This article elaborates the anatomy of the nerves that provide innervation of the thoracic wall as well as the well-known ultrasound guided techniques for blocking them using Paravertebral block, Erector Spinae Plane Block, Rhomboid Intercostal block, Parasternal blocks, Transversus thoracic block, Pectoral blocks and Serratus Plain blocks. The intercostal nerves T1-T11 provide sensory innervation to the thoracic wall. Each spinal nerve arises from the intervertebral foramen, divides into a ventral and dorsal ramus, and travels along the vertebral column. The ventral ramus passes first between the endothoracic fascia and the pleura, then between the internal and deep intercostal muscles under the associated rib, and caudally into the intercostal space with blood vessels. At the level of the midaxillary line, the ventral ramus pierces the external and internal intercostal muscles and the serratus anterior muscle (SAM) with its lateral cutaneous branches and is responsible for the sensory innervation of the anterolateral chest wall. In addition, its anterior branch innervates the breast with lateral mammary branches in women. Most ultrasound-guided peripheral blocks are fascial plane blocks. The main principle is to spread high volumes of local anesthetics (20-30 ml for adults and 0.2-0.4 ml/kg for children) to the nerves and adjacent tissues between the fascial plane since the nerves are too small to be visualized and targeted. The distribution may differ between individuals.

Conclusion

Many new ultrasound-guided block techniques have been reported for analgesia in thoracic surgery. However, more clinical studies are needed before these techniques can become an option for regional analgesia. Fascial plane blocks have shown successful results in clinical trials. Thoracic wall blocks have been compared with traditionally used paravertebral blocks. Fascial plane blocks are considered as part of multimodal analgesia.

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MARIJA SRCEVA (MKD)

Prof. Dr. Marija Jovanovski Srceva is a specialist in Anesthesiology and Intensive Care and currently working as a Professor at University Clinic for Anesthesia, Reanimation and Intensive Care. She finished her specialty training back in 2008, became a Master of Medicine in 2013 and a PhD in 2018. Currently she is working as a Chef of Vascular Anesthesiology. She underwent few educations in the field of Transplantation, Donation of organs, Bleeding management, Thoraco Vascular and Cardiac anesthesia in Serbia, Croatia, Austria, Greece, Japan and Austria. She is working as an active reviewer of plenty of Journals in the field of Medicine for many publishing houses such as MJA, Dove Press, Elsevier, ID Press ect. In her scientific career her fields of interest in research are insulin resistance, metabolism, coagulation and homeostasis. She is the author of more than 70 articles and a few books.

VASCULAR INCOHERENCE DURING VASCULAR SURGERY AND ICU AND ITS EFFECT ON HEMOSTASIS AND COAGULATION

Microcirculation disorders that develop during an episode or period of systemic hypoperfusion may be irreversible and be accompanied by adverse outcomes, regardless of the restoration of normal or supranormal values of systemic hemodynamic parameters (Ince, 2015). Once a substantial amount of cell necrosis has occurred, organ function recovery is not always possible, even when adequate VO2 is restored.
Identification of preoperative factors that have an impact on organ dysfunction and mortality after surgical correction for which purpose it is important to consider the concept of hemodynamic coherence. Hemodynamic coherence between the macrocirculation and the microcirculation is the condition in which resuscitation procedures aimed at the correction of systemic hemodynamics variables are effective in correcting regional and microcirculatory perfusion and oxygen delivery to the parenchymal cells such that the cells can perform their functional activities in support of organ function.

For hemodynamic coherence to be effective, resuscitation based on the administration of fluids and blood, in combination with administered vasoactive compounds, must result in the effective delivery of oxygen-carrying blood in proportion to the various organ beds in a manner that matches oxygen supply to the heterogeneous oxygen demand of the various organs and their parenchymal cells. For hemodynamic coherence to be effective, the compensatory mechanisms, including hormonal, neural, biochemical and vascular regulatory control systems, must be intact and able to sense and regulate oxygen transport to the various tissues. However, states of shock, reperfusion, inflammation, and infections can damage the cellular sensing mechanisms needed to regulate blood flow.

The primary macrocirculatory parameters during resuscitation focus on global DO2, blood flow, and perfusion pressure targets, with the aim of restoring tissue perfusion. The microcirculatory parameters focus on capillary refill time (CRT), peripheral perfusion index (PI), tissue oxygen saturation, peripheral temperature, skin mottling, transcutaneous partial pressure of oxygen, transcutaneous oxygen challenge test, and sublingual microcirculatory parameters (microvascular flow index, proportion of perfused vessels, and density of perfused vessels). Cellular oxygen metabolism is identified using both lactate and central venous-arterial carbon dioxide difference/arterial-central venous oxygen difference (P(v-a)CO2/C(a-v)O2) ratio.

VASIL PAPESTIEV (MKD)

Dr. Vasil Papestiev is born and raised in Skopje. He embarked on his academic journey at the Faculty of Medicine in Skopje. Driven by a profound interest in cardiac surgery, Dr. Papestiev pursued specialized training in this challenging field, determined to master the intricacies of heart surgery and offer hope to patients grappling with cardiovascular diseases. In 2014, Dr. Papestiev's journey brought him to the esteemed University Clinic for State Cardiac Surgery in Skopje, where he assumed a pivotal role as a cardiac surgeon. Notably, Dr. Papestiev played a pivotal role in a groundbreaking milestone for cardiac surgery in the Republic of North Macedonia. As a key member of the surgical team, he contributed his expertise to the historic first heart transplant operation conducted in the country. This landmark achievement not only underscored Dr. Papestiev's surgical prowess but also symbolized a significant leap forward in the nation's healthcare landscape, offering hope and renewed possibilities to patients in need of life-saving interventions.

Today, Dr. Vasil Papestiev continues to serve as a beacon of excellence and innovation in the field of cardiac surgery, steadfast in his commitment to advancing medical science, saving lives, and leaving an indelible mark on the landscape of healthcare in the Republic of North Macedonia and beyond. With each surgery he performs and each life he touches, he reaffirms his status as a true guardian of the human heart, embodying the highest ideals of the medical profession.

EXTRACORPOREAL MEMBRANE OXYGENATION FOR CRITICALLY ILL PATIENTS; STILL A LIFESAVING TECHNOLOGY

Abstract

Extra Corporeal Membrane Oxygenation (ECMO) indications and usage has strikingly progressed over the last 20 years. It has become essential tool that provides benefit in certain populations of adults, including those with severe cardiac failure, severe respiratory failure, and cardiac arrest . Recently, several large randomized controlled trials (RCTs) have been published. Therefore, we will provide a review of clinical indications, patients' management, options and cannulations techniques, complications, outcomes, and the appropriate strategy of organ management while on ECMO.

DARKO ANGJUSHEV (MKD)

Ass. Dr. Darko Angjushev specialist in anesthesiology reanimation and intensive care since 2009 and subspecialist in pediatric anesthesiology since 2023. Working in UC TOARICEC Clinical center "Mother Theressa" in Skopje since 2006. Completed master studies in clinical medicine – anesthesiology in 2014. Currently he is finishing his doctoral dissertation in the field of anesthesiology treatment for thoracic surgery. Working as an assistant professor in the Department of anesthesiology and intensive care on the Medical faculty Skopje within the University of "Ss Cyril and Methodius" in Skopje. Performing practical and theoretical educational work with Medical faculty students. Is actively included as educator and mentor in specialization studies of anesthesiology and intensive care. Continuously doing scientific researches and has published numerous studies in homeland and international scientific papers. Living in Skopje, married and father of 3 children.

ONE LUNG VENTILATION: COMPLICATIONS AND PROBLEM-SOLVING SOLUTIONS

Ass. Dr. Darko Angjushev[1]
[1.] *University Clinic of Traumatology, Orthopedic diseases, Anesthesia and Intensive care and Emergency center in Skopje, Medical faculty University of "St Cyril and Methodius" Skopje, R. of Macedonia*

Abstract
One lung ventilation (OLV) involves selective ventilation of one of the patient's lungs. When one lung is ventilated and both lungs are perfused transpulmonary shunting can be expected. Hypoxemia during OLV is commonly defined as an arterial oxygen saturation <90% despite an inspired oxygen concentration (FIO2) of 1.0.(1) Several factors can help in predicting hypoxemia during OLV: right thoracotomy, lung function abnormalities, distribution of perfusion, position of the tumor. However, none of these factors alone can accurately predict intraoperative hypoxemia.(2) Hypoxic pulmonary vasoconstriction (HPV) is the most important compensatory reflex in reducing the shunt, with the aim to divert the blood flow away from the non-ventilated parts of the lung. Various factors (anesthetic agent, acid/base imbalance, vasodilators, temperature, age) can alter the success of the HPV. Also, the extensity of the surgical trauma will lead to the production of vasoactive mediators and oppose HPV.(3) The key point in minimizing the risk of acute lung injury in thoracic surgery is applying protective ventilatory strategy. (3) Current clinical practice guidelines for protective mechanical ventilation during OLV suggest the use of small tidal volumes (≤6 mL/kg ideal body weight), while the reduction of FiO2 is crucial to prevent the damaging and toxic effects of oxygen. Successful recruitment of the lung after induction and after the start of the OLV should be mandatory. Pressure-controlled mode is preferable to volume-controlled ventilation. The use of positive end expiratory pressure (PEEP) to keep the lung open, seems to be clearly superior to a zero PEEP strategy. In severe hypoxemia the application of CPAP on the non-ventilated lung is useful tool, but still unavailable in most places. An interesting recommendation of the guideline refers to the use of non-intubated video assisted thoracoscopy (NIVATS) for lobectomy, as alternative in high-risk patients.(4)

Key words: one lung ventilation, complications, hypoxemia, protective ventilatory strategy.

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СЕСИЈА 4 / SESSION 4

IDIT MATOT (ISR)

Prof. Matot is the Director of the Division of Surgery and Chair of the Department of Anesthesiology, Intensive Care and Pain at the Tel Aviv Medical Center, Israel. Prof Matot is the Immediate Past Chair of the Scientific Committee of the European Society of Anesthesiology and Intensive Care (ESAIC) (2019-2024) and in 2022 she received the Honorary member award of the ESAIC. Prof Matot was also the President of the Israeli Society of Anesthesiologists (ISA), representative for the ISA at the NASC and member of the nomination committee of the ESAIC. Prof Matot was a member of the Research Committee and Transfusion Committee of the ESAIC, chair of the Geriatric anesthesia Committee of the ESAIC. Her research interests include both experimental research related to the liver (perfusion, hemodynamics, effects of blood transfusion, the regeneration process), and clinical outcome research in the perioperative period. Dr Matot received her M.D at the Hebrew University, Jerusalem, Israel. Following medical school she spent 3 years as a research fellow at the Department of Anesthesiology, University of Pennsylvania, Philadelphia, studying tone dependent responses in the pulmonary vascular bed. She completed her anesthesia residency at the Department of Anesthesiology and Critical Care Medicine in Hadassah Medical Center, Hebrew University, Jerusalem after which she returned to the University of Pennsylvania in Philadelphia, Department of Environmental Medicine, for further studies on lung injury and few years later to Department of Anesthesiology at Stanford University.

Prof Matot received multiple prestigious grants including an award grant from the American Society of Cardiovascular Anesthesiologists, GIF (German Israel Foundation), ISF (Israel Science Foundation) and more. Prof Matot has published > 100 peer review papers in prestigious journals and is an invited speaker to many international meetings.

WOMEN ANESTHESIOLOGISTS ATTITUDE AND REPORTED BARRIERS TO CAREER ADVANCEMENT IN ANESTHESIA

Department of Anesthesiology, Intensive Care and Pain at the Tel Aviv Medical Center, Israel

Gender imbalance in anaesthesia leadership needs further exploration. Whether women (compared to men) anaesthesiologists aspire to career advancement and what are their reported barriers to advancement, are the focus of this talk. In total, 3048 ESA members (1706 women, 1342 men, 30% of all ESAIC members) responded to a survey that addressed these questions. The majority were specialists, married or with a partner, and have children; 47% of women and 48% of men wish to pursue a leadership career. Barriers to career promotion noted by women were primarily attributed to work–private time considerations (extra workload and less personal time [84%], responsibility for care of family [65%], lack of part-time work opportunities [67%]), and the shift away from clinical work [59%]). Men respondents indicated the same barriers although the proportions were significantly lower.

Considerations related to the partner (lack of support, career development of partner) were last on the list of variables reported by women as barriers. Importantly, many women noted deficiencies in leadership (68%) and research education (55%), and women role models (41%) and self-confidence (44%). Although many barriers are noted by women, they are as eager as men to assume leadership positions. The survey results help in identifying possible areas for intervention to assist in career development.

MARIJA VAVLUKIS (MKD)

Marija Vavlukis is a specialist in internal diseases, cardiologist, intensivist, Professor at the University Ss. Cyril and Methodius, Faculty of Medicine. Her research field of interest is in intensive cardiac care treatment, heart failure, coronary artery disease, cardiovascular metabolic risks, lipidology, etc. She is non-invasive imager with the expertise in nuclear cardiology.

D-r Vavlukis received her master of medical science with the topic from nuclear cardiology, and PhD with the topic of prognostic modelling in patients with coronary artery disease treated with surgical myocardial revascularisation, both at the University Ss. Cyril and Methodius. She is a Fellow of the ESC from 2016, Nucleus member of the WG for Coronary Pathophysiology and Microcirculation (in the frames of ESC), since 2018-2022 (voting member), and 2022-2024 non-voting member. She has more than 80 publications on Web of science, and she served as a reviewer on more than 60 manuscripts published in reputed journals and stored on Web of science. She serves as an review editor in Intensive Care Cardiovascular Medicine and Cardiac Rhythmology, as well Guest Associate Editor in Intensive Care Cardiovascular Medicine, for Frontiers publishing house.

VARIOUS FACES OF ELEVATED CARDIAC TROPONIN-DO WE NEED A CARDIOLOGIST ON BOARD

University Clinic of Cardiology, Ss Cyril and Methodius University in Skopje, Faculty of Medicine, Skopje, Macedonia

Abstract:

Perioperative myocardial injury is a relatively frequent complication associated with non-cardiac surgery, causing significant morbidity and mortality of patients treated with non-cardiac surgery.

High-sensitive cardiac troponin (T, and/or I) measurement is easily available and serves as a basic tool in the diagnosis of perioperative myocardial injury within 30 days after non-cardiac surgery.

Many physiologic factors contribute to myocardial injury, such as hypotension, tachycardia, and anemia. Furthermore, many non-ischemic reasons causing hypoxia can lead to myocardial hypoxic injury, such as sepsis, pulmonary embolism, or acute stroke. Finally, many mechanisms cause myocardial ischemia and consecutive myocardial infarction and/or myocardial injury without infarction, either through plaque instability (including plaque rupture or plaque erosion), or through various mechanisms of supply-demand mismatch (coronary vasospasm, coronary micro embolism, tachy/bradycardia, hypo/hypertension, anemia, hypoxemia etc.).

In comparison to non-operative myocardial injury/infarction, peri/post-operative myocardial infarction carries an increased risk of adverse outcomes including all-cause mortality.

Preventative measures include pre-operative, such as a thorough preoperative risk assessment and risk factor optimization, and peri-operative, specifically avoidance of intraoperative mismatch of myocardial oxygen supply and demand. Peri- and postoperative surveillance of patients at higher risk of cardiovascular complications, aiming towards early recognition, and appropriate management.

In this continuum, the cardiologist is a crucial partner at every step of this journey, finishing with a safe discharge of patients hospitalized and treated for non-cardiac surgery.

Keywords: myocardial injury, myocardial infarction, noncardiac surgery, troponin, risk assessment

MAJA SOSTARIC (SLO)

Assoc. prof. dr. Maja Šoštarič graduated from primary school at the University of Ljubljana in 1989. After graduation, she was employed at University Medical Center Ljubljana and completed her specialization in anesthesiology and reanimatology, and specialization in intensive medicine. From 2005 she is the head of the department for cardiovascular anaesthesia and intensive care. In 2006 she attained a doctorate and in 2020 she was habilitated to the title of associated professor at the Medical Faculty of Ljubljana. Since 2010, she has also been employed at the University of Ljubljana, and from 2012 she has been the head of the Cathedra of Anaesthesiology and reanimatology. In her research work, she focused on perioperative management for minimally invasive cardiac surgery; neuroprotection in cardiac surgery; Fast-track in cardiovascular surgery; and regional anaesthesia for thoracic surgery. Invited lectures and publications in scientific journals are from this field. As a member of the research group, she was involved in the development of new methods in cardiac surgery in the research work that was submitted for the ARRS project. The field of acute and chronic pain relief brings together specialists from various medical fields. As the head of the UL program group, she participated in the ERASMUS+ project entitled "Strengthening Capacities for Higher Education of Pain Medicine in Western Balkan Countries". She is a mentor for residents in aneaesthesia, reanimatology and perioperative intensive medicine and a mentor to doctoral students. She is a member of Medical Chamber of Slovenia, Slovenian medical association, Slovenian society of anaesthesiology and intensive medicine, ESAIC and EACTAIC. She was a president and at the moment she is vice-president of Slovenian society of anaesthesiology and intensive medicine. Publications in international professional journals. As 1st or lead author, she has 18 publications in international professional journals with IF. As an invited lecturer, she participates in national and international conferences.

PERIOPERATIVE PREPARATION OF CARDIAC PATIENT FOR NON-CARDIAC OPERATION

Abstract

Traditionally, the care of patients undergoing major surgery has been tailored to the index operation and the disease being treated by this procedure. There is evidence that the postoperative complications relate primarily to the interaction between the inflammatory response to the tissue injury of surgery and a patient's physiological reserve, modulated by the type and the quality of surgery[1]. The response to surgery becomes the primary 'disease process' and the consequent organ dysfunction the condition to which care should be focused[2].

Preoperative cardiovascular management is an essential component of overall perioperative cardiovascular care. It involves preoperative detection and management of cardiovascular disease and prediction of both short- and long-term cardiovascular risk. It affects anaesthetic perioperative management and surgical decision-making. This requires individualized management. Careful preoperative preparation at least a week before surgery, rational decision for the necessary tests and examinations, good cooperation with the cardiologist and surgeon, and careful planning of early postoperative treatment are key for better outcomes after surgery and reduced postoperative complications. Perioperative medicine aims to deliver the best possible pre-, intra- and post-operative care to meet the needs of patients undergoing major surgery[2].

The optimal preoperative optimization of the patient's condition carefully planned surgical procedure, anaesthetic perioperative management, and postoperative rehabilitation are crucial for the optimal outcome of surgical treatment.

The immediate aims of preoperative cardiac management are:

1. Identification of patients with potentially life-threatening cardiac disease that require preoperative assessment and treatment by cardiologist.

2. Identification of the most appropriate testing and avoidance of unnecessary testing.

3. Identification and implementation of the most appropriate medical and interventional cardiovascular treatment strategies[3].

Depending on the type of surgery and patients' characteristics surgery could be performed in general or regional anaesthesia. Nevertheless, what kind of anaesthesia is going to be performed the preoperative assessment is the same. Special attention needs to be paid to the medication the patient is taking regularly. Regional anaesthesia has been shown in numerous studies to decrease the perioperative neuroendocrine stress response and therefore to reduce the number of thrombotic complications[4].

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SAMIR KUCI (ALB)

Prof. Asc, PhD, MD Saimir Kuci. Born in 1975
*1993-1999 MD degree earned at the Faculty of Medicine, Tirana University of Albania. *2000-2004 Specialization in Anesthesia and Intensive Care at Mother Teresa Hospital, Tirana, Albania.*2008 Postgraduate specialization in "New techniques of cardiac protection" at Tor Vergata, Rome, Italy.*2010 Training at the Heart Center Surgery, Nürnberg Süd Klinikum, Nuremberg, Germany. *2010-2015 PhD, with the topic "Blood cardioplegia vs crystalloid cardioplegia in cardiac surgery". Completed at the Faculty of Medicine, Tirana, Albania. *2011 Short training session at the Pediatric Heart Center Surgery, Bambino Gesù Hospital, Rome, Italy. *2022 Earned the title of Associate Professor. *Member of ASTES - Albanian Society for Trauma and Emergency Surgery. *Member of ESA - European Society of Anaesthesiology. *Member of EACTA - European Association of Cardiothoracic Anesthesiology. *Author and co-author of 200 publications in national and international congresses and journals.*2010-Present Head of Anesthesia and Intensive Care unit at Cardiovascular Surgery Clinic, Mother Teresa University Hospital Center, Tirana, Albania. *2022 Elected President of ASAI.

PERIOPERATIVE MANAGEMENT OF PATIENTS WITH PROSTHETIC HEART VALVES THAT REQUIRE

Saimir Kuci, Alfred Ibrahimi, Marsela Goga, Krenar Lilaj
Anesthesia & ICU Service at Mother Teresa University Hospital Center

Abstract : Worldwide, about 13% of the 200,000 annual recipients of prosthetic heart valves (PHV) present for various surgical procedures. Also, more and more females are opting for pregnancies after having PHV. All patients with PHV present unique challenges for the anesthesiologists, surgeons and obstetricians (in case of deliveries).

They have to deal with the perioperative management of anticoagulation and a host of other issues involved. We reviewed the English language medical literature relevant to the different aspects of perioperative management of patients with PHV, particularly the guidelines of reputed societies that appeared in the last 20 years. Regression of cardiac pathophysiology following valve replacement is variable both in extent and timeline. The extent to which reverse remodeling occurs depends on the perioperative status of the heart. We discussed the perioperative assessment of patients with PHV, including focused history and relevant investigations with the inferences drawn. We examined the need for prophylaxis against infective endocarditis and management of anticoagulation in such patients in the perioperative period and the guidelines of reputed societies. We also reviewed the conduct of anesthesia, including general and regional anesthesia (neuraxial and peripheral nerve/plexus blocks) in such patients. Finally, we discussed the management of delivery in this group of high-risk patients. From the discussion of different aspects of perioperative management of patients with PHV, we hope to guide in formulating the comprehensive plan of management of safe anesthesia in such patients.

Keywords: Anticoagulation bridging therapy, heparin, infective endocarditis, low molecular weight heparin, neuraxial block, prosthetic heart valve, vitamin K antagonist

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СЕСИЈА 5 / SESSION 5

TATJANA TROIKJ (MKD)

Associate Professor Dr. Tatjana Trojikj, after completing secondary education, began her studies at the Faculty of Medicine at the "Kiril and Methodius" University in 1980/81, and completed her studies at the Faculty of Medicine in 1986. In 1989, he was employed at the Clinic for Surgical Diseases "St. Naum Ohridski" in Skopje at the Department of Anesthesia and Intensive Care, and from 1992 - 1996 he specialized in Anesthesia, Reanimation and Intensive Care at the "Clinic of Anesthesia, Reanimation and Intensive Care" of the Ministry of Health at UKIM Skopje. Part of the specialization is spent at the university hospital "St. Rock" in Nice France. After completing her specialization, Dr. Tatjana Trojikj continues to work at the Clinic for Surgical Diseases "St. Naum Ohridski" in Skopje at the Department of Anesthesia and Intensive Care, where he became the Head of the Department of Anesthesia. In 2008, he acquired the title of Primarius. In 2003, he completed his master's studies with the defense of his master's thesis "Influence of operative trauma on the nutritional status of the patient", and in 2013 he defended his doctoral dissertation with the title "Influence of the techniques of alveolar ventilation on rapid gas exchange in patients on mechanical ventilation". In 2015, he became the head of the anesthesia department at the University Clinic for Surgical Diseases "St. Naum Ohridski" Skopje. Since 2020, she has been working at GOB 8 September Skopje, where she is intensively involved in the care and treatment of patients sick with COVID-19, and in 2022 she will become the head of the anesthesia, resuscitation and intensive treatment department at GOB 8 September.

She is an associate professor at the Faculty of Medical Sciences at Gotse Delchev University in Shtip, where she is actively involved in the education of students in medical sciences and is daily involved in the education of anesthesia and intensive care trainees at the same faculty.

POSITIVE ANESTHETIC ALLERGY TESTING - WHAT TO DO NEXT

Tatjana Trojikj[1,2],Silvana Kraleva[2], Jasmina Jandreska Panova[2], Iskra Meshkova[2],Maja Konjanoska[2] Emilija Nagjenovska[2]
[1]Faculty of Medical Science "University Goce Delchev " Stip, North Macedonia;[2]GOB 8 Septemvri Skopje North Macedonia

Allergy is becoming a very often medical problem all over the world, especially during anesthesia. There are increased numbers of allergy tests due to positive anamnestic facts obtained from patients that are planning operations. Every patient with positive allergic reactions to 2 groups of medications or allergic reaction in a previous anesthesia, are usually tested for allergic reaction for all the medications we use in anesthesia. We noticed that there are increased number of patients that are positive on some anesthetic drugs. Very often they are positive to two or three groups od anesthetics drugs. We noticed an increased number of patient allergic to opioids like fentanyl and remifentanil. There are patients allergic to muscle relaxants depolarizing like Suxamethonium- (Succinylcholine) or non-depolarizing drugs especially on rocuronium. Also, there are patients that are allergic on sedatives like Propofol, Ketamine. During our morning conferences we discuss these cases. We were suspicious that probably there are mistakes during the testing .But after sharing the problem with dermatologists they pointed out that during Prick's tests anesthetic drug is diluted 3 to 4 times and if on the dilution test is positive that means that patient will be allergic on that drug without any doubt. We would like to discuss few cases and the way we solve the difficulties.

First case: Obese patient with BMI 28 had previous operation for umbilical hernia .During that operation she had allergic reactions on opioids .She was admitted in our hospital for ventral hernia. We made tests for allergy and she

was found to be allergic on opioids- Fentanyl, Remifentanil, Ketamin,non depolarizing muscle relaxants, nonsteroid and anti-inflammatory drugs. She was not allergic on Paracetamol, Bupivacain and Propofol. We decided to give her a high spinal anesthesia L1-L2,with 4 ml 0,5% Bupivacain. Opeartion was finished smoothly.

Second case: We had a patient with diverticulosis, who was planed to be operate hemicolectomy. She had anamnesis on allergies, and allergic reactions on NSAID and Paracetamol. After the tests were made, she was found to be allergic on Fentanyl, Remifentnyl, Ketalar, also on Paracetamol and NSAID. For operation we decided to give her continuous epidural anesthesia with 0,25% Bupivacain. She had her epidural on level L1-L2, and before intubation we gave her bilateral Tap block, and we intubate her with Propofol and rocuronium was used to facilitate intubation. Anesthesia was maintained with sevoflurane and propofol who was administrated on continuous infusion with rate 60mcg/kg/min. Postoperatively she had pain scor -VAS score 3 and had continuous epidural analgesia.

Third case: We also has a patient who was admitted in our hospital for Cholecystectomy with allergic on all opioids Fentanyl, Remifentanil. We decided to give her opioid free anesthesia. After O2 supply we started with slow infusion (during 10 min) of dexmedetomidine 20µg, followed by 10mg dexamethasone, ketoprofen 160mg, paracetamol 1g, lidocaine 100mg and MgSO4 2.5g. We continued with introduction of anesthesia with Ketamine 20mg and Propofol 170mg and preformed intubation. Anesthesia was maintained with continuous application of dexmedetomidine 4µg/ml to rate of 8ml/h, MgSO4 200mg/ml (1 ml/h) and lidocaine 1% (10mg/ml) in rate of 5ml/h. Also, sevoflurane to MAC 0.6 was used. On the end of the surgery patient was smoothly extubated, after giving neostigmine 2.5mg and 1mg Atropine. Vital signs remain stable in postoperative monitoring and pain score - VAS was 4 in the first hour after surgery. Metamizole sodium 2.5g was given prior discharge from recovery room. On the first day after surgery VAS pain score vas 2, Ketoprofen 160 twice a day and Paracetamol 1g three times a day was given.

Discussion: Finding out the cause of an allergic reaction is complicated. A person can experience an allergic reaction to other factors or medications, such as antibiotics, muscle relaxants, or latex, than anesthesia. If a medical professional administers anesthetic medications to a person who is allergic to them, they they will develop anaphylaxis. Anaphylaxis during anesthesia occurs in1 in 200000 cases. Anaphylaxis can be life threatening. Anaphylaxis initiate the body releases chemicals who can initiate shock. Simptoms can be hives,itching bronchospasm, nausea, vomitinig, abdominal pain, dizziness collaps, tachycardia and cardiac arrest. After allergic reaction person who overcame this even successfully,can develop cardiovascular respiratory and cognitive disorders.

Conclusion: We found that there are very often patients with allergy positive tests. We take these reactions very seriously and whenever we have these patients, we prepare anesthesia protocols in advance. There is not a general rule for all the patients. What approach we will choose, depends on operation, medicaments that are available in that moment, and consensus of the patient for anesthesia acknowledging all the difficulties, and accepting the operation and anesthesia protocols that he will have to challenge.

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DAFINA KARADJOVA (MKD)

Dr. Dafina Karadjova was born 1972, graduated in 1997 on the Medical Faculty in Skopje. She has worked in primary health care as physician and also as an educator on a project regarding continuous medical education. As of 2002 she works at the University Clinic for Gynecology and Obstetrics in Skopje. She finished her specialization in Anesthesia, reanimation and intensive care in 2007. She enrolled in the School of doctorate studies in 2012 and defended her doctorate dissertation with the title "Patient-controlled analgesia with remifentanyl for painless birth: Efficiency and effects on the mother and child" in 2018. She was elected Assistant Professor at the Department for Anesthesia, Reanimation, and Intensive Care in 2019. She is active in her teaching-scientific activity for students and as a mentor and educator of anesthesia residents at the Department for anesthesia and reanimation. During the course of her carrier, she has been dedicated to increasing the percentage of painless births, as well as the development of new techniques in obstetric anesthesia. She has held lectures at scientific-expert gatherings, National and international Congresses. She is author and coauthor of many scientific papers, published in journals with international editorial boards.

COMPLICATIONS OF NEURAXIAL OBSTETRIC ANESTHESIA

Obstetric anesthesia is a constantly evolving specialty and one of the higher-risk areas of anesthetic practice. From one side there is a modern obstetric anesthesiologist with solid knowledge of maternal anatomy, physiology and evidence-based obstetric novelties, strong backup of advanced technology including monitoring devices, airway equipment, and ultrasound and from the other side there are patients with morbid maternal obesity, increased maternal age and complex concomitant diseases. Both regional and general anesthesia carries the potential for com-plications, some of which, although rare, may be serious, life-threatening and permanently disabling. This review will cover some of the more frequent complications of neuraxial anesthesia, and also some of the rare, but very serious complications. Neuraxial anesthesia is the most commonly used and most effective technique for pain relief during childbirth, as well as anesthesia for cesarean section. At the same time, it is the safest technique with strong safety record, although mild, transient and rarely serious, life-threatening complications are possible. Post dural puncture headache (PDPH) is the most common complication of neuraxial procedures in obstetric patients. It is a positional headache that occurs because of leakage of cerebrospinal fluid through a dural hole created by the needle. PDPH may occur after spinal anesthesia or after unintentional dural puncture (UDP) with an epidural needle. The exact mechanism of PDPH is not completely clear, but it involves cerebral vasodilatation and traction of intracranial structures. A patient with PDPH may also complain of neck stiffness, nausea, photophobia, low back pain and tinnitus. These headaches are postural and normally develop within the first 72 h. The incidence of PDPH varies significantly depending on patient's risk factors but mainly it depends on the type and size of needle used. According to the literature PDPH occurs in 3 till 11 percent of patients after dural puncture with a spinal needle, and in up to 81-88 percent of patients who have UDP with an epidural needle[1,2]. Most PDPHs will resolve in 7 to 10 days if untreated. Management of PDPH can be divided into conservative treatment, pharmacological management and an epidural blood patch. Conservative management involves hydration, bed rest, oral analgesics and antiemetics. Pharmacological methods include caffeine, gabapentin, hydrocortisone, theophylline, neostigmine, atropine, sumatriptan, adrenocorticotrophic hormone, but all of these have limited efficacy. Alternatives to EBP include bilateral transnasal sphenopalatine block and greater occipital nerve block, also with limited data[3]. An epidural blood patch is the gold standard for treatment of severe PDPH and definitive treatment4. Number of strategies have been used to prevent PDPH after dural puncture, and they include: prophylactic drug therapy, prophylactic epidural blood patch and intrathecal catheter placement, but their efficacy is unclear[5]. Neurological complications following delivery are rare. Postpartum neurological problems are usually with obstetric etiology and result of a nonanesthetic causes. They are mild and often resolve spontaneously. Neurologic injury associated with neuraxial techniques in obstetric

patients is extremely rare and although true incidence is unknown it seems to be lower in obstetric patients than in other surgical patients. The injury is usually result of needle or catheter direct trauma to the nerve, chemical injury, infection or indirect compression to the spinal cord or the nerves. Direct trauma to the nerve is the most common cause of postpartum neuropathy associated with neuroaxial anesthesia. Patients can experience pain, paresthesia, and muscular weakness in the distribution of the nerve almost immediately after withdrawal of the neuroaxial block[6]. Most of the obstetric patients recover completely after the traumatic nerve injury. Spinal epidural hematoma (SEH) is rare but potentially catastrophic complication of neuraxial blockade. It can occur in any patient during technically challenging anesthesia by breaching a vessel wall with either the needle or catheter, but is more likely in patients with disorders of coagulation and in those receiving anticoagulants. The incidence of SEH appears to be significantly lower in obstetric patients than in other populations. Retrospective studies have reported an incidence of spinal hematoma in obstetric patients between 0 and 0.6 per 100,000 epidural catheterizations[7]. Acute SEH usually presents with sudden-onset back pain, often radicular in character with motor and sensory deficits below the level of the spinal cord compression. Surgical decompression within 8 to 12 hours of onset of symptoms can result in good neurologic recovery. Epidural abscess and meningitis are uncommon, potentially fatal, complications of neuraxial anesthesia procedures. Epidural abscess is more likely to occur after epidural techniques, particularly after prolonged epidural catheterization, whereas meningitis typically occurs after dural puncture. It seems that in obstetric patients these serious complications are very rare7. Clinical presentation is with fever, malaise, headache, low back pain, motor weakness, bladder and bowel dysfunction for the epidural abscess or neck stiffness, photophobia, headache, fever, back pain, altered mental status, vomiting, and seizures for the meningitis. All these symptoms are very sneaky and very untypical and can lead to a delay in diagnosis. Strict aseptic technique must be followed for any neuraxial procedure to minimize the risk of contamination and infection.

Fetal and neonatal effects

Neuraxial techniques can act on the fetus directly through the transfer of drugs through the placenta or indirectly through certain effects that anesthesia has on the mother such as hypotension. Placental transfer of drugs is very rare during low-dose spinal and epidural analgesia during labor. Fetal bradycardia immediately after initiation of neuraxial techniques results from the sudden onset of maternal analgesia or maternal hypotension, it is transient and does not increase the risk for cesarean section or adverse neonatal effects[8]. Neuraxial techniques for labor may shorten first stage of labor as well as prolong second stage of labor, but do not increase the risk of cesarean section or instrumental vaginal delivery. Regarding the connection between epidural analgesia for labor and childhood autism, which is the target of many new studies, there is no conclusive evidence that epidural labor analgesia causes autism spectrum disorders (ASD) or other types of behavioral or learning disabilities, or that another form of labor analgesia or without analgesia will reduce the risk of ASD. The available and relevant evidence comes from retrospective and database studies and the results are mixed. Many studies shown positive connection between epidural labor analgesia and autism spectrum disorders, but that connection disappeared when studies that included unmeasured family socioeconomic and genetic factors were excluded[9,10.] Although complications related to obstetric anesthesia are rare, they can be very uncomfortable for a mother and her newborn, while serious complications are extremely rare, but they can lead to catastrophic outcomes. This review highlights the need for vigilance, attention to detail while providing anesthesia and being prepared to rapidly diagnose and treat any complication.

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ALBERT LESHI (MKD)

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Field of interest: Pharmacokinetics of anesthetics drugs, Neuromonitoring during anesthesia, Target control infusion, Pediatric anesthesia.

TOTAL INTRAVENOUS ANESTHESIA – TARGET CONTROL INFUSION

Total intravenous anesthesia is a general anesthesia technique that includes induction and maintenance of anesthesia with anesthetics administered intravenously. The use of this technique varies in different countries, although in our country it is used much less compared to the technique of volatile inhalation anesthetics. The use of TIVA depends on the clinical habits of the anesthetists and the degree of comfort they have with the application of TIVA. We aim to describe the main principles of TIVA in which we need to ensure the depth of anesthesia and avoid accidental awareness during general anesthesia (AAGA).
AAGA has an incidence of 0.001 to 0.2% of cases receiving general anesthesia, in patients receiving TIVA AAGA may be the result of technical errors in the calculation or administration of anesthetics as well as inadequate monitoring of the same. However, the data that would recommend or not the TIVA technique versus inhalation anesthesia are limited, even though the advantages of both techniques are known, there are also many unknowns in our knowledge comparing the two anesthetic techniques, especially by patient's experiences. Several studies, such as the THRIVE trial, track recovery trajectories after intravenous anesthesia compared with inhalation anesthesia.
To reduce technical errors during TIVA these steps should be followed

1. Providing an additional reliable venous line in addition to the venous line that will serve to administer infusion solutions.
2. Preparation of the syringes with the appropriate anesthetics that will be used for induction and maintenance of anesthesia and marking them
3. Check the connections - between the infusion line and the patient's venous cannula
4. Check the infusion systems as well as the dose and maximum flow that you have set, to prevent overdose or underdosing of anesthetics
5. Let everything be visible
6. Check the alarms, if they sound

Anesthesiologists administering general anesthesia should be familiar with the principles, interpretation, and limitations of electroencephalography or EEG monitoring. It is recommended that EEG monitoring be set up before the induction of anesthesia, neuro-monitoring is especially recommended to be used whenever using TIVA in combination with neuromuscular blocking agents, EEG monitoring is recommended to be set up before induction of anesthesia so the anesthesiologist can successfully visualize the EEG wave, which will facilitate the process of recognizing changes in the EEG wave that occur after induction of anesthesia. In most patients, changes in the EEG such as burst suppression is result of excessive administration of Propofol or volatile anesthetics, or in other patients, the appearance of alpha waves appearing next to delta waves is a sign of shallow anesthesia.
In adult patients as well as patients with previous neuro-degenerative diseases, the appearance of alpha waves is rarer compared to younger patients.

Although there are several drugs used in TIVA, they do not differ from those used in balanced anesthesia except halogenated volatile anesthetics that are not used at all in TIVA, the most common combination is between Propofol as a hypnotic and Remifentanil as an opiate.
Propofol is an anesthetic with a short hypnotic and sedative effect resulting in loss of consciousness and amnesia. a drug that acts quickly and has a short effect, which means that it has all the characteristics to be the drug of choice for TIVA-TCI, it is metabolized in the liver and excreted through the kidneys. The elimination time can vary from a few minutes to even days for certain drugs. Still, the effect of the drug on target organs such as the brain is better described through the Context-sensitive half-life, which represents the time required for the concentration of the drug in the plasma to be halved by 50% after stopping the infusion pump. As the infusion time of the drug increases, so does the elimination time reflected by the Context-sensitive half-life, only for Remifentanil the Context-sensitive half-life is constant regardless of the duration of the infusion, as a consequence of the pharmacokinetic properties of Remifentanil.

The three-compartment model
Anesthetics should be liposoluble substances to be able to cross the blood-brain barrier, which implies that these drugs are also distributed in other cells and tissues. The relationship between the distribution rate of certain tissues about the plasma concentration and the effect site (brain) can be understood through the three-compartment model. After the administration of a bolus of propofol, it results that the concentration of propofol in the plasma is high, which also represents the central compartment, which is the V1-initial volume of distribution, the central compartment consists of blood, plasma, and organs that are highly vascularized such as the lungs, meanwhile the drug from the blood is distributed and redistributed in the other two compartments, in the smaller compartment V-2 represented by muscles, and the larger compartment V-3 composed of less vascularized tissues such as fat tissue. Propofol has a high volume of distribution in the third compartment as a consequence of its liposolubility. The total volume of distribution is the sum of the distribution of the three compartments that exchange with each other in a different rate of redistribution, which is represented by the constant K for each compartment separately.

The concept of titration of anesthetics to avoid both excess and lower concentrations of the drug in the CNS (effect site) during induction as well as during maintenance of the general anesthesia.

Predicting anesthetic plasma concentration is a complex task, Target Controlled Infusions (TCI) can achieve this using various algorithms that describe drug distribution between different compartments.

Remifentanil is a selective opioid for mu-opioid receptors located mainly in the CNS, thereby increasing the pain threshold, modifying pain perception and inhibiting ascending pain pathways, short-acting and rapid-acting, elimination independent of either hepatic or renal function which makes it a suitable drug for administration in continuous infusion in combination with propofol.

BETI KOSTADINOVSKA JORDANOVSKA (MKD)

Dr. Beti Kostadinovska Jordanoska has graduated on 12.07.1999, gaining the title Doctor of Medicine. She has been approved postgraduate studies in the field of Anesthesiology with resuscitation in October 2001, for a period of 24 months and took the residency - Anesthesiology with resuscitation from 01.03.2002 for a period of 48 months. She passed specialist exam in the specialty Anesthesiology with resuscitation on 24.01.2007 and she started doctoral studies in the field of Anesthesiology with resuscitation in October 2020, for a period of 18 months. She is currently working as a Cardiac Anesthesiologist / Intensivist in Private Hospital Sistina – Skopje at the department for Cardiac surgery.

ENHANCED RECOVERY AFTER SURGERY PROTOCOL IN CARDIAC SURGERY

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ABSTRACT

Purpose of Review: Enhanced Recovery After surgery (ERAS) evidence-based protocols are multimodal and multi-professional approaches to reduce physiological and psychological stress , promoting postoperative recuperation, and reducing the likelihood of postoperative complications and the lengh of hospital stay.The goal of ERAS is to return patients to normal functional status as quickly as possible.The ERAS protocol was initially created for patients undergoing colorectal surgery, but it has now been developed for almost all surgical subspecialty. Over the past few years, interest in using ERAS in cardiac surgery has increased. In this article, consensus recommendations for the best postoperative care of patients having undergoing cardiac surgery will be presented. For each protocol element, a study of meta-analyses, sizable non-randomized investigations, randomised clinical trials, and reviews was carried out. For each topic, a consensus recommendation was formed based on the evaluation of the evidence.
Summary: The implementation of cardiac ERAS involves more than just setting up a protocol. To maximise the speed and thoroughness of rehabilitation, ERAS calls for a gradual transformation in culture, overcoming the obstacles to starting and maintaining real organisational change, and switching to a patient-centered system of care, critical team building, instruction, planning, and procedures required to create and maintain a successful ERAS cardiac programme.

Key Words: Cardiac surgery, ERAS, Enhanced recovery, Perioperative care, Complications.

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MECHANICAL CIRCULATORY SUPPORT (LVAD) - CHALLENGES IN ANESTHESIA

Nowadays we are witnessing increased number of patients with implantation of ventricular - assist devices (VADs), either as bridge to transplantation or recovery and also very often as destination therapy in patients with advanced heart failure. In the future this option as treatment is expected to increase furthermore. With improved survival, more of such patients now present for noncardiac surgery. This scenario may be more common in patients with VADs, placed for destination therapy, because this patients tend to be older, have more comorbidities and live longer with their devices. Thus, it is important for anesthesiologist to be aware of specificity of their needs during anesthesia for noncardiac surgery. It is essential to understand the physiology in this patients, represented with preload dependency and afterload sensitivity. Besides standard preparations, perioperative care should optimize intravascular volume, right ventricular function and maintain afterload within recomended ranges for optimal LVAD function. Therefore adequate monitoring is essential during surgery, in terms of invasive blood pressure measurement due to the nonpulsatile blood flow and transesophageal echocardiography as useful method for monitoring the function of nonsupported cardiac ventricle. Another issue is anticoagulation, which is standard therapy in this patients and should be interrupted or decreased prior to surgery. For best outcomes, a multidisciplinary approach is essential in perioperative management of the patient.

Key words: advanced heart failure, mechanical circulatory support, LVAD, noncardiac surgery.

СЕСИЈА 6 / SESSION 6

ALI FUAD ERDEM (TUR)

Prof. Dr. Ali Fuat Erdem, President of Turkish Society of Anesthesiology and Reanimation, graduated from Gazi University Medical Faculty in 1993. He worked as a general practitioner between 1993 and 1998. He became an anesthesiologist at Department of Anesthesiology and Reanimation of Atatürk University Faculty of Medicine in 2003. He worked as a specialist for one year at this department, and then assigned as an assistant professor in 2004. He became an associate professor in 2010. In 2011, he started working at Sakarya University. He founded the department of Anesthesiology and Reanimation of Sakarya University Medical Faculty. He became professor in 2016. He is still head of the department of Anesthesiology and Reanimation Sakarya University Medical Faculty. He has been a member of the executive board and scientific committees of societies, especially the Society of Turkish Anesthesiology and Reanimation.

He is the director of the " Practical Low Flow Anesthesia Courses", which have been held 33 times since 2018 with Turkish Society of Anesthesiology and Reanimation to popularize the application of low-flow anesthesia (FGF < 0.5 L/min) in terms of sustainability. He has over 100 published articles, of which 80 articles published in web of science.

THE FRESH GAS FLOW SHOULD ALWAYS BE AS LOW AS POSSIBLE

Although the carbon footprint, greenhouse gas effects and global warming of inhalation agents are well known, anaesthesiologists still do not reduce the fresh gas flow sufficiently in general anaesthesia applications due to some unnecessary concerns such as such as hypoxia, hypercapnia, insufficient depth of anaesthesia.

It has been estimated that global health care contributes 4·4–5·2% of total global greenhouse gas emissions (CO2 equivalents).[1] Direct emissions of inhaled anaesthetics can account for approximately 3% of the health-care climate footprint in high-income nations.[2] Estimates of the contribution of anaesthetic gases to the forcing of climate change range substantially from 0·01% to 0·1% of total global greenhouse gas emissions.

In recent years, many reports, articles, and societies have strongly recommended reducing the fresh gas flow. WFSA mentioned that Greenhouse gas' emissions from inhalational anaesthetic agents can be reduced by low flow anaesthesia and choosing inhalational agents with lower global warming impacts.[4] In the Glasgow declaration, the importance of low flow anaesthesia regarding sustainability was once again emphasized. Sustainability Committee of ESAIC strongly recommends the use low flow anaesthesia as a rule.

As anaesthesiologists, we must do our part to leave a more liveable world to future generations. So, we must reduce the fresh gas flow as low as possible to release minimal of inhalation agents into the atmosphere from the waste gas system.

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HULYA BILGIN (TUR)

Hulya Bilgin, M.D. is a Professor in the Department of Anesthesiology and Reanimation at Bursa Uludag University, School of Medicine in Bursa, Turkey, and practices mainly neuroanesthesia. She was awarded professorship in anesthesiology and reanimation in 2006. One of her main area of interest is airway management. Nationally, she is one of the founding members of the Airway Management Subcommittee of Turkish Society of Anesthesiology and Reanimation. She has attended national workshops on difficult airway management as an organizing committee member and also instructor, and contributed many international workshops. She gave many lectures international and national meetings. She serves as Turkish council for European Airway Management Society (EAMS). The BOD of EAMS selected her to grant the fellowship of EAMS. She is also interested in low flow anesthesia, TIVA-TCI, nociception monitoring, thermoregulation and normothermia, and patient safety. She served as the General Secretary of Turkish Society of Anesthesiology and Reanimation between 2010-2012, as a member of executive board of National Society (2012-2014), as the elected president (2014-1016), and as a president (2016-2018). She was the Turkish representative for National Anesthesia Society Committees in European Society of Anesthesia (2013-2021).

BASIC PRINCIPLES OF TCI

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This subject is about Target Controlled-Infusion (TCI). Its explaine what target controlled anesthesia and pharmacokinetic (PK) and pharmacodynamic (PD) definitation are, and compartment models. Furthermore, in the light of recent literature, it make some explanations for PKPD models, and finally, summarize the topic.During surgery, the intens of painful surgical stimulation the body experiences can change rapidly. This requires adjusting the drug effects quickly and precisely. Anesthesia is essentially titration of drugs according to need. During Total Intravenous Anesthesia (TIVA), conventional infusions can't quickly increase drug levels for sudden stimulation increases or decrease them fast enough for low stimulation periods. They also can not keep drug levels steady in the plasma or brain during constant stimulation. The PD approach which is addressing this, adjusts drugs based on clinical findings, hemodynamic effects, EEG parameters, or other techniques for measuring anesthesia depth. The PK approach involves understanding concentration-effect relationships, minimal alveolar concentrations, therapeutic window concentration, dosing schedules to achieve these levels, and TCI. Target controlled infusion is an intravenous drug administration technique, where the aim is to reach target body compartment or relevant tissue by administering user defined drug concentration. The concept could also be applied to administer any drug that can be given as a continuous infusion. The kinetics of the drug differs according to a way of administration bolus or continuous infusion. Bolus dose behavior is represented by a single-compartment model, while repeated administrations or infusion use two or three-compartment models. TCI systems use PK models to control drug distribution and elimination mathematically. Understanding the PKs of drugs is crucial for continuous infusion methods. A bolus/elimination/transfer (BET) principle is used to approximate a constant plasma level of drug. Different TCI systems might use variations of the BET scheme. After an iv. bolus, the plasma concentration of a typical drug follows an exponential decline in three distinct phases. These decline is explained by distribution of drug between compartments. The central compartment V1, principally plasma, and two compartments which equilibrate rapidly (V2, well-perfused tissue like muscle) and slowly (V3, mainly fatty tissue). Drugs return to the plasma through rapid and slow distribution volumes and get metabolized and eliminated. The pharmacokinetics of most anesthetic agents are considered to best fit the three compartment models. These compartment volumes have no real anatomical correlation. The volumes represent solubility, with higher solubility meaning a larger volume. Initially, the model was developed to predict drug concentration change in plasma over time. It was created by studying many patients and their blood test results based on mathematical models that help determine the right dose of drug and appropriate rate of administration. The algorithms in pharmacokinetic pumps use exact analytical solutions. Once compartment V1 is filled by the bolus, the subsequent infusion rate compensates for rapid and slow transfer of drug to V2 and V3, and drug elimination from V1. When the three compartments reach steady-state concentration the infusion rate slows down to match elimination only. Elimination half-life does not work well in a multi-compartment model. For this reason, a term called For this reason, a term called context-sensitive half-time came out. Context-sensitive half-time is the time required for the plasma concentration of a drug to decrease by 50% after stopping the drug infusion. As the peripheral compartments fill (saturate), the cessation of drug action will depend more on metabolism and excretion from the central compartment. It should be remember that the longer infused a drug, the longer it takes to eliminate. Agents with high clearance and short context-sensitive half-lives should be used for rapid onset of action and rapid recovery. Due to that, drugs with fast onset and offset like as propofol and remifentanil are most suitable for balancing adequate hypnosis/analgesia with rapid recovery.

In TCI, the system calculates the required bolus dose and subsequent infusion rate to maintain the desired plasma drug concentration. The effect of the drug (brain concentration) will depend on the concentration in the central compartment (V1) and this is also the compartment where the drug is excreted from the body because i t is also balanced by the kidneys, liver and lungs.When the anesthetist wants deeper anesthesia for patient and increases the target concentration, the system gives a quick injection of the drug into the central compartment. This makes the level of the anesthetic drug in the blood rise quickly. The amount of drug put in is figured out based on how much plasma the central area can hold and how much drug is needed to reach the desired level. Once the system calculates that the drug level is where it should be, it stops the quick injection and starts a slower one. Because of practical reasons, the system does these calculations and changes the injection rate every 10 seconds. This means that even though the drug going out of the central area changes all the time, the injection rate changes like steps on stair.If a three-part model is being used, then three sets of these injections are needed. Even though the targeted drug level stays the same, a steady injection is needed to replace the drug that the body gets rid of. Two sets of injections, which get slower and slower over time, are needed to balance out the movement of drug from the central area to the other two parts. Because of all this, the injection rate slows down gradually until it stays the same (this takes more than 24 hours). As the clinical effect of a drug depends on the concentration at the effect-site, there is hysteresis or delay in clinical effect when the target plasma concentration of the agent is increased or decreased. This delay in onset of clinical effect depends on cardiac output, cerebral blood flow, concentration gradient, and pharmacological properties of the drug like as lipid solubility and degree of ionisation. Additionally, there's another model, called PKPD model. It includes an imaginary place in the body where the drug's concentration is proportional to the plasma concentration. This model helps account for the delay in the creation of equilibrium between the concentration in the plasma and effect site, brain. By using this model, we can match better the drug's time of onset and its concentration in plasma, making the treatment more effective. For PKPD modeling, an effect-site compartment can be added.

Due to its negligible volume, the rate constants for movement in and out of this compartment are the same (K1e = Keo). Keo should be used to describe the rate at which the drug is excreted from the site of action, but the site of action is generally considered to be an additional volumeless compartment, so there is no need for separate rate constants describing the movement into and out of the action compartment. Furthermore, a connection should be established between the drug concentration in the effect site and the actual clinical effect. For most intravenous anesthetics, it's assumed that the effect is directly related to the number of occupied receptors. From this, it can be deduced that there's a spectrum from no effect when no receptors are occupied to maximum effect when all receptors are occupied, and any additional increase in concentration won't lead to an increase in effect. Receptor occupancy isn't directly measured, and it should be understood that the drug's effect isn't as simple a physical entity as something like temperature. Signal translation, processing, smoothing, and interpretation will influence the final number seen on a monitoring device. Additionally, the effects of IV drugs are often multifaceted: some are desirable, some are not (side effects). Although all these effects share the same PK driver (e.g., blood concentration), the PD model, including ke0, can be entirely different. Different clinical effects arise from drug actions on various systems and may involve different lag times and rate constants. Propofol will not only render the patient unconscious but also induce vasodilation and, at higher concentrations, reduce heart contractility. These effects necessitate different PD models and different ke0 values. If the cardiac ke0 is faster than the brain's ke0, it becomes evident how challenging it is for the administering anesthetist to avoid a well-known phenomenon – cardiac effects. This complexity is why anesthesia is perceived as intricate and even considered more of an art than a science by some.Pharmacokinetic interactions happen when one drug affects the way another drug is processed in the body. Although these interactions should be considered, it's rarely needed to change the intended levels of drugs due to pharmacokinetic interactions.

On the other hand, the more important concern is the synergistic effects resulting from pharmacodynamic interactions between anesthesia drugs. These interactions often lead to the need to decrease the target concentration of drugs. Population specific models for propofol, like Marsh/ Schineder/ Peadfusor/ Cortinez and Kataria were adjusted for certain demographic groups. For anesthesia and sedation, most of these models are derived from narrow patient populations, which restricts applicability for the overall population, including small children, elderly, and obese patients. This forces clinicians to select specific models for specific populations. TCI systems using different PK models will result in different drug dosing, even if the same target concentration is used. Anesthesiologists should be aware of it. Recently, general purpose models have been developed for propofol, remifentanil and dexmedotimidine using data from multiple studies and broad, diverse patient groups. Eleveld model was developed using BIS as a targeted endpoint based on previously published data from 30 studies. Through this PKPD model, it becomes possible to project propofol levels and BIS values across a broad spectrum of individuals, encompassing neonates, the elderly, and those with higher body mass indices (BMIs). In this model, allometric scaling was used and the maturation factor and concomitant opioid use were also defined. This model predicted propofol concentrations and BIS score general for a diverse population for both anaesthesia and sedation.

The validation study for Eleveld model for propofol was done, and it showed us that it can be used in TCI in clinical anaesthesia practice. This validation study also showed that the effect site propofol concentration that needs to be targeted becomes progressively lower as age increases to achieve 50% of maximum effect. Besides it reported that dose individualisation with the Eleveld model is at least as successful as compared with other models. Remifentanil can be administered through TCI using the Minto model. However, due to its relatively simple pharmacokinetics, it can also be administered as a standard infusion (µg.kg-1.min-1). The other validation studies were done for Hanivoort model for dexmedotimidine. First one was in sedated patients under spinal anesthesia, and the authors reported that the model has the greatest utility. The second one was in children and adult patient. The study reported that the model was applicable to a broad range of ages and weights.In what are known as open-loop TCI systems, the infusion regimen remains constant, while closed-loop TCI systems incorporate input from continuously measured variables (such as somatosensory evoked potentials for assessing anesthetic depth, blood pressure, measured blood concentrations, and exhaled drug concentrations). The primary algorithm of the concurrent closed-loop anesthesia control system. The flow chart illustrates the multi-input-multi-output system designed for managing neuromuscular blockade and the depth of anesthesia. The advent of versatile, user-friendly and commercially avaliable target-controlled drug delivery systems has simplified Total Intravenous Anesthesia (TIVA) and made it as simple as using a vaporizer. It is of utmost importance to subject TCI systems to as through a check as the anesthesia machine. Infusion pumps are widely utilized in anesthesia and intensive care settings. Unfortunately, there has historically been a high occurrence of critical events linked to their use. Nevertheless, a majority of these incidents stem from human error. As a result, substantial efforts have been invested in developing more advanced and user-friendly pumps, constructing drug libraries, establishing standard techniques for drug dilution, and monitoring infusion sites and pressures. One of the distinctive features of TIVA is its capability to achieve precise drug titration, affording separate control over sedation and analgesia. Awareness should not be more prevalent than inhalation anesthesia, especially with the introduction of "smart" pumps that enhance safety, alongside proper training and rational utilization. To minimize incidents during TCI, careful consideration must be given to the preparation of drug infusions, programming TCI pumps, and selecting the appropriate pump. Inhalation anesthesia holds an obvious advantage in the ability to monitor vapor concentrations in the respiratory system, but technology is also available to measure propofol in inspired air and might become commercially viable in future clinical applications.An anesthetist using a TCI system for administering anesthetic agents can establish a desired concentration (often termed as the target concentration) and modify it based on observed responses to the set target concentration. This approach allows for separate provision of unconsciousness and analgesia. The process involves titration during induction, determining a propofol concentration for achieving unconsciousness, and then maintaining a consistent dose. Additionally, the concentration of opioids can be adjusted based on the extent of surgical stimulation (pain).As a summary, population specific models have some restrictions. The integration of new general-purpose models into TCI systems does indeed have the potential to significantly impact clinical settings. They are better than current commercial models by having fewer limitations in patient selection. These models can administer medication with superior precision and accuracy. They utilize an allometric scaling approach, and consider a wider range of patient characteristics, making dosing more realistic. One key advantage is the reduced burden on anesthesia practitioners.These general-purpose models streamline the process, can making TCI more accessible and effective in clinical practice. However, it's important to ensure rigorous testing, validation, and safety protocols when implementing such models in clinical practice to ensure patient safety and regulatory compliance.

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HUITI GENTIAN (ALB)

I'm Gentian Huti,anesthesiologist and Intensive Care physician near american Hospital 3, TIrane. I finished Tirana University Faculty of Medicine 1995-2001 ;entitle General Physician,2003-2007 Entitle Anesthetist and Intensive Care Physician. I'v worked as anesthesiologist and Intensive care physician: 2007-2010 near Neurosurgery Service at University Centre Hospital Mother Teresa,TIrane;2010-2011 near Hygeia Hospital Tirane; 2011-2016 near American Hospital Tirane as a Chief of Departament of "Anesthesia-intensive Care Unit-Emergency" ; november 2016-august 2017 training near Klinikum Karlsburg Germany; 2019 and actually chief of Departament of "Aneshesia-Intensive Care Unit" at American Hospital 3 Tirana. From 2021 part-time Lecturer at the University of Medicine Tirana,Departament of Anesthesiology and ICU. From 2022 part-time lecturer at The Western Balkan University Master of Nursing Science. From 2023 Academic and clinical tutor near Catholic University Our Lady of Good Counseil. From 2024 full time Lecturer near Faculty of Technician Medicine Science. Participation in a several number of Conferences and Congresses as a Lecture, Moderator and Scientific Committe. Training for Percutaneous Tracheostomi, Bronchoscopy, Hemodinamic Monitoring, Implantable Ports, International Diploma in ECMO. Member of ESA, ESICM, ELSO, EACTA, ASAIC and President of ASICM.

STRANGE COMPLICATIONS.

Introduction: Neurosurgical operations of posterior cranial fossa can be done in the prone position but also in the sitting position. There are several surgical reasons why neurosurgeons prefer sitting position. In the sitting position surgical exposure is better, the ventilation of the patient is more comfortable and physiological, but we may suffer hemodynamics because of the significant reduction of venous return from position, mechanical ventilation, and vasodilating effects of anesthesia. This is why the transducer of the arterial line is placed at the level of the skull base or otherwise at the level of meatus acoustics extern. Venous gas embolism is the most possible complication.

Material and method: The literature reports from 5% to 76%, and from these in craniotomy 24%, tumor resection 67%, and 9% in closing. ASA 3-4 has less incidence than ASA1-2 at young ages and without accompanying disease. The longer and more frequently VAE increases the opportunities for cardiopulmonary complications, quadriplegia, and other neurological deficits. Perioperative measures that are taken consist of filling with fluids, avoiding negative venous pressures, applying PEEP in the hall, head lifted 30 degrees - 45 degrees.

Discussion: At American Hospital 3, are performed 37 neurosurgery cases in adults in seated position and 20 cases in pediatric ages were made between 2020 and 20 in pediatric age. Gas embolism is found in 22% of adult cases and 14% in pediatric cases. In four patients, we also developed bilateral pleural effusions, and in a case of prolonged respiratory assistance. No death is recorded in our serial.

Conclusions: Neurosurgical operations of posterior cranial fossa, done in the sitting position, require close cooperation between team members, and a very good preparation of the anesthesiologist.

Key points: neurosurgery, gas empathetic, sitting position.

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JASMINA JAKUPOVIC SMAJIC (BIH)

Jasmina Smajić, born on December 14, 1972. in Dortmund, Germany. She finished primary and secondary school in Tuzla. She graduated from the Faculty of Medicine of the University of Tuzla in 2001. She worked as an intern at the Health Center Tuzla, and passed the professional exam in November 2002. Since January 2003. employee of the University Clinical Center Tuzla, at the Clinic for Anesthesiology and Reanimation. She passed the specialist exam in September 2008. and works as a specialist in anesthesiology with resuscitation. Subspecialist in intensive care medicine since February 2022. Fields of profe-ssional interest are adequate depth of anesthesia, transplant medicine, pain treatment, infection control, polytrauma treatment, intensive treatment. She received her master's degree on the topic "Assessment of the depth of anesthesia" in November 2009, and defended her doctoral dissertation on the topic "Clinical significance of coagulation parameters in the assessment of the systemic inflammatory response of the body of surgical patients" in February 2014. She holds the title of associate professor at the "Anesthesiology, reanimation and intensive care" subject at Medical Faculty University of Tuzla. Responsible teacher for the subjects "Emergency Medicine and "Pain Medicine" at the Faculty of Medicine of the University of Tuzla, and "Palliative Health Care" at the University "Džemal Bijedić" Mostar. Since 2019, primarius. From 2016 to 2020, head of the Department of Intensive Care Unit, and from December 2020, head of the Clinic for Anesthesiology and Reanimation. President of the Association of Medical Doctors of Anesthesiologists- Reanimatologists in the Federation of Bosnia and Herzegovina, and a member of the European Association of Anesthesiologists and Intensive Care Medicine (ESAIC – member of the Council of ESAIC in the period 2016-2021), ESPEN as well as the Obesity Society. As president of the organizing committee, she participated in the organization of several professional and scientific meetings, domestic and international workshops, seminars, symposia and congresses. Invited lecturer at national and international professional and scientific meetings. Author and co-author of several articles published in indexed journals, professional magazines, anthologies, author of 4 chapters in books, editor of one book and two handbooks. Member of the editorial board in two, and reviewer in several journals. Coordinator or team member of several domestic or international scientific research projects. Member of the commission for the specialist exam as well as the defense of the master's thesis and doctoral dissertation.

CHALLENGES WITH OBESE PATIENT

Obesity (lat. Obesitas) is a chronic disease that manifests itself by excessive accumulation of fat in the body and weight gain. Any weight gain of 10% or more than ideal is labeled obesity. On average, 7% of the world's population is obese. Lately, the incidence of childhood and adolescence obesity is on the rise. Pathophysiological changes in obese people range from respiratory difficulties and respiratory physiology disorders to the occurrence of many diseases. It is a well-known fact that obesity increases the risk of cardiovascular, respiratory diseases, as well as liver disease, and that leads to a change in metabolism. Preoperative preparation of the patient for bariatric, but also other surgical intervention, should be directed to the analysis of diseases that occur in obese people, and the implementation of treatment in order to reduce the risk of intra and postoperative complications. For bariatric surgical procedures, it is necessary to provide appropriate operating tables on which patients are positioned before the introduction to anesthesia. Due to the possibility of difficult intubation, before the introduction to anesthesia, it is necessary to adjust the patient to an adequate position.Ventilating a patient on a mask can be difficult. If ineffective ventilation on the mask blow an air into the stomach, increases the risk of regurgitation and aspiration during induction, and a quick introduction to the use of succinylcholine after adequate preoxygenation is recommended. In patients who are expected to experience difficult intubation, it is recommended to use a fiebroptic bronchoscope for intubation. Extremely lipophilic substances, such as benzodiazepines and barbiturates, show a significant increase in volume distribution (Vd) in obese people, while weakly lipophilic substances have quite little or no change in Vd in obese people. Most intravenous anesthetics used for introduction to anesthesia are extremely lipophilic with a large Vd. Propofol is a hypnotic of choice for introduction to anesthesia of bariatric patients. During recovery, patients are positioned in bed with a headboard elevated 45° and continuous monitoring of pulse oximetry and arterial pressure. Continuous monitoring of electrocardiograms is indicated in patients who have significant cardiorespiratory comorbidity. In the early postoperative period, oxygen support is also indicated. For the rapid recovery of respiratory function and to prevent respiratory infections, adequate analgesia should be provided. Other measures of postoperative treatment include the implementation of thromboprophylaxis, the application of proton pump inhibitors and antibiotics according to the local protocol, and the maintenance of hydroelectrolyte balance. Selection and preparation of patients for bariatric surgical procedure is a complex process that requires a multidisciplinary approach and careful evaluation in order to maximally reduce the risk of intraoperative and postoperative complications.

Key words: obesity, bariatric surgery

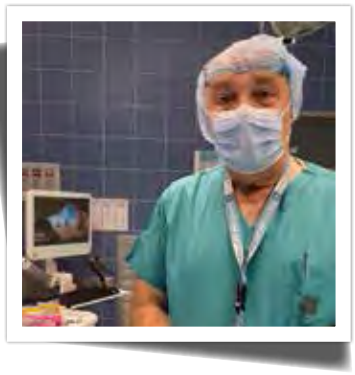
MIRJANA SHOSHOLCHEVA (MKD)

Prof. Mirjana Shosholcheva finished studies in Faculty of Medicine, University of "Ss. Cyril and Methodius" in Skopje, Republic of Macedonia. She served as Director of Department of Anaesthesia and Intensive care from 2001-2022 and Head of Cathedra of Anaesthesia and Reanimation, from 2013-2022. Her scientific fields of expertise are critically ill patients in intensive care unit, mechanical ventilation, brain death as well as organ donor management. Her long-term scientific research work is presented in 157 scientific research and professional papers reviewed so far, published in domestic and foreign reference journals.

She is the author of 4 textbooks in the field of anesthesiology as well as author and co-author of books and manuals for CME in the field of anesthesiology, resuscitation and intensive care. She is a participant in international scientific projects and chief researcher of domestic projects. She organizes and teaches at accredited schools, symposia, courses and professional meetings. She participates in both domestic and international congresses and symposia, with oral and poster presentations and introductory lectures. Prof. Mirjana Shosholcheva is a member of international professional associations, a member of ESAIC, ESICM and the founding committee of the Balkan Anesthesiology Forum (BAF). Since 2010 she is a member of the European Board of Anesthesiologists (EBA), a section of UEMS, where she has been actively working throughout this period in preparing European curricula for the specialization in anesthesia. In this body she works from 2012 as an accreditor of European symposia, congresses in the fields of anesthesia and intensive care.

As a representative of EBA, she accredits hospitals and training centers in European countries for specialists in anesthesia and intensive care from 2013. She has been ESAIC Council member from 2016-2020. Prof. Mirjana Shosholcheva is Vice-President of Macedonian Doctors Society from 2019 and Editor in Chief in Macedonian Journal of Anaesthesia, Journal on Anaesthesiology, Resuscitation, Analgesia and Critical Care.

At the 7th Macedonian Congress for Anesthesiology, Reanimation and Intensive Care, Dr. Mirjana Shosholceva will give a lecture on **"Artificial intelligence as a useful tool for personalized medicine: clinical applications in critical care settings"**.



PAUL ZILBERMAN (ISR)

Staff anesthesiologist at the Hadassah Medical Center in Jerusalem, Israel, Mount Scopus Campus. He has graduated the medical school in Romania, 35 years ago after what he moved to Israel back in 1995. He has done his Anesthesia residency in Israel. After a one-year fellowship in Canada, Toronto Western Hospital, returned to Israel to continue activity including at the present time. The basic formation of mathematics and physics in the high school helped him to get a better grip on several aspects of our activity as doctors in general and anesthesia in special. He was attracted by Low flow anesthesia due to its simplicity, logic, and wide relationship not only with medicine, but also environment protection and greening the OR, to mention only two of its important aspects. Started as a personal passion, the continuous study of the LFA brought him to present his initial ppt. from 2010, with different modifications in several countries around the world. The laryngeal mask airway came across my way not only as a novelty but as a lifesaving device. A few years ago, he saw the LMA Gastro (Teleflex) and his unchained thinking made the direct connection between this device and the bariatric airway management. He used it in the first five world bariatric surgeries known at that time. The same permanent curiosity brought him to space medicine. A vast field demanding tremendous financial resources but opening a large horizon for reading and investigating. The adaptation of the human physiology “both ways” and the medical implications for earth medicine and deep space travel attracted him like a “positive black hole”. All along the way he had the opportunity to meet great names in space explorations, deliver several basic presentations and last, but not least, be the medical mentor of a group of very talented school children, with big dreams!

BASIC PHYSIOLOGICAL CANGES IN SPACE FLIGHT

Space travel has started more than half a century ago.

Technological advances allowed gradual expansion of medical knowledge too. How do people breathe in a closed environment? What and how do humans eat, drink, sleep, pass urine and feces, keep the closed environment germ free, re-adapt to earth life conditions…all these questions are in studied all the time and new discoveries appear with each mission.

It is captivating to understand how in a matter of about 10 minutes a human's body, developed for millions of years to behave in 1G gravity, adapts and survives in complete different conditions

Changes in our body start within the first hours in space and continue for several days. Others continue indefinitely and need permanent countermeasures.

The lungs and rib cage, for instance, change conformation and mechanics, leading to gas exchange modifications. And still astronauts breathe.

The cardio-vascular system changes as well. The Staling law doesn't apply like on earth as there is no pressure gradient. The heart's shape changes too. And still astronauts live.

What about the eyes and ears? The brain?

Many other changes follow. And yet humans survived in space for six months and more.

СЕСИЈА 7 / SESSION 7

ISIL OZKOCAK TURAN (TUR)

Dr. Işıl Özkoçak Turan completed her specialty programme in Dept. of Anesthesiology and Reanimation of Gazi University School of Medicine in 1993. In 1997, she made observations on Neuroanesthesia, Neurointensive Care and Outpatient Surgical Anesthesia at the University of Pittsburgh School of Medicine, USA. She received her title of professor in Anesthesiology and Reanimation in 2009 in Bülent Ecevit University School of Medicine, Zonguldak. She has over 100 international and national publications with more than 1000 citations, and is the author of numerous books and book chapters as a publication editor and translation editor. She currently works as the Director of General ICU MH3A3 in Ankara Bilkent City Hospital which is affiliated to Health Sciences University Gülhane School of Medicine.

INTRACRANIAL HEMORRHAGES: STILL DILEMMAS FOR THE CLINICIAN

Işıl Özkoçak Turan, Prof.MD - S.B.U. Dept. Anesthesiology and Reanimation
Ankara Bilkent City Hospital General Critical Care Clinic

Introduction: In a classical dilemma, the person needs to select a choice between two or more alternatives that are seemingly equal. As a clinician, anesthesiologist often deals with dilemmas in the clinical practice. The reasons of intracranial hemorrhages (IKH) are hypertension, AV malformations, ruptured aneurisms, coagulopathies and neoplasms. During the care of these patients in the ICU, anesthesiologists are faced with the decisions which may effect the outcome of the patients. Some of these situations are summarized below:

1. Will the clinician lower the arterial blood pressure?
2. How can the clinician control the coagulopathy?
3. Why surgeons do not always accept to operate these patients?
4. When will the clinician use antiseizure drugs?
5. When will the clinician have to start prophylaxis of deep venous thrombosis (DVT)?
6. How can the clinician predict the mortality of the patient?
7. Should the clinician use high O2 levels for a better care?
8. Can the clinician predict serebral vasospasm and delayed cerebral ischemia (DCI) ?
9. Should the clinician measure intracranial pressure for good outcome?
10. Will the clinician use barbiturate coma routinely?

Conclusion: When the clinicians are faced with the clinical dilammas, they have to be updated with the new guidelines and evaluate their ICH patients individually. In ICH patients, arterial blood pressure control is crucial in the early period of ICH (No lower then 130 mmHg). The reversal of anticoagulation in ICH patients needs early awareness and have to be performed according to latest guidelines and patient's medical condition. DVT prophylaxis should be started with low dose in 24-48 hours when it is confirmed that bleeding is not increased. Hyperoxia has to be prevented (PaO2< 120mmHg). ICP monitoring may be useful for better outcomes. Monitoring cerebral vasospasm may be helpful, but there is no gold standard and certain evidence.

Ref. 1. 2022 Guideline for the Management of Patients With Spontaneous Intracerebral Hemorrhage: A Guideline From the American Heart Association/American Stroke Association. Greenberg SM, Ziai WC, Cordonnier C et al. 2022; 53: e282-e361.

RUDIN DOMI (ALB)

Prof. Dr. Rudin Domi, finished studies in Faculty of Medicine, University of Tirana, in 1998. During 1999-2003 he finished his residency in Anesthesiology and Intensive Care Medicine in Tirana, Albania. He served as Consultant Anesthesiologist-Intensivist close Service of Anesthesiology and Intensive Care Medicine in "Mother Teresa" University Hospital Center in Tirana, Albania. During the period 2003-2004 he got the title "Master in Pharmacology". In 2010 Prof. Domi got his PhD and in 2014 he became Associated Professor in Anesthesiology and Intensive Care Medicine. Prof. Domi became full Professor in 2019. Prof. Dr. Rudin Domi served as part time lecturer close Faculty of Medicine from 2003, and from 2010-2020 especially in Service of Anesthesiology and Intensive Care Medicine. From 2020 Prof. Domi is full time professor in Service of Anesthesiology and Intensive Care Medicine, University of Medicine in Tirana, Albania. Prof. Dr. Rudin Domi is author and co-author of 37 articles and 128 oral posters and lectures in Albania and abroad. Prof. Dr. Rudin Domi served as Editorial Member in several journals, and as a reviewer as well. Prof. Dr. Domi is former Albanian Council Member in European Society Aanesthesia and Intensive Care (ESAIC 2017-2022), former Albanian NASC representative (ESAIC 2021-2022), board member of ASAI, board member of Albanian Association of Cardiothoracic Aesnthesiologist (AACTA), president elected of Albanian Ssociety of Intesive Care Medicine (ASICM), and Board Director Member of Balkan Anesthesia Platform (BAP). His clinical expertise if focused on organ protection during anesthesia, intensive care medicine, anesthesia in adrenal gland surgery, cardiac anesthesia, and liver/kidney transplantation.

PEDIATRIC NEUROSURGERY ANESTHESIA CONSIDERATIONS

Introduction: Anesthesia for pediatric neurosurgery presents a unique challenge. There are several issues to address as pediatric neurological evaluation, sitting position, airway management, and peripheral/central venous access. The anesthesiologist must have good knowledges about pediatric neurodevelopment age-related features, hemodynamic variables, and the surgical procedures.

Methods: I will present the recent literature on this kind of patients, and the experience of my institution during the period 2020-2023. The posterior fossa is a common site for neurosurgical lesions in infants and children since 50% of tumors in pediatric age are located there. Posterior fossa lesions removal is mainly done in sitting position. This position has some consequences as reduced cerebral flow, hypotension, venous air embolism. Optimizing cerebral perfusion and oxygenation, prevention of air embolism is of great importance. Patients in the prone position are at increased risk for intraoperative airway complications. These include kinking and dislodgement of the orotracheal tube and macroglossia from pressure injury and herniation through the mouth. Venous airway embolism is rare in children undergoing neurosurgical sitting position procedures. Posterior fossa surgery seems to have the most difficult combination: pediatric age, difficult position, difficult ICU care, and difficult surgery approaches. After surgery is accomplished, the pediatric patients must be carefully evaluated to ensure normal recovery from anesthesia.

Results: During the period 2020-2023 in my institution has been made 20 cases in sitting position for posterior fossa surgery, 12 cases in supine position, and 3 cases in prone position. So, in total 35 pediatric cases, out of 875 neurosurgical cases in total. The patients' ages were from 3 months till 16 years old. The patients were extubated in ICU and discharged in ward the next day.

Conclusion: Knowledges about age-dependent variables and the variability of anesthetic administration in pediatric patients seems to be crucial to minimize complications and decrease perioperative morbidity and mortality.

IGOR LAZIC (SRB)

After graduating from the Faculty of Medicine at the University of Belgrade, he graduated from the reserve officers' school at the Military Medical Academy as the first in 98th class. From 2011 at the Anesthesiology with reanimatology and intensive care Center of the Neurosurgery Clinic of the University Clinical Center of Serbia (UKCS). Completed specialization in the period 2015-2019 with excellent success. From 2022 on doctoral studies in the field of neuroscience, as well as subspecialization in Intensive Care Medicine. From 2022 clinical assistant in teaching at the Department of Surgery and Anesthesiology of the Faculty of Medicine in Belgrade. Participant of highly specialized operations and procedures from which are singled out awake craniotomy and operations on tumors of the posterior cranial fossa in children and adults in a sitting position. Also he is participated in the first procedures performed in Serbia - deep brain stimulation and selective dorsal rhizotomy. He is a member of the transplantation team of the UKCS since 2015.

Training: Radiofrequency Ablation of Peripheral Nerves Course, Ultrasound in Trauma Course, Study stay at Acibadem Istanbul at the Department of Pediatric Neurosurgery and others. Author and co-author of over 20 professional papers in the field of neuroanesthesiology. Co-author of two chapters in the official textbook intended for anesthesiology residents. Reviewer of the journals Frontiers in genetics and SJAIT. He takes regular active and passive participation in domestic and international congresses. Membership in SLD, UAIS, EANS, ESPA.

ANESTHESIOLOGICAL APPROACH TO AWAKE BRAIN SURGERY

Igor Lazić [1,2], Tijana Nastasović [1,2], Saša Knežević[1,2], Marija Rakonjac [1], Milica Minić [1]
[1] Center for Anaesthesia and Resuscitation, University Clinical Center of Serbia
[2] Faculty of Medicine, Belgrade University, Serbia

Abstract

Awake brain surgery is a gold standard of care for resection of alterations located within or close to the eloquent areas. This procedure requires a highly cooperative and psychologically prepared patient and medical experts closely specialized in this field. The most common choice of anesthesiological technique is a combination of scalp block and short-acting anesthetics in order to ensure a functional and pain-free patient at the crucial moment - the awake state of the patient. Monitoring the depth of anesthesia, cardiovascular and respiratory functions must be continuously applied in every phase of the operation. Complications during the procedure are seizures, hypertension, respiratory depression, nausea, vomiting, mild brain swelling.and inability to perform the procedure until the end of the operation. Awake brain surgery reduces the possibility of neurological deficits, postoperative pain, nausea and vomiting, complications related to general anesthesia and mechanical ventilation, as well as the number of in-hospital days of patients.

СЕСИЈА 8 / SESSION 8

FATMA SARICAOĞLU (TURKEY)

Prof. Dr. Fatma Saricaoglu was born in 1969 in Ankara. Married and she has 2 children (twins). Prof. at Hacettepe Iniversity Dep. of Anesthesiology and Reanimation, Ankara. Education: Gazi University Medical Faculty Ankara: 1993. Hacettepe University Dep. of Anesthesiology and Reanimation, Ankara: 1994-1999. Hacettepe University Dep. of Anesthesiology and Reanimation, Prof: 2012. Giessen University Germany and Zurich University in 2006. Pain Medicine subspecialist: 2012.

General Secretary at Anesthesiology and Reanimation Specialist Society: 2010-2016. General Secretary of Society of Regional Anesthesia: 2016-2019. President of Regional Anesthesia Society 2022-2025. General Secretary of Turkish Anesthesiology and Reanimation Society 2021-2023. ESRA Council of Turkey 2019-2022. ESRA Executive Board member 2022-.

PERIPHERAL NERVE BLOCKS IN ADULTS AND PEDIATRICS

Peripheral nerve blocks are frequently used in adults and children to offer anesthesia or pain relief for a variety of surgical operations or medical disorders. However, their application and concerns differ between these two populations.

Peripheral Nerve Blocks for Adults

Anesthesia and Pain Management: In adults, peripheral nerve blocks are frequently used as an adjuvant to general anesthesia or as the primary form of anesthesia for specific procedures. They can also be used to treat postoperative pain, giving focused relief while minimizing the requirement for systemic opioids. Adults can have a variety of peripheral nerve blocks, including single injection blocks and continuous infusion blocks. These blocks can target individual nerves or nerve plexuses, depending on the surgical method.

Techniques: The techniques for doing peripheral nerve blocks in adults are well established, and they may include the use of ultrasound guidance or nerve stimulators to precisely detect and target the nerves. The dosing and concentrations of local anesthetics used in adult peripheral nerve blocks are normally based on adult pharmacokinetic parameters, however they may differ depending on the block and patient circumstances. Complications of peripheral nerve blocks in adults may include nerve damage, local anesthetic toxicity, infection, and hematoma formation. These dangers can be reduced by carefully selecting patients, using suitable techniques, and monitoring them closely.

Peripheral Nerve Blocks in Children

Considerations for the Pediatric Population: When doing peripheral nerve blocks in children, various aspects must be considered, including the child's age, weight, developmental stage, and any coexisting conditions. Anesthesia and Pain Management: Peripheral nerve blocks in children can be used for both anesthesia and postoperative pain management, with the goal of lowering pain and the need for systemic opioids while preserving the child's safety and comfort.

Monitoring and Safety: Pediatric patients must be closely monitored during and after peripheral nerve blocks in order to detect any signs of problems or adverse reactions early on. Pediatric patients may require specialised equipment and monitoring approaches to ensure their safety.

To summarize, whereas peripheral nerve blocks are used for anesthesia and pain management in both adults and children, their administration and considerations differ due to anatomical and physiological variances between the two populations. Careful consideration of patient characteristics, good technique, and close monitoring are required to ensure the safety and efficacy of peripheral nerve blocks in both adults and children.

FATOS SADO (ALB)

Prof. Ass. Dr. Fatos Sada, has been working in Clinic of Anesthesiology and Intensive Care since 2003, while as a regular academic staff at the Faculty of Medicine, University of Pristina "Hasan Prishtina", he started working in 2007 He graduated in the Faculty of Medicine in Prishtina, and also completed his specialization in the field of "Anesthesiology and Intensive Care" in University Clinical Center of Pristina. He was enrolled in postgraduate studies at the Faculty of Medicine, University of Pristina "Hasan Prishtina", and completed PhD doctorate in medical sciences. During this period, he published numerous works as an author and co-author in prestigious European magazines. He received major training abroad in the field of Anesthesiology and Intensive Care at two world-renowned centers, Cornell University, New York-Presbyterian Hospital, in New York, USA, and at AKH in Vienna, Austria. Trainings on teaching, new techniques, methodology, skills and communication with students are completed in Riga, Latvia, and in Brussels, Belgium, trainings organized by the European Association of Anesthesiology.

He is currently Vice Dean for Health, Faculty of Medicine, University of Prishtina. He is a full member of the European Society of Anesthesiology and the European Society of Respiratory Management.

EVOLVING OF THORACIC SPINAL SEGMENTAL ANESTHESIA

Fatos Sada[1]

[1] *Department of Anesthesiology and Reanimation, Faculty of Medicine/University of Pristina, Pristina, Kosovo*

Background: Thoracic spinal segmental anesthesia is a medical technique that involves targeting specific segments of the thoracic spinal cord to provide anesthesia for surgical procedures or pain management. In theory, spinal anesthesia can be performed at most of the thoracic and lumbar levels but is considered dangerous and it is not advisable if it is performed above the termination of the spinal cord e.g. lumbar vertebrae L2, because of the iatrogenic injury to the cord that can happen during the procedure.

Methodology: 10 patients with grade of American Society of Anesthesiology ASA III-IV diagnosed with co-morbid disease severe COPD and ischemic heart disease, performed was spinal anesthesia in the thoracic level (Th 10-12 and Th 4-6) while had to undergo operations e.g. laparoscopic cholecystectomy or radical mastectomy.

Results: In all of the patients successful analgesia was achieved with thoracic spinal anesthesia, and in none of them we didn't had to initiate general anesthesia. The drop in BP, HR, was lower than in spinal anesthesia in lumbar level.

Conclusion: Thoracic segmental spinal anesthesia, even not a routine procedure, and not explained as a procedure in anesthesia books, it might be a useful tool, to use it in certain cases (ASA III-IV), when general anesthesia is not a preferred option, or it is contraindicated.

Keywords: Thoracic spinal anesthesia, bupivacaine, aortae.

EMIL STOICOVSKI (MKD)

Dr. Emil Stoicovski is a specialist in Anesthesiology, Reanimation and Intensive Care since 2003. Since 2005 he is working in the Private Hospital "Zan Mitrev" as an Cardio vascular anesthesiologist providing care for patients undergoing cardiac and vascular surgeries. He has knowledge of TTE, TEE, Bronchoscopy, hemodiafiltration and Regional anesthesia as well. He took few educational visits and courses in the field of cardiac anesthesia and Neonatal anesthesia and ICU in Serbia, Slovenia and Germany.

CERVICAL PLEXUS BLOCK FEASIBLE ANAESTHESIA IN CAROTID THROMBOENDARTERECTOMY

Emil Stoicovski, Zan Mitrev Clinic, R. Macedonia

Carotid endarterectomy can be performed under general anaesthesia or under regional (deep, superficial, intermediate or combined) anaesthesia. Monitoring neurological function during cross – clamping of the carotid artery is one of the advantages over general anaesthesia. Which regional technique is safest, still it has been not established.

The Aim of this presentation is to present our experience with the use of the cervical block as a routine procedure in carotid thromboendarterectomy.

Since 2010, in the clinical hospital Zan Mitrev, we employ the combined cervical plexus block anaesthesia method. Cerebral oximetry was used in all patients to monitor the oxygen saturation of the brain.

During the presentation, we will explain the method of application 20ml 0,5% Bupivacaine + 10ml 2% Lidocaine to three locations on the posterior edge of the sternocleidomastoid in the projection C2, C3 and C4.

We have performed 475 carotid thromboendarterectomies in the last 20 years, out of which 58 under general anaesthesia and 417 under the cervical block. The patients who had cervical plexus block did not require any additional analgesia during the surgery. During follow-up, patients with cervical plexus block consumed significantly less analgesics than the patients having their surgery done under general anesthesia. We used Wong Baker faces.

Hypertension is a well-known symptom following a surgery especially in patents with general anesthesia. Most of the patients undergoing surgery for carotid endarterectomies were hypertensive preoperatively, but if cervical plexus block is used, the consumption of antihypertensive medications is very low.

In addition, the need for antihypertensive medications postoperatively in patients with cervical plexus block was significantly reduced.

We can conclude that cervical plexus block is feasible anaesthesia in patients with carotid thromboendarterectomy.

ALEKSANDAR DIMITROVSKI (MKD)

Aleksandar Dimitrovski is an experienced anesthesiologist with a diverse background spanning Regional Anesthesia, Anesthesiology, Emergency Medicine, Critical Care, and Healthcare Management. Holding a Doctor of Medicine (MD) degree from UKIM.Medicinski fakultet - Skopje, his dedication to healthcare excellence is evident throughout his career.

Currently practicing at the Department of Traumatology within PHI UC TOARILUC - KARIL, Dimitrovski specializes in regional anesthesia and Ultrasound-guided peripheral nerve blocks. Actively pursuing further education since 2014, he has attended numerous ESRA courses and workshops across several countries : Croatia, Turkiye, Hungary, Czech Republic,China, South Korea.

Engaged in academic endeavors, Dimitrovski is pursuing a PhD focused on the "Application of Erector Spine Block in Spinal Surgery," showcasing his commitment to advancing regional anesthesia through research.

Collaborating closely with colleagues, Dimitrovski is instrumental in introducing new regional anesthesia techniques into everyday clinical practice, notably benefiting pain medicine. With his wealth of experience and unwavering dedication, Dimitrovski is shaping the future of regional anesthesia and pain management.

BILATERAL ERECTOR SPINE BLOCK AS A PART OF MULTIMODAL ANESTHESIA FOR OPEN SPINE FUSION SURGERY

Complex spinal operations, which include open fixation of the spine, are followed by severe pain during the operation, as well as in the postoperative period. Severe postoperative pain leads to many complications: delayed patient mobilization, occurrence of venous thrombosis, respiratory and cardiovascular complications, prolonged recovery period and increased hospital stay, as well as reduced satisfaction of the patients after surgery. Inadequate treatment of acute postoperative pain is one of the main factors for the occurrence of chronic postoperative pain. Due to the severe intraoperative and postoperative pain in complex spinal surgeries, the use of high doses of opiates is bigger and their side effects are: opioid hyperalgesia and tolerance. There is a significant association with chronic use of opiates in the postoperative period and the occurrence of opioid addiction. Erector spinae plane block (ESPB) in spine surgery leads to reduced intraoperative and postoperative use of opioids, reduced postoperative pain intensity, reduced occurrence of postoperative nausea and vomiting, and bigger patient satisfaction. Multimodal analgesia is optimal in pain treatment in patients who undergo complex spinal surgery and provides good analgesia, decreased use of opioids and their side effects.We used Multimodal anesthesia protocol with Bilateral Erectror spinae plane block for treatment of pain during surgery and in the postoperative period. It showed that the need for opioids is significantly reduced during the operation and in the postoperative period and there was no need for opioids during postoperative period. None of the patients had PONV or other opiod related side effects, neither any other complication. The Bilateral ESP block as part of the multimodal analgesia protocol is very close to the optimal analgesia for patients who are planned for open spinal fixation.

СЕСИЈА 9 / SESSION 9

PREDRAG STEVANOVIC (SER)

Prof. Predrag Stevanovic is specialist in Anesthesiology and Intensive Care Medicine and Subspecialist in Pain Medicine currently working as a professor of Anesthesiology at University of Belgrade. He finished his PhD studies back in 2002. In his education beside the specialty training in Serbia he participated in few international education programs and has visited educational centers in the USA, Croatia, Slovenia, Austria, Italy and England. He participated in the Tempus project and from 2006-2009 took an education in Palliative and Pain Medicine in Italy. He was elected assistant professor in 1998. He was elected as a professor 2013 and again In 2019, he was chosen as a full professor at the University of Belgrade.He has published a total of 119 jobs, of which 28 are on the JCR list (cumulative IF 37,384. 4 papers in other journals are JCR list, 8 papers in Medline journals, 23 in magazines that are not indexed. He has published 5 more papers in journals of international conventions and 1 article as a whole in the collection of national conventions. In addition there are 31 extracts from international conventions, 19 from national conventions, 1 textbook 5 chapters in textbooks, 3 monographs and 12 chapters in monographs. He held numerous lectures by invitation to domestic and international buyers. He participated as a researcher and leader in 7 scientific research projects. For his pedagogic work, he has been rated highly anonymously from an abroad survey. Mentor, commentator and committee member: 6 doctoral dissertations, 5 specialist academic courses, 8 courses already specialized, 1 course specialist professional studies and 12 final theses.

EPIDUROLISIS

(PERCUTANEOUS EPIDURAL NEUROPLASTY WITH FORA-B CATHETER)

Predrag Stevanović, Nikola Vasilijević, Nemanja Dimić
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After the common cold, back pain is the second most common cause of absenteeism from work and the second most common reason for seeing a general practitioner. In the absence of more severe sensorimotor deficits, symptoms can be alleviated with conservative therapy in approximately 80% of patients over a period of about 6-10 weeks, to the extent that they can continue their normal life without specific treatment. In the remaining 20%, invasive procedures must be performed. One of them is epidural neurolysis as a minimally invasive treatment option before surgical sequestrectomy in case of disc herniation or other causes of compression. Epidural fibrosis occurs in about 10–30% of patients after open disc surgery, which in turn can lead to pain problems in the form of post-nucleotomy syndrome. The indication for spinal blocks (SB) is the diagnosis and treatment of significant radicular pain with or without radiculopathy, in patients who have not benefited from conservative therapy. More than 20 years ago, Racz and Holubec introduced a minimally invasive technique for the lysis of epidural adhesions and thus for the treatment of lumbosacral radicular pain syndrome [9]. This epidural adhesiolysis, also known as the Racz procedure, can reduce pain and mild neurological symptoms of disc herniation or post-nucleotomy syndrome without long recovery periods and can even avoid open surgery. This procedure enjoys worldwide popularity, partly because it is a relatively simple technique with adequate training. The basic theoretical and scientific basis of this pain is the occurrence of epidural adhesions and fibrosis, and nerve root adhesion leads to radicular pain. The precise mechanism of chronic pain with radiculopathy after adequate sequestrectomy or decompression has not yet been fully elucidated. Kuslich et al. investigated this in 193 patients who received LA in the epidural space after lumbar spine surgery. The results led the authors to hypothesize that sciatica occurs only when nerve roots have been compressed, swollen, stretched, or bound by scar tissue [10]. Indications for percutaneous epidurolysis are numerious.

MARKUS HUPPERTZ (GER)

Dr.med. M. Huppertz-Thyssen MHBA, DESAIC
Deputy Medical Director of St. Augustinus Hospital, Dueren, Germany since 2020. Director of Anaesthesia, Intensive Care, Emergency Medicine and Pain Therapy since 2017. Coordinating Director of the Anesthesia and Intensive Care Departments of JG group, Cologne, Germany since 2019. Diplomate of ESAIC and Examiner for EDAIC since 2022/23. Master- Degree (Thesis, MHBA) in Ecomics and Management 2016. Doctor- Degree (Thesis, Dr.med.) 2010. Deputy Director of Intensive Care & Pain Therapy, Klinikum Vest, Germany 2016-2017. Senior Specialist at University Clinic Muenster, Germany 2015. Deputy Director of Anaesthesia and Intensive Care, St. Marien- Hospital Dueren 2004- 2014. Specialist Degrees in Anaesthesia, Intensive Care, Emergency Medicine, Palliative Care, subspecializations in Antibiotic Therapy, Hospital Hygiene, Transfusion Medicine, Ultrasound in Anaesthesia.

EVIDENCE AND PREVENTION STRATEGIES

Nerve injuries associated to regional anesthesia are rare. Transitory neuropathy occurs in 1-3%, but permanent inju after central RA in < 0,04% and even more rarely after PNB (1). In children, with neuroaxial and peripheral blocks performed under GA, the risk of transient neurological deficits was 1,6- 3,6: 10000 and 0 - 0,4: 10000 for permanent neurological deficit (2). Early persistent paresthesias after PNB called postoperative neurological symptoms (PONS) are found in up to 15% but they resolve quickly in the vast majority of cases (3). Ultrasound is the superior method of choice to locate nerves and prevent LAST (4), but no evidence exists, that US prevents permanent nerve injuries (5). US fails to accurately distinguish between intra- and extraneural needle position (6,7). If nerve damage occurs, it is more often related to patient factors and surgical factors (type of surgery, positioning, traction, Tourniquet, postsurgical inflammation) than to RA (8-10). Careful patient selection is important, as preexisting conditions like alcohol and tobacco abuse or Diabetic neuropathy increase the risk of PNI 10fold („double or triple crush theory“) (3). A study by Welch et al. failed to link PNB as an independent risk factor for nerve damage, unlike neuroaxial anaesthesia (10). While mechanisms of PNI are described as mechanical, pressure- related, vascular and chemical, damage to the perineurium („blood- nerve- barrier“, Sunderland 1965) is crucial (3). Intrafascicular high- pressure injection leads to mechanical and ischemic PNI. Current US- imaging is not able to distiguish between intraneural- extrafascicular and intraneural- intrafascicular needle positions (11). As even intraneural- extrafascicular injections may lead to histological, subclinical damage, nerve expansion („swelling“) seen on US during injection should prompt needle repositioning to extraneural (12). „Dual Guidance“ is supported to minimize nerve injuries (3,9,13). Combining US with nerve stimulators to avoid nerve- needle contact („protective nerve stimulation“, 14 improves patient safety. Nevertheless, the safety threshold of 0,5mA without motor response or paresthesia, to correctly predict nerve contact, has been questioned (3,15-18). Furthermore, no comparitive studies on the incidence of permanent (> 1 year) nerve damage with USGRA vs. nerve stimulation vs. dual guidance have been published yet. As pressure- related and ischemia- related damage are closely linked, limiting injection pressure has been suggested (19-24). Subjective pressure evaluation („syringe feel“) is unreliable (25). Literature tells us that pressure monitoring is very sensitive but not specific for intrafascicular injections (needle contact to tendons, fascia etc.) whereas nerve stimulation is very specific for intraneural needle positions at low currents, but not sensitive enough (3,11). ASRA guidelines (26) and NYSORA textbooks (27) advocate for combining ultrasound, nerve stimulation and pressure monitoring („Triple Guidance“). These techniques are complemetary and no single best practice to avoid nerve injury is evidence-based. Unnecessary needle manipulations close to nerves should be avoided. Circumferential LA spread is not mandatory for successful blocks (28,29). A recent guideline (30) gives detailed advice on how to avoid nerve damage due to impaired coagulation (no neuroaxial blocks, no deep PNBs). All local anesthetics are neurotoxic to different degreest,

reduce neural blood flow and induce inflammation, leading to chemical injury (3,31). As this is dose - dependent, of USGRA, since studies found very low volumes required for successful blocks (32,33). Amide LAs are less toxic than Ester- LAs. Ropivacaine has the least neurotoxicity and causes less vasoconstriction than (Levo)bupivacaine (3). Adrenaline as adjunct worsens the reduction of nerve blood flow (34) while dexmedetomidine as adjunct attenuates perineural inflammation caused by LA (35). Most guidelines and textbooks advocate for nerve blocks in awake, conscious adults. Nevertheless, findings in children challenge this paradigm (2,36) and lead to controversy (37,38). Pain during injection does not reliably indicate nerve injury, but if it occurs, it must prompt cessation of injection and needle repositioning. Sharp, long bevelled needles penetrate the perineurium more easily than short bevelled needles (45°), which reduce the risk of injury (3,11). However, if a „blunt“ needle penetrates the perineurium, mechanical trauma and axonal damage is worse (39).Intrafascicular degree of trauma also depends on the needle diameter (Gauge) (40). Finally, much of the evidence on RA and nerve damage results from cadaver or animal models and case reports. Clinical outcomes are often more complex (39,40).

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Nerve injury by needle nerve perforation in regional anaesthesia: does size matter? Br J Anaesth. 2010 Feb;104(2):245-53. 41. Sondekoppam RV, Tsui BC. Factors Associated With Risk of Neurologic Complications After Peripheral Nerve Blocks: A Systematic Review. Anesth Analg. 2017 Feb;124(2):645-660. 42. Huppertz-Thyssen MH, Nikolic N. Ultrasound guided regional anesthesia: What we know, what we think we know, what we don't know yet: An educational narrative review of literature. SJAIT 2023; 45(3-4):41-55 Corresponding autor: Dr.med. Markus Huppertz-Thyssen MD, MHBA, DESAISt. Augustinus Krankenhaus Dueren , Renkerstrasse 45, 52355 Dueren, Germany markus.huppertz@ct-west.de

K. SANEM CAKAR TURHAN (TUR)

She was born in 1975. She has been graduated from Hacettepe University Medical School in 1999 and completed residency programme in Anesthesiology and ICU in 2005. She has taken degree of “Associated Professor” in 2016. She has been working as orthopedic surgery anesthesiologist in Department of Anesthesiology and Reanimation in Ankara University Medical School.

APPLICATION OF REGIONAL ANESTHESIA TECHNIQUES IN EMERGENCY ROOM and TRAUMA MEDICINE

K. Sanem Cakar Turhan, MD, Assoc. Prof.
Ankara University Medical School, Department of Anesthesiology and ICU

Musculoskeletal injuries are common in trauma patient and 60% of multiple-trauma patients with an injury severity score of ≥ 16 have an extremity injury of some type, and 18% have both lower and upper extremity injuries. Thus pain compromises 79% of the visits to emergency medicine and unfortunately undertreated. Undertreated acute musculoskeletal pain in emergency department causes posttraumatic chronic pain with an incidence of 77%. So the most important aspect of emergency care is to evaluate acute medical needs of the patients while providing effective pain control. However a term which is defined by Wilson and Pendleton in 1989, oligoanalgesia, which is inadequate use of methods to relieve pain, is an important problem in emergency department. There are several factors causing undertreatment of pain in emergency deparment such as inadequate pain assessment, physicians’ and patients’ concerns related to side effects of opioid based medications and dependency, fears of obscuring the diagnosis and sociocultural barriers.

For most patients, effective pain control could be achieved by administration of opioid based medications, but the potential short and long-term adverse effects of opioid based analgesia such as confusion, altered mental status, respiratory depression and hemodynamic instability are important concerns in the emergency setting. In recent years, demand of regional anesthesia in the emergency department has increased, involving ultrasound guided peripheral nerve and fascial plane blocks.

Regional anestheshesia in emergency department provides fast, effective analgesia; highly specific, localized pain control and anesthesia without side effects; improved ability to perform neurological asssessment; improvement in mobility and mortality; decreased length of hospital stay; lower hospital cost; elimination of the need for procedural sedation and high patient satisfaction.

СЕСИЈА 10 / SESSION10

NIKOLA JANKULOVSKI (MKD)

Previous functions:

• Rector of the Ss. Cyril and Methodius University in Skopje (2016-2020, 2020-2023) • Director of the University Clinic for digestive surgery (2007-2009); • Acting Dean of the Faculty of Medicine (April 2009 - September 2009); • Dean of the Faculty of Medicine, two terms, (2009-2016); • Board Member of Chamber of Evidence Experts of the Republic of North Macedonia (2013-present); • Member of the Board for selection of scientists of the "Ss. Cyril and Methodius" University showing best results in research activities for 2015 and 2016; • Member of the Board for the "Ss. Cyril and Methodius" Award in 2014, 2015 and 2016; • Member of the Commission for awarding the “Best Young Scientist" Prize (2013-2015); • Board Member of Health institution – Students' Out-patient Clinic of the Ss. Cyril and Methodius University in Skopje (2015-2016);• Board Member of the UKIM’s Congress Center – Ohrid Managing Board (2011-present); • A member of the UKIM Commission on Science in Skopje (2007-2009); • Member of the Board of forensic expert evidence at the UKIM Faculty of Medicine in Skopje (2009-present); • Member of the Personnel Committee of the UKIM Faculty of Medicine (2009- present) • Member of the Association of Coloproctologists of Yugoslavia (2003 -) • Member of the American Society of Abdominal Surgeons (2006-) • Member of the European Association of Digestive Surgeons (2008-) • Member of the Supervisory Board in CIRCO.

Scientific & research and educational activity:

• published more than 155 scientific papers and other publications in the country and abroad; • author of 2 manuals in the field of medicine; • Head / participant in 5 research projects.

Scientific field: • abdominal surgery.

Awards: • The "St. Kliment Ohridski "State Award in 2013 for outstanding contributions to health; • The "Dr. Trifun Panovski” Award, the highest award of the Macedonian Medical Association in 2015; • The "11th of October " State award in 2015 for lifetime achievement • Austrian Decoration of Honour for Science and Art • Knight of the National Order of Merit of the Republic of France.

ABDOMINAL COMPARTMENT SYNDROME

Abdominal compartment syndrome (ACS) is a serious condition that occurs when the pressure in the abdominal cavity rises above 20 mmHg and causes end-organ damage. Persistently elevated intra-abdominal pressures (IAP) can cause long-term organ dysfunction and can be potentially fatal if not promptly recognized and treated. Intra-abdominal hypertension and abdominal compartment syndrome have been increasingly recognized over the past decade as causes of significant morbidity and mortality among critically ill surgical and medical patients, nevertheless many cases of elevated IAP go unrecognized because a physical exam is not sensitive in detecting this condition; therefore, it is essential to understand the risk factors and associated treatments of IAP and ACS. Elevated intra-abdominal pressure can cause significant impairment of cardiac, pulmonary, renal, gastrointestinal, hepatic, and central nervoussystem function. The significant prognostic value of elevated intra-abdominal pressure has prompted many intensive care units to adopt measurement of this physiologic parameter as aroutine vital sign in patients at risk. A thorough understanding of the pathophysiologic implicationsof elevated intra-abdominal pressure is fundamental to 1) recognizing the presence of intraabdominal hypertension and abdominal compartment syndrome, 2) effectively resuscitating patients afflicted by these potentially life-threatening diseases, and 3) preventing the development of intra-abdominal pressure-induced end-organ dysfunction and failure. The currently accepted consensus definitions surrounding the diagnosis and treatment of intra-abdominal hypertension and abdominal compartment syndrome are presented.

ALEKSANDAR CHAPAREVSKI (MKD)

Born in 1960 in Skopje, is a professor at the Department of Surgery at the Faculty of Medicine in Skopje and an employee of the PJU UC for Neurosurgery Skopje. He is the author and co-author of numerous professional and scientific papers in the field of medicine that have been published in renowned international medical journals with an impact factor, and he has also published scientific chapters in books, published by world publishing houses.

SURGICAL AND ANESTHESIOLOGICAL CONSIDERATIONS IN POSTERIOR FOSSA SURGERY

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Abstract

Introduction: The posterior cranial fossa is a rigid compartment with poor compliance and the surgical access to the posterior fossa pathologies can be very challenging from surgeon's and anesthesiological pain of view. The sitting position offers better surgical access and in the same time can be challenging because of the risk for venous air embolism.

Objectives: To assess and evaluate the results and rate of postoperative morbidity from operative treatment of patients with posterior fossa tumors treated in sitting position.

Material and Methods: This is a retrospective study in which 52 patients were included which were treated in our institution from 2021-2023. We evaluated the localization of the tumor, patohysthological finding, signs of herniation, signs of infiltration of the brainstem, the presence of hydrocephalus and rate of venous air embolism.

Results: Between 2021/2023, a total of 52 patients were treated in our clinic. 63% were presented with a hemispheral tumors, 21% were presented with central, floccular tumors and 16% of the tumors were located in the pontocerebellar angle. 64% of the cases were metastatic tumors (NSCLC, breast carcinoma, ovarian carcinoma, GI tract carcinoma), 36% were primary tumors (medulloblastoma, ependymoma, pilocytic astrocytoma, pentocerebellar angle neurinoma, epidermoid tumors) of the posterior fossa. 34% required V-P shunting on admission, 25% required V-P shunt on postoperative follow-up. One patient developed postoperative pseudomenigocoelle which required second operation for reparing. The rate of intraoperative venous air embolism was 7%, most of them easily manageable, one surgery had to be terminated because of massive air embolism, 2 patients had tension pneumothorax which required thoracic drainage.

Conclusion: We observed lower incidence of intraoperative venous air embolism which can be easily manageable during surgery in majority of the cases. The rate of postop hydrocephalus was with lower incidence in patients with hemispheral localization of the tumor.

JORDAN SAVESKI (MKD)

He completed primary and secondary education in his hometown, and the Faculty of Medicine in Skopje, where he graduated in 1969. After graduation, he worked at the Surgical Clinic in Skopje. In 1976, he was selected as a junior assistant in the subject "Surgery". For one year he also worked as a general surgeon in a hospital in Libya, and in 1981 he was trained in America. In 1989, he was elected president of the Association of Surgeons of Macedonia, and elected head of the Traumatology Clinic in Skopje. He was the director of the Traumatology Clinic, and in 1995 he was appointed head of the Emergency Surgical Center in Skopje. He obtained the title of full professor of general surgery in 1996. From 1999 to 2004, he was the dean of the medical faculty in Skopje. He is the winner of the Order of Labor with a silver wreath, and in 2004 he received the '11 October' award for life's work.

HOW TO AVOID EARLY POSTTRAUMATIC COMPLICATIONS IN THE SURGICAL TREATMENT OF MULTIPLE FRACTURES IN POLYTRAUMA PATIENTS

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Background: Death after polytrauma has trimodal distribution. Immediate peak – seconds after very severe injuries where nothing can be done to save the life; second peak – minutes to hour (golden hour) from shock when with organized and effective resuscitation lives can be saved; third peak-after several weeks from systemic complications (ARDS, MOF, sepsis) sometimes caused by inappropriate surgical treatment.

Objective: To assess the clinical condition of polytrauma patient (stable, borderline, unstable or in extremis) to determinate end points of resuscitation and finally make decision about most appropriate surgical treatment in aim to avoid systemic complication which lead to death.

Methods: We analyzed retrospectively 94 polytrauma patients treated form 2011 to 2021 with stabilization of femur, tibia, pelvis, spine. All patients were evaluated and surgically treated by Hannover polytrauma protocol. Group A – 66, stable and operated by early total care (ETC) within 24 hours. Group B – 28, unstable treated by damage control orthopedic (DCO) surgery. End points of resuscitation status was determined by: clinical parameters (BP > 90 mm Hg, HR <90/min, urine output > 30ml/h) which are unsensitive and laboratory data (BE ≥ 6, lactate > 2,5), more sensitive. DCO included temporary fixation to avoid worsening of the patient's condition by the "second hit" of major orthopedic procedures and delayed definitive fracture repair, when the overall condition of the patients is optimized. DC resuscitation was undertaken in all patients.

Results: All patients in both groups survived. Patients in group B required significantly more fluids (14,2 l) than in group A (8,2 l). The patients in group B needed more blood 2,2 vs 1,31 in group A. There were more thoracic, abdominal and head injuries in group B. The incidence of MOF and ARDS was significantly lower in DCO - 7,4% , than in ETC - 12,1%. No significant differences were found regarding infections, delayed or non-unions. Conclusion: Determination of surgical priorities, extent of surgery and and optimal timing for fracture stabilization is essential in the treatment of polytrauma patients.

- ETC has an advantage in many polytrauma patients.
- DCO increases the chances for survival in hemodynamically unstable and patients with high risk.

ILIR HASANI (MKD)

Associate Professor Ilir Hasani was born on May 23, 1977, in Kumanovo. Having completed his primary and secondary education in the same city, he proceeded to enroll at the Faculty of Medicine at the "Ss. Cyril and Methodius" University in Skopje in 1994/95. His graduation took place in 2001, after which he completed the mandatory medical internship before being employed as a doctor in General Practice at a Private Health Institution. Progressing through academic ranks, he secured the position of junior assistant in 2006, advanced to an assistant in 2011, and further elevated his academic standing to an assistant-doctoral student in Surgery at the Faculty of Medicine, in 2015. In 2009, he became an elected national representative within the Joint Medical Committee of NATO forces. In September 2020, he served as the Deputy Minister in the Ministry of Health, and by June 2022, he assumed the role of Chief at the University Clinic of Traumatology. In May 2023, Prof. Hasani undertook the position of Vice President at the Kosovo College of Surgeons, and later in October, he was designated as the President of the Committee on Trauma within the International Association for Orthopedic and Traumatology Surgery. **Prof. Ilir Hasani actively engages in numerous national and international events, including congresses, symposia, conferences, seminars, and meetings, as an invited lecturer. His involvement extends to presiding, moderating, and participating in various scientific organizations. Additionally, he has made substantial contributions as an author and co-author to numerous peer-reviewed papers in both domestic and foreign professional journals and newsletters. In addition to his professional, linguistic, and technical prowess, he proudly holds esteemed membership in various prestigious medical societies. These include the Macedonian Medical Society and the Macedonian Society of Orthopedists and Traumatologists. Notably, he is a distinguished member of the International Association for Orthopedics and Traumatology Surgery, the AO Alumni Association, the AO Spine Association, the European Society for Trauma and Emergency Surgery (ESTES), the Spine Expert Group, the College of Surgeons of Kosovo, the Macedonian Red Cross Organization, and several other respected local, regional, and international associations.**

ENDOSCOPIC LUMBAR SPINE SURGERY. LOCAL VS. GENERAL ANESTHESIA – SURGEONS PERSPECTIVE

Ilir Hasani, Aleksandar Dimotrovski, Blagica Petreska, Rron Elezi, Artan Hajdari, Ismail Veliu, Fati Ebibi

Endoscopic spine surgery recently has become a very trendy tool to decompress spinal elements, reducing the invasiveness of the procedure, increasing the visualization of spinal elements, and decreasing the risk of iatrogenic injury. The procedure, due to the very small incision and tubular working channel, has the big advantage of being done under local anesthesia, which has been considered a huge priority of this method. Special anaesthesiology protocols have been introduced to support the surgeon in the critical moments of reaming when the pain is stronger. Local anesthesia enables us to work more freely, not being afraid of nerve root injury, because the awake patient himself does live and real-time neuromonitoring, which alerts us at every moment when we get close to the nerve root.

Regardless of all the priorities that local anesthesia offers us, the local endoscopy procedure is very difficult for both the patient and the surgeon. The psychological state of the patient in the operating room, the fear, and the expectation that there will be a lot of pain make the patient hyperexcitable. Patients with a low pain threshold, are very unsuitable for this procedure under local anesthesia. Therefore, we started to perform spinal endoscopy under general anesthesia, with high success and high patient satisfaction. Postoperative results were immediately noticeable, the learning curve quickly stabilized and the surgeon's comfort increased. With general anesthesia, during the entire procedure, we can do bone work, which we had limited during spinal anesthesia. Also with general anesthesia, we move further away from the neural structures, sticking close to the bony structures as a reference point, which also reduces the risk of injury to the neural structures. At the same time, we use intraoperative alternatively use neuromonitoring, which also increases the safety of the procedure.

RISTO CHOLANCHESKI (MKD)

Professor doctor Risto Cholancheski is a thoracic surgeon working in an educational center for over 30 years, at the Clinic for Thoracic and Vascular surgery at the University of Ss Cyril and Methodius in Skopje. After finishing the specialization in general surgery, he has continued to subspecialize in thoracic surgery at his clinic and various other thoracic centers in Europe, such as, Thoracic surgery educational center in Bergamo, Italy; Thoracic surgery center in Ljubljana, Slovenia; Metaxa Cancer Center in Athens, Greece; University Clinic for thoracic surgery Pécs, Hungary. Over the years, he has gathered various experience in general thoracic surgery and various aspects of specialized parts of thoracic surgery, especially lung cancer and thoracic trauma. He has worked abroad in Chest disease Hospital in Kuwait city, Kuwait. Beside his everyday work, he is actively involved academically at the medical faculty in Skopje, working as a professor of thoracic surgery.

He has attended numerous scientific gatherings, is actively participating in scientific work at his clinic, and has published over 50 papers. He is to this day, actively performing surgeries and working at the outpatient clinic at the department of thoracic surgery.

SURGICAL MANAGEMENT OF MULTIPLE RIB FRACTURES – FLAIL CHEST

Regarding the overall treatment of thoracic trauma with multiple rib fractures and flail chest syndrome, there is an ongoing debate in the past decade over the use of surgery in the treatment and management of thoracic trauma alone, or as a part of polytrauma. This paper/presentation represents the literature analysis of pitfalls of possible assessment mistakes regarding the role of multiple variables, which are underestimated when it comes the need of surgery or conservative treatment of such patients. This is an effort for our medical community to be informed and aware of the differences between non-surgical and surgical approach in a traumatized patient, regarding blunt thoracic trauma, based on the evidence of many trauma surgical centers around the world with mathematical analyses of a large number of gathered data during the last decade regarding big breakthroughs in the knowledge of physiological changes in the cardiocirculatory system during thoracic injury and the progress in technological possibilities for better overall assessment of traumatized patients, especially in a well-organized trauma centers with extensive ICU management. Having in mind the mentioned dilemmas, this paper represents the influence of a few important parameters as a starting point for fast and accurate decision-making process for surgical treatment of blunt thoracic trauma with all possible consequences of it.

SOFIJA PEJKOVA (MKD)

Sofija Pejkova is a Plastic and Reconstructive Surgeon at the University Clinic for Plastic and Reconstructive Surgery, Faculty of Medicine, in Skopje, Republic of North Macedonia. She completed her medical education at Ss. Cyril and Methodius University, graduating in 2000, followed by extensive training in trauma and general surgery. Pejkova specialized in plastic and reconstructive surgery, earning her subspecialization by 2014, and later obtained a Doctor of Medical Sciences degree in 2018. Her postgraduate training includes multiple clinical education stints at Medical University Vienna, focused on plastic and reconstructive surgery under renowned professors, and specialized courses in trauma surgery, hand surgery, and microsurgery across Europe. Pejkova has been involved in international research projects, including studies on surgical timing post-COVID-19, antisepsis in upper extremity surgery, and the effects of platelet-rich plasma on nerve regeneration. She has contributed as an author and co-author published papers in medical journals as well as to textbooks on surgery. Pejkova is an active member of several prestigious medical associations, including the American Society of Peripheral Nerve Surgery, Macedonian Association of Plastic, Reconstructive and Aesthetic Surgeons, Federation of European Societies of Surgery of the Hand. Her professional focus includes hand surgery, peripheral nerve surgery, and implementing innovative reconstructive techniques and educational methods in microsurgery.

WALANT SURGERY: A GAME-CHANGER IN ANESTHESIA AND BRIDGING THE GAP BETWEEN SAFETY, EFFICIENCY, AND PATIENT COMFORT

The field of plastic surgery is filled with a continuing search for advancement. One such advanced modality is the Wide-Awake Local Anaesthesia No Tourniquet (WALANT) technique, the forerunner to provide the safest and most efficient patient-centred care. This technique enables doing upper and lower extremity surgery without a tourniquet or general anaesthesia by utilizing a mix of lidocaine and epinephrine to minimize bleeding. Perhaps the key to WALANT is how it enables safer surgeries while leaving the patient conscious for real-time feedback. This instant and constant interaction of surgeon-patient is quite valuable in further developing surgical accuracy, in patient-focused paradigms of healthcare.

Tourniquets, the traditional equipment used for the purpose, have been effective in the management of maintaining bloodless surgical field. However, their use has been associated with complications such as compartment syndrome, damage to the nerves, and increased postoperative pain. WALANT reduces these risks by offering an alternative way of performing the extremity surgery. The wide array of surgical operations that can be done with WALANT, especially in reconstructing the skin and soft tissues of the extremities, only shows that this technique can be method of choice through which surgical operations are done. Comparative studies with conventional methods validate its ability to preserve operative duration while diminishing complications and augmenting patient satisfaction.

WALANT approach represents one of the most revolutionary steps in surgery, providing a safety, efficiency, and patient comfort. The use in plastic surgery strongly gives evidence to the ongoing innovations that lead to new standards for extremity reconstructive procedures. To the extent that this approach is further accepted, it will only solidify that the approach is now an integral part of continuous adaptation in surgical techniques aimed at minimizing risk and maximizing patient gain. Transitioning to WALANT is a corner move in plastic surgery from traditional approaches to some newer, patient-centred strategies. That would mean an immense stride ahead: the right amalgamation of safety, efficiency, and patient comfort. Its use in plastic surgery does not only highlight cutting-edge innovation but does one better by initiating new benchmarks in surgical options. As WALANT is generalized, it reiterates a never-ending development of armamentarium of surgical techniques to favor risk reduction and improved patient experiences.

ПОСТЕР СЕСИИ
КОНГРЕСНА САЛА „БИЛЈАНА“

POSTER SESSIONS
CONGRESS HALL “BILJANA”

Здружение на Лекари по Анестезиологија, Реанимација и Интензивно Лекување

VII МАКЕДОНСКИ КОНГРЕС ЗА АНЕСТЕЗИОЛОГИЈА, РЕАНИМАЦИЈА И ИНТЕНЗИВНО ЛЕКУВАЊЕ

MACEDONIAN CONGRESS OF ANAESTHESIOLOGY, REANIMATION AND INTENSIVE CARE MEDICINE

АНТИЧКИ ТЕАТАР

AMPHITHEATER

SESSION 1 - GENERAL ANESTHESIOLOGY

CARBON DIOXIDE EMBOLISM DURING LAPAROSCOPIC CHOLECYSTECTOMY: A CASE REPORT

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Introduction: Well recognized are the advantages of laparoscopic surgery over the open surgery: minimally invasive techniques, less pain and bleeding as well as shorter hospital stay, rapid recovery, and fewer postoperative complications. However, there is a complication exclusive for the technique namely carbon dioxide pneumoperitoneum insufflation. Massive carbon dioxide embolism is a rare complication, 0,001-0.59% of all laparoscopies, but with potentially fatal rate of 28%. Its most common cause is inadvertent injection of CO2 into a large vein, artery or solid organ. Usually, occurs during or shortly after insufflation of CO2 or from intravascular insufflation during surgery. Clinical presentation of CO2 embolism ranges from asymptomatic to neurologic injury, cardiovascular collapse or even death, dependent on the rate and volume CO2 entrapment and patient condition.

Case report: We present a case of CO2 embolism during laparoscopic cholecystectomy. Shortly after the insufflation we observed a sudden drop of end-tidel CO2 to 20 mmHg, drop in oxygen saturation to 87%, decrease of systolic blood pressure to 80 mmHg with bradycardia of 45/ min. A "mill-wheel" murmur was auscultated over the precordium. The surgeon reduced the pneumoperitoneum pressure, the fraction of inspired oxygen was increased to 100% with 5 cm H2O of PEEP and hyperventilation was maintained. We administered Atropine 1 mg and Ephedrine 9 mg., to rise heartrate and to maintain SBP above 90 mmHg. Hemodynamic status stabilized after half an hour, and the surgery was completed. Postoperatively, the patient was oxygen-dependent for two days, otherwise recovered well, without complications.

Conclusion: A carbon dioxide embolism is a possible complication of laparoscopy that should be promptly recognized otherwise could be fatal. Vigilant monitoring and providing hemodynamic stability in such an emergent case is more than essential.

Keywords: Carbon dioxide embolism, Laparoscopy, Pneumoperitoneum.

ANESTHETIC MANAGEMENT OF A PATIENT WITH HEMORRHAGIC SHOCK AND SUSPECTED MESENTERIC VEIN THROMBOSIS

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Introduction: Haemorrhagic shock is a life-threatening medical condition characterized by inadequate tissue perfusion due to significant blood loss. It typically occurs as a result of acute bleeding from various sources such as trauma, gastrointestinal bleeding, or ruptured blood vessels. Significant loss of intravascular volume may lead sequentially to hemodynamic instability, decreased tissue perfusion, cellular hypoxia, organ damage, and death. (1)

Material and methods: We present the case of a 71 years-old female patient with a history of hypercoagulability and recent initiation of thromboprophylaxis with Enoxaparin presented to the emergency department with severe left abdominal pain and signs of haemorrhagic shock TA 74/36mmHg, HR-95/min, SpO2-94%. Laboratory investigations revealed abnormal coagulation parameters and evidence of hyperfibrinolysis .A significant hematoma was detected intraoperatively within the left rectus sheath, indicating rectus sheath hematoma (RSH). The hematoma was actively bleeding, contributing to the patient's haemorrhagic shock. Upon arrival in the operating room, the patient's hemodynamic instability necessitated rapid sequence induction to secure the airway and initiate invasive monitoring.

Anaesthesia was induced with ketamine and succinylcholine, followed by maintenance with a balanced anaesthesia technique consisting of inhalational agents and intravenous opioids to maintain hemodynamic stability and provide adequate analgesia. Fluid resuscitation and transfusion therapy were closely monitored intraoperatively in order to rectify coagulopathy and restore intravascular volume.

Discussion: Rectus sheath hematoma is a relatively uncommon entity that is most often associated with abdominal wall trauma or anticoagulation. Rectus sheet hematoma is a rare but potentially serious condition that requires prompt recognition and intervention. Aesthetic management should focus on optimizing hemodynamic stability, ensuring adequate pain control, and minimizing perioperative bleeding risk. A multidisciplinary approach involving anaesthesiologists, surgeons, and haematologists is essential for the successful perioperative care of patients with RSH. (2) In our case, it was effectively accomplished.

Conclusion: Intraoperative discovery of RSH during the anaesthetic management of haemorrhagic shock in patients with suspected mesenteric vein thrombosis and hypercoagulability poses significant challenges. Effective communication and collaboration between anaesthesia and surgical teams are essential for timely recognition and management of this rare but potentially critical complication. This case underscores the importance of a multidisciplinary approach in optimizing patient care and outcomes in complex clinical scenarios.

OPTIMIZING ANAESTHESIA FOR WHIPPLE SURGERY IN HIGH-RISK GERIATRIC PATIENTS

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The Whipple procedure is an operation with a high complications rate but feasible in elderly patients.It has risks: bleeding,infection,leakage from where the pancreas or bile duc connect,diabetes.In elderly can be difficult due to high comorbiditetes and limited survival.
We present the case of a 80-years-old male patient with a complex medical history: two previous coronary artery bypass graft (CABG), aortic valve implantation,carotid artery endprosthesis,hypertension.He was admitted for elective Whipple surgery. Despite coagulation abnormalities precluding epidural catheter placement, general anaesthesia was carried out in a combination of multimodal anesthesia and regional blocks.Metamizole and magnesium sulfate were included in the multimodal anesthesia. Only 30mg of rocuronium was administered before intubation, and during surgery, two additional doses of 10mg of rocuronium were administered. Adequate intraoperative analgesia obviated the need for further fentanyl administration. Comprehensive perioperative pain management was further enhanced by bilateral rectus sheath blocks with 5ml of 2% lidocaine and a transversus abdominis plane (TAP block) with 10ml of 0.25% bupivacaine on each side.Our patient remained hemodynamically stable.The patient was extubated immediately after the end of the surgical intervention.
Conclusion: Utilization of regional anaesthesia techniques -bilateral TAP block and rectus sheet block facilitated a smooth intraoperative course without compromising hemodynamic stability and pain control.Individualized perioperative care is crucial in this population. This case highlights the successful management of Whipple surgery in a high-risk elderly patient with a history of multiple CABG surgeries and other cardiovascular interventions.

Keywords: Geriatric Whipple surgery, Regional anaesthesia, Anesthesia managment

ACHALASIA AND ANESTHESIA

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Achalasia is a rare idiopathic disorder caused by neuronal degeneration of the myenteric plexus causing a hypertensive, non-relaxing esophageal sphincter. It is an extremely rare condition affecting only one in 100.000 people.In patients with achalasia anesthetic management proves a challenge given the greater risk of aspiration, so an careful preoperative and perioperative approach is needed.
We present the case of a 34-year-old female patient with trouble swallowing liquid and solid foods-dysphagia, dyspepsia, vomiting as well as significant weight loss. Esophagogastroscopy confirmed the diagnosis showing dilation of the distal esophagus. Preoperative evaluation showed no abnormalities however the patient reported a Hemophilus influenzae infection a month prior to surgery. Premedication consisted of metoclopramide and famotidine. The patient was placed in a Head Elevated Laryngoscopy Position (HELP) and a nasogastric tube was placed before induction to minimize the risk of aspiration. After preoxygenation a rapid sequence induction was done using midazolam, fentanyl, lidocaine, anti-twich dose of rocuronium, propofol and succinylcholine facilitating prompt endotracheal intubation to protect the airway. Laparoscopic surgery known as Heller cardiomyotomy with Dor fundoplication was performed. Surgery lasted 4 hours and an end tidal CO2 within normal ranges was maintained. The patient remained hemodynamically stable and was extubated right after surgery ended. Post operatively a nasal decongestant such as spray oxymetazoline and an antibiotic gentamicin were administered to decrease nasal secretion in the lower respiratory track.

Conclusion: It is of vital importance as anesthesiologists to recognize the risks of achalasia such as regurgitation and tracheal aspiration early on. Adequate preparation and additional intraoperative measures are crucial in ensuring the patient safety and lowering chances of aspiration complications.

Keywords: achalasia, aspiration, anesthesia management

OUR SOLUTION FOR ALLERGY NIGHTMARE: CASE REPORT

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INTRODUCTION: Target-controlled infusion (TCI) as a latest development in the field of total intravenous anesthesia, gives the anesthesiologist a choice to manage difficulties in anesthesia like allergic diathesis, malignant hyperthermia risk, severe PONV, need for neurophysiological monitoring and many more[1].

CASE PRESENTATION: A 61years old female patient was admitted in our hospital for elective removal of big cystic formation 15cmx10cm on left hepatic lobe. Her previous medical history revealed a severe allergic reaction during gynecological surgical intervention more than 10years ago. Allergy testing was obtained and showed positive reaction to many anesthetics including succinylcholine, rocuronium bromide, midazolam and diazepam and analgesic drugs like ketoprofen, tramadol and metamizole sodium. So a preoperative strategy for TCI anesthesia with propofol and remifentanil combined with epidural analgesia for postoperative pain management was planed. On the day of surgery, she was monitored with the following vital signs BP 174/86mmHg, HR 81bpm, SaO2 95% and than an epidural catheter was placed on Th9-10 level and tested. Afterwards induction with propofol TCI Cp 4mcg/ml on Schnider

model and remifentanil TCI Cp 6ng/ml on Minto model was made and she was intubated without any need for muscle relaxants. During surgery 10ml 0,125% bupivacaine and 50mcg fentanyl were applied epiduraly for perioperative and early postoperative pain management. Surgery lasted for 2hours and went uneventful, she was extubated pain free and transferred to PACU.

DISCUSSION: Even though TCI is defined as"ideal„ TIVA, it still remains as a challenge for anesthesiologists[2]. It gives the anesthesiologist great way to balance the anesthetics by titration-to-effect and permits rapid recovery, but also poses many risks like accidental awareness and hemodynamic instability[3].

KEY WORDS: Target-controlled anesthesia, Total intravenous anesthesia

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ANESTHESIA FOR LAPAROSCOPIC CHOLECYSTECTOMY IN THE LAST SIX YEARS IN GENERAL HOSPITAL STRUGA- OUR EXPERIENCE

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Introduction Following the latest technological findings for shorter anesthesia time, shorter hospital stay, minimal intraoperative trauma and faster recovery, laparoscopic cholecystectomy is a routinely done procedure in our hospital.

Objectives The aim of this article is to present our experience with general anesthesia in patients undergoing laparoscopic cholecystectomy, and in 70% of the cases managing shorter hospitalization, shorter anesthesia time (average 50 minutes) and lower hospital expenses.

Materials and methods In our hospital, in the past six years a total of 1473 (958 female, 515 male) patients underwent laparoscopic cholecystectomy, all of them under general anesthesia. Only 0.9% were converted into laparotomic cholecystectomy (13 patients).

All of the patients were hospitalized on the day of the surgery after 10-12 hours fasting. Every patient received standardized premedication with intravenously administrated amp. Famotidine 20 mg and amp. Midazolam 1 mg. Other drugs were administrated preoperatively depending on the comorbidities and vital signs.

Induction with propofol 2.0-2.5 mg/kg (depending of age and comorbidities), succinylcholine 1.0-1.5 mg/kg (depending of age and comorbidities), atracurium/ rocuronium 0.6-0.8 mg/kg and fentanyl 0.05 mg. For maintenance of anesthesia O_2, N_2O, sevoflurane and fentanyl were used. Intraoperative monitoring of: arterial blood pressure, pulse, EKG, SpO_2, $EtCO_2$. Antibiotic was given intravenously at the end of the surgery. Residual neuromuscular block was antagonized with prostigmine 2.5 mg and atropine 1.0 mg.

Postoperative analgesia was managed with paracetamol, NSAIL or tramadol. Postoperative nausea and vomiting were treated with amp. Metoclopromide 10 mg or amp. Zofran 2 mg.

Problems with gas insufflation occured in 50% of the patients with respiratory peak up to 36 mm H_2O and were re-

solved with modification of ventilation mode (from V-control to PCV-VG).

Conclusion This type of anesthesia has been proven as the best cost-benefit solutin, not only for our patients, but also for our hospital's capacities and expenses.

Key words: laparoscopic cholecystectomy, general anesthesia, shorter anesthesia time

COMPARISON OF SEVOFLURANE AND DESFLURANE ON EARLY RECOVERY PROFILES

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Abstract

Introduction The pharmacokinetics of desflurane and sevoflurane favor better intraoperative control of anesthesia and faster postoperative recovery. They have a lower blood/gas coefficient of isoflurane and halothane. Low fat/gas coefficient and low brain/blood coefficient of desflurane leads to early elimination leading to a faster awakening from anesthesia. This leads to faster return of cognitive function and faster discharge from PACU.

Objectives The purpose of this case report is to compare emergence time and time of return to cognitive function in two patients with general elective inhalation anesthesia, maintained with sevoflurane and desflurane respectively under standardized conditions.

Material and methods The case report included ASA I, II patients undergoing a colorectal abdominal pathology operation were randomly assigned to receive desflurane and sevoflurane using standard hemodynamic monitoring, Train of four (TOF) and Bispectral Index System (BIS) to determine the depth of anesthesia. The time required for extubation, eye opening, verbal response and modified Aldrete score 9 were recorded.

Results The results, expressed in minutes obtained in both patients demonstrate significantly shorter recovery times in the patient who received a desflurane inhalation anesthetic, compared to the patient who received a sevoflurane inhalation anesthetic when conducting general anesthesia. This is thought to be due to the faster kinetic profile of desflurane, leading to accelerated elimination in the patient.

Conclusion The case report underscores that the time required for early recovery from anesthesia is markedly shorter in the patient receiving desflurane compared with the patient administered sevoflurane anesthesia. This finding emphasizes the potential benefits of desflurane in optimizing perioperative outcomes, including faster emergence and cognitive recovery.

Keywords: desflurane, sevoflurane, inhalational anesthetics, emergence

ANESTHESIA FOR SPLENECTOMY – CASE REPORT

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Aim - The development and availability of diagnostic and therapeutic procedures allow greater safety in patients undergoing high-risk surgery. Splenectomy is surgical intervention with potential complications related with bleeding and impaired coagulation. The purpose of this paper is to show that the appropriate and the individual preoperative assessment of the patient, as well as involvement of multidisciplinary team in the process of entire treatment is very important to reduce the complications of this type of surgery.

Materials and methods – Case of 47 years old woman, admitted to hospital with palpable large abdominal mass, loss of weight in last 2-3 months and thrombocytopenia. On CT scan of abdomen was detected splenomegaly, with extremely large dimensions of the spleen. Laboratory tests were performed, revealed pancytopenia and reduced aggregation of platelets. A hematologist was consulted and on bone marrow biopsy, lymphoproliferative disease was not detected. Spleen biopsy was rejected, because of thrombocytopenia and diagnostic splenectomy was indicated by abdominal surgeon. The patient was prepared for elective surgery within a few days and corticosteroids and tranexamic acid was administered by recommendation of transfusionist. Platelets count was tested every day, but was not raised enough. The surgery was performed in general anesthesia, using midazolam, propofol, remifentanil and sevoflurane. During the surgery, patient was with stable blood pressure and heart rate. After spleen removal, thrombocyte mass was transfused. In postoperative period, the patient was treated for three days in intensive care unit and after platelets count increased and hemostatic test were normal, the treatment was continued on digestive surgery department.

Conclusion - This type of surgical procedure requires adequate preoperative assessment and anesthesia for better outcome. If potential complications are predicted and treated promptly, the risk of this type of surgery can be significantly reduced.

Key words: splenomegaly, splenectomy, thrombocytopenia, bleeding, coagulopathy.

ACHIEVING HEMODYNAMIC STABILITY DURING INTUBATION USING DEXMEDETOMIDINE BEFORE INDUCTION TO GENERAL ANESTHESIA

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ABSTRACT: Dexmedetomidine is widely used in the operating rooms and ICU circumstances of today. It is commonly utilized for light or conscious sedation, analgesia or weaning attempts from mechanical ventilation in the ICU settings. It provides hemodynamic and circulatory stability, while imposing light sedation and superficial analgesia during these procedures. This was our motive to provide a smooth course prior to intubation, in order to eliminate the post-intubation spikes in vital parameters.

INTRODUCTION: This case report tries to provide an answer to the common unwanted hemodynamic instability in patients that undergo general anesthesia induction.

CASE DESCRIPTION: We used Dexmedetomidine in titrated concentrations according to the patient's physiological status. The one we chose was an ASA=2 patient, that had moderate hypertension (20% above of the average referent value).

We used Dexmedetomidine in a dose of 1μg/kg, administered through a continuous infusion pump. We measured systolic, mean and diastolic blood pressure and heart rate in six time intervals: 5-10-15 minutes prior, and 5-10-15 minutes subsequent.

RESULTS: 1.1. Before intubation: The systolic, diastolic, MAP and hart rate gradually decreased in the 15 minute interval for approximately 8 units each

1.2 After intubation: The systolic, diastolic, MAP and hart rate decreased for approximately 10 units each.

CONCLUSION: Using a continuous infusion of Dexmedetomidine in a dose of 1μg/kg, we succeeded in establishing a smooth induction, without any drastic fluctuations in blood pressure during the peri-intubation process.

DISCUSSION: Dexmedetomidine allows for a greater stability during intubation in patient's perioperative hemodynamics. The results we achieved proves that using this pattern of induction, the patients can experience a safer and more stable induction in general anesthesia, if we have a moderately (ASA=2) hypertensive patient.

KEY WORDS: Dexedetomidine, Intubation, General Anesthesia, Hemodynamics.

COMPARING BISPECTRAL INDEX VS MINIMAL ALVEOLAR CONCENTRATION FOR ANAESTHESIA RECOVERY

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Introduction: Fast GA (general anaesthesia) recovery can prevent respiratory complications in patients post-surgery (pneumonia, atelectasis and postoperative morbidity). Monitoring the depth of anaesthesia intraoperatively using techniques like Bispectral Index (BIS) for Total Intravenous Anaesthesia (TIVA) and for GA with inhalation agents is essential for optimizing recovery.

Objectives: Comparison of two standard monitoring techniques, BIS vs MAC in order to asses which one provides more accurate information about the patient status and achieve faster anaesthesia recovery.
Methods and Materials: Ten patients undergoing GA with Sevoflurane inhalation were randomly assigned to two groups: Group A monitored with MAC&BIS (target BIS range: 40-60) and Group B monitored with MAC only (target range: 0.7-1.0). Patients were followed up by The Aldrete Scoring System which consists of 5 clinically relevant parameters reflecting physiological recovery from anaesthesia: muscle activity, respiration, haemodynamic stability, consciousness, and colour.
Results: Group A and group B were comparable with respect to age, gender, duration of surgery, duration of anaesthesia, and type of surgery. Median time to eye-opening was 4min in group A and 5min in group B ($P < 0.001$). The time to extubation was 8min in group A, compared to 11min in group B ($P < 0.001$). The time needed to achieve Aldrete's score of ≥9 was also shorter in group A ($P < 0.001$). No patients reported awareness during anaesthesia.**Conclusion:** BIS monitoring was associated with statistically significant early emergence from anaesthesia (time to eye-opening), a significant reduction in time to tracheal extubation after anaesthesia, and fast recovery as compared to MAC monitoring. We have established that BIS monitoring is superior to MAC monitoring in terms of time to eye-opening, extubation time, and recovery time.

Key words: Bisprectral Index, Minimal Alveolar Concentration, Recovery

SESSION 2 - REGIONAL ANESTHESIA

SCIATIC POPLITEAL BLOCK FOR POSTOPERATIVE ANALGESIA IN OBESE PATIENT (CASE REPOPPRT)

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Introduction: Analgesia should be used for all patients, including those with obesity. Regional block analgesia as model of opioid sparing analgesia is an excellent choice as a model for postoperative analgesia.

Case report: In our case we have a 34 young woman patient, with BMI of 35, who is suffered with severe postoperative pain. VAS score was (9,10). Patient has an operation of distal tibial fracture under GA. She received postoperative analgesia by protocol with no improvement, so we decided to provide Sciatic popliteal nerve block. Single shot injection of block is limited and to provide a prolongate duration of analgesia we use 0.5% of ropivacaine 20 ml and 2ml

of dexamethasone 4mg as adjuvants. We performed popliteal sciatic block with Stimulpex needle 50mm,22G under ultrasound guide. After 30min,she feels relief of pain. Pain score VAS(4-5),after 60min she have complete sensor, tested by pinprick method and motor block tested by modified Bromage scale .The pain score VAS (1), and she was discharge from the recovery unit. For the first 24h postoperative she receives 5mg of metamizole. The duration of motor and sensor block was 22h, with good patients' satisfaction.

Conclusion: our case report indicates, that regional block analgesia is suitable model for postoperative analgesia in obese patients where there is a greater risk of postoperative respiratory insufficiency and hypoxia, and where opioids pain treatment is limited.

Key words: sciatic popliteal nerve block, obesity, postoperative analgesia, severe pain, tibial fracture

PERIPHERAL NERVE BLOCKS AS A SOLE TECHNIC FOR INTRAOPERATIVE ANESTHESIA

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INTRODUCTION: Peripheral nerve blocks can be used to provide regional anesthesia for operations involving the upper or lower extremities, alone or combined with general or spinal anesthesia. The use of ultrasound optimizes the technique of peripheral blocks and the amount of local anesthetic used. Successful regional anesthesia for upper limb surgery is reliant on appropriate patient selection. Peripheral nerve blocks are advantageous in patients undergoing extensive surgery and those prone to postoperative nausea and vomiting, at risk of postoperative respiratory depression or intolerant of opioids. Primary patient exclusions are patient refusal, infection at the proposed nerve block site and local anesthetic allergy.

MATHERIAL: As a sole technique for intraoperative anesthesia, we used peripheral nerve blocks of plexus brachialis-interscalene or supraclavicular, in a few cases. General anesthesia was associated with high risk of intraoperative complications. These patients were admitted for upper limb surgery, and they had a lot of comorbidities.

CASES: The first case was a 39 years old male patient admitted for orthopedic surgery with dg Left cubital Contracture He had a history of car accident 1,5 years ago, and he was tracheostomized then. The second case was a 78 years old male patient admitted with Fracture of proximal part of left humerus, with history of HTA, AFF, COPD. General anesthesia and sitting position were with high risk of complications in this patient. The third case was a 72 years old male patient admitted with Laesio n. radialis reg cubiti for decompression, with history of HTA, AFF, Diabetes Mellitus.The last case was a male patient 48 years old, with diagnosis of Laesio ommae l.sin for arthroscopy and tenodesis BCL ommae. This patient insisted to be awake and to see the surgery. Our patients were stable during surgery and did not feel any pain.

CONCLUSION: In cases where General anesthesia is with high risks for patients, peripheral nerve blocks can be good choice for intraoperative anesthesia and postoperative analgesia.

Key words: Regional Anesthesia, Peripheral Nerve blocks, Brachial plexus block

REGIONAL SPINAL ANESTHESIA FOR OPEN COLPOSUSPENSION

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Background: Colposuspension is an operation for the treatment of stress urinary incontinence in women, during which

elevation and reposition of the bladder neck and surrounding vaginal tissues is performed. This intervention is performed using abdominal sutures, usually placed in the lower part of the abdominal wall. The operation can be performed both open and laparoscopic. In our clinic, these interventions are performed with an open technique and usually under general anesthesia.

Material and Methods: 21 patients were included in a period of 18 months. Spinal anesthesia was used in all of them as a type of anesthesia for performing the operation. Isobaric Bupivacaine 0.5% was used as a local anesthetic (dose 14-17 mg) with Fentanyl 0.02 mg and Morphium 0.1 mg. Standard noninvasive monitoring was applied to all patients, with oxygen mask 4-6 L and Midazolam 1-2 mg. Vasopressors Ephedrine and Phenylephrine were used to regulate hypotension. Paracetamol and NSAIDs were used for postoperative analgesia, any additional need for analgetics was noted.

Results: The patients age were between 48-70 years, height between 148-174 cm. 14 of the patients (66%) had hypertension (on regular treatment), 6 patients (28%) were with COPD/asthma –on regular therapy, 12 patients (57%) were smokers. Conversion to general anesthesia was not required in any patient. Drop in blood pressure on average 20-25% of the initial pressure. In two of the patients (9.5%), Ephedrine 6-9 mg i.v. was given for regulation of blood pressure. Heart rate was between 55-115 bpm, SaO2 97-100%. No additional need for analgetics in any patient.

Conclusion: Hemodynamic stability, minimal use of drugs intra and postoperatively, excellent analgesia without use of IV opioids, small number of complications make spinal anesthesia the first choice for this type of intervention.

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ULTRASOUND GUIDED BILATERAL RECTUS SHEATH BLOCK FOR AWAKE UMBILICAL HERNIA REPAIR

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Introduction: This abstract presents a case study where an ultrasound guided bilateral rectus sheath block is used for surgical anesthesia for umbilical hernia repair of 63 years old patient with high risk of general anesthesia. The patient's commodities such as arterial hypertension, chronic obstructive pulmonary disease, diabetes mellitus type I and risk of difficult intubation (Mallampati 3), were challenges for anesthesia care team demanding careful anesthesia plan in order to avoid risks from general anesthesia.

Case presentation: A 63 years old patient was presented for umbilical hernia repair. Due to patient's commodities and risk of difficult intubation, general anesthesia was avoided. Patient was sedated with Midazolam 1mg and Dexmedetomidine 1mcg/kg/h intravenously prior performing bilateral rectus sheath block. Ultrasound guided rectus sheath block was performed with 1% Lidocaine 10ml and 0.25 % Bupivacaine 10ml on each side. After 15min, the infusion rate of Dexmedetomidine was 0.5 mcg /kg/h. In addition to regional anesthesia, intravenously low dose of remifentanil 0.05mcg/kg/min Ketamine 25mg and Paracetamol 1gr was administered. The patient tolerated the surgery very well.

Discussion: Bilateral Rectus sheath block is used to provide somatic analgesia for surgeries involving the midline part of anterior abdominal wall. It can be used for periumbilical surgery, in order to avoid the risks from general anesthesia. Local anesthetic is applied between rectus abdominis muscle and posterior rectus sheath. With ultrasound guidance while performing rectus sheath block, we are avoiding risks for peritoneal puncture, visceral injury and bleeding (1).
Conclusion: Ultrasound guided bilateral rectus sheath block by applying 1% Lidocaine and 0.25% Bupivacaine on each side combined with intravenous analgosedation can be used for umbilical hernia repair, avoiding the risks from general anesthesia in a high risk patients.

Key words: rectus sheath block, umbilical hernia repair, high risk patients

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CORRELATION BETWEEN THE SPINAL NEEDLE USED FOR INDUCTION OF SPINAL ANESTHESIA AND POST SPINAL PUNCTURE HEADACHE

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Introduction Post dural puncture headache (PDPH) is one of the most common complications of spinal anesthesia. PDPH is a headache that occurs after spinal anesthesia, that worsens within 15 minutes from standing up or sitting upright, and gets better within 15 minutes from lying down. The reason for this is leakage of CSF from a dural defect and intracranial hypotension. Factors that increase the risk of PDPH include women, young people, and people with a lower BMI.

Objectives: The aim of this research is to discover if there is a correlation between the occurrence of PDPH and the size of the spinal needle used for induction.

Materials and methods: A study was conducted on 70 patients (30 female and 40 male) in our hospital, who underwent hernia repair surgery under spinal anesthesia. The patients ranged between 40 and 70 years old. The patients were premedicated with intravenously administrated sol. NaCl 0.9% 1000 mL and midazolam 1 mg. Selected at random, 20 male and 20 female patients underwent spinal anesthesia using a spinal needle Spinocan Quincke size 22 G, while the remaining 20 male and 10 female patients were anaesthetized using a spinal needle Spinocan Quincke size 25 G. All of them were induced with isobaric bupivacaine 4 cm3 and in the patients with anxiety, midazolam 1 mg and fentanyl 0.05 mg was administrated.

Results: Only two patients, both of them women (1.4%) had reported PDPH. Both of them received spinal anesthesia with spinal needle size 22 G and were treated conservatively with NSAIL, intravenous and oral fluid administration.

Conclusion: This study shows that there is a significant correlation between the size of the spinal needle that is used for spinal punction and the occurrence of post dural puncture headache. This can be useful for choosing the size of the spinal needle, especially in patients with a higher risk for this complication.

Keywords: spinal anesthesia, post dural puncture headache, spinal needle

RADICAL MASTECTOMY PERFORMED UNDER PEC BLOCK AND SEDATION IN A HIGH-RISK PATIENT: A CASE REPORT

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Introduction: Over the course of time, radical mastectomy under general anesthesia has been the most common surgical approach for breast cancer. (1) However, advancements in regional anesthetic techniques are broadening the role of nerve blocks beyond adjuvants to general anesthesia. (2) In patients considered as high risk for general anesthesia, the use of pectoral nerve (PEC) blocks can facilitate radical mastectomy under sedation. (2,3)

Case report: A 54-year-old female, with a diagnosis of breast carcinoma was admitted for radical mastectomy. Three years prior, the patient underwent laryngectomy and radiotherapy for laryngeal cancer, resulting in a permanent tracheostoma. While preoperative laboratory tests were unremarkable, chest X-ray identified bilateral pleural effusions. Considering the potential risks associated with general anesthesia, particularly respiratory complications due to pre-existing tracheostoma and radiotherapy-induced pulmonary fibrosis, the decision was made to proceed with radical mastectomy under a PEC block (I+II) with sedation. The PEC block was administered in the operation room under non-invasive hemodynamic monitoring. After successful sensory block was confirmed, sedation was achieved with intravenous administration of midazolam (1 mg) and fentanyl (50 mcg), followed by a continuous infusion of propofol, as well as supplemental oxygen. The surgical procedure lasted 60 minutes and was performed without any complications. Effective analgesia was achieved throughout the operation and the patient reported minimal to no pain in the recovery room. Postoperative analgesia was managed with Paracetamol and Metamizole. The patient maintained hemodynamic and respiratory stability throughout the perioperative period, and was discharged from the hospital on the 5th postoperative day.

Discussion: Although only recently introduced, PEC blocks have rapidly gained recognition for their safety and efficacy. (1) Demonstrating their potential even in high-risk patients, they offer several key benefits, including a lower risk of complications and predictable pain control for procedures involving the lateral and anterior chest wall. [2,4]

Key words: radical mastectomy, PEC block, sedation, analgesia

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BILATERAL ILIOINGUINAL NERVE BLOCK FOR CROSSOVER FEMORO-FEMORAL BYPASS SURGERY IN A HIGH-RISK PATIENT

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Introduction: This abstract presents a case study of a 65-year-old patient with high surgical risk due to severe calcified stenosis of the left main coronary artery at 95%, necessitating crossover femoro-femoral bypass surgery. The patient's significant cardiovascular comorbidity posed substantial challenges for the surgical and anesthesia care team. In response, a meticulous anesthesia plan was devised, with a focus on minimizing systemic effects and optimizing pain control.

Case presentation: Regional anesthesia technique involving bilateral ilioinguinal block was employed to manage perioperative pain preventing potential complications associated with general anesthesia. Bilateral ilioinguinal nerve block, consisting of 10 ml of bupivacaine 0.5% and 10 ml of lidocaine 2% administered on each side by ultrasound-guided needle served as the cornerstone of the anesthesia strategy. In addition to regional anesthesia, a very low dose of remifentanil (0.04 mcg/kg/min) was administered intravenously to provide supplemental analgesia during the procedure.

Discussion: The ilioinguinal nerve block effectively targeted sensory nerves innervating the lower abdomen and groin and this technique facilitated a comfortable intraoperative experience while avoiding the potential hemodynamic instability associated with general anesthesia in high-risk cardiac patients. This approach allowed for a balanced anesthesia plan, maintaining hemodynamic stability and optimizing pain management due to its effectiveness in providing targeted pain relief to the surgical site. The patient reported a consistent numerical pain rating scale (NRS) score of 2 out of 10 both 2 hours and 24 hours postoperatively, suggesting sustained pain relief following the ilioinguinal block procedure.

Conclusion: Overall, the successful application of ilioinguinal block and low-dose remifentanil in this case highlights the importance of individualized anesthesia planning in complex surgical scenarios. By tailoring the anesthetic regimen to the specific needs of the patient and the nature of the procedure, the anesthesia team achieved optimal perioperative care, ultimately contributing to a successful outcome for the patient.

Key words: crossover femoro-femoral bypass surgery, ilioinguinal nerve block, high surgical risk

SIMULTANEOUS BILATERAL RADIAL FRACTURE REPAIR: EFFICACY OF BILATERAL INFRACLAVICULAR BLOCK IN REGIONAL ANAESTHESIA

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ABSTRACT

Introduction: Regional anesthesia techniques have revolutionized modern anaesthesia practice by providing effective perioperative pain management while reducing the reliance on systemic analgesics. This report presents a case exemplifying the value of bilateral infraclavicular block in enabling simultaneous bilateral radial fracture repair.
Case presentation: A 51-year-old patient, a smoker, without comorbidities, underwent bilateral radial fracture repair in the operating room. We performed ultrasound-guided bilateral infraclavicular block using 10ml of lidocaine 1% and 10ml of bupivacaine 0.5% for each injection site, with the patient being continuously monitored and having an oxygen mask. Surgery commenced after 40 minutes, enabling simultaneous fracture repair. Remarkably, the patient remained conscious and pain-free throughout, eliminating the need for additional anaesthesia. This case underscores the efficacy and versatility of regional anaesthesia techniques in perioperative pain management and complex surgical interventions, representing significant advancements in regional anaesthesia practice.

Discussion: The successful outcome of this case highlights the effectiveness of regional anaesthesia in providing adequate pain control for upper extremity surgeries. Minimizing systemic opioid use, regional anaesthesia reduces the risk of adverse effects such as respiratory depression and nausea, particularly beneficial for patients with a history of smoking. Ultrasound-guided peripheral nerve blocks enable the use of lower doses of local anaesthetics, providing effective perioperative analgesia while minimizing the risk of systemic toxicity. This approach allows for the administration of multiple blocks in a single patient, but caution must be exercised to avoid maximal recommended doses of local anaesthetics. Compared to the supraclavicular nerve block, the infraclavicular nerve block presents fewer complications, making it a safer option. Additionally, both techniques have similar analgesic effects.

Conclusion: Utilizing ultrasound-guided nerve blocks allows us to avoid the need for general anesthesia and its associated complications, particularly beneficial for patients with multiple comorbidities, thus optimizing anesthesia techniques.

Keywords: Regional anesthesia, infraclavicular nerve block, ultrasound guided nerve-blocks, bilateral radius fracture, perioperative analgesia.

CERVICAL PLEXUS BLOCK AS AN OPIOID ALTERNATIVE IN PARATHYROIDECTOMY FOR PATIENTS WITH IMPAIRED KIDNEY FUNCTION

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Introduction: The aim of this case study is to demonstrate the successful application of cervical plexus block in the operative treatment of hyperparathyroidism in a patient with Chronic Kidney Disease. Furthermore the role of regional anesthesia in thoracic surgery will be discussed as an adequate pain management plan in patients with impaired kidney function. Cervical plexus blocks have been used in superficial neck and thyroid procedures, the plexus consists of anterior branches of the C1-C4 spinal nerves which provide motor and sensory innervation of the head and neck.
Case report: A 64 year old patient scheduled for elective parathyroidectomy, presents with elevated PTH and calcium levels secondary to CKD as well as elevated Urea and Creatinine. Bilateral cervical blocks were preformed using ultrasound guidance so that the tip of the needle is placed in the fascial layer underneath the Sternocleidomastoid muscle. An admixture of 5 ml of 0.5% bupivacaine and 5ml of 2% lidocaine with a total volume of 10ml per side was administered. The patient was induced with 2.5 mg diazepam, 100 mg lidocaine ,25 mg ketamine ,200mg propofol and 12 mg cisatracurium and subsequently intubated. Surgery lasted 1 hour and 15 minutes and the patient did not require any additional opioids throughout the whole procedure where the blood pressure and heart rate remained steady indicating that the patient was sufficiently anesthetized. Upon waking up from surgery the patient reported no pain - Score 0/10, 2 hours, 6 hours as well as 24 hours after surgery.
Conclusion: Cervical Plexus Block significantly lowers the need for other medications such as opioids and muscle relaxants. It could be an excellent alternative technique while providing analgesia in patients with co-morbidities such as CKD where medications should be used with greater caution.
Keywords: Cervical plexus block, Opioid free anesthesia, Parathyroidectomy

LOW CONCENTRATION-HIGH VOLUME LOCAL ANESTHETIC EPIDURAL INFUSION IN MAJOR ABDOMINAL SURGERY: CASE SERIES

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Introduction: Continuous epidural infusion contributes to the reduction of intraoperative and postoperative pain by reducing the use of opioids. We evaluated the effect of epidural infusion in major abdominal surgery both during and following the procedure, as well as the amount of postoperative opioid use.

Case series: We present five cases of major abdominal surgery performed under general endotracheal anesthesia combined with regional anesthesia provided by continuous epidural infusions of local anesthetics with low concentrations and high volumes. The cases are in the middle age range of 65 years. Patients induction in anesthesia was with Midazolam 0.03 mg/kg, Fentanyl 0.5 mcg/kg, Propofol 2 mg/kg, and Rocuronium 0.5 mg/kg. For the continuous

epidural infusion, we used Bupivacaine 0.125% with mean rate of volume per hour of 7.5ml/h. During surgical intervention in all patients, we didn't add any opioids, nor muscle relaxants at all. The VAS scale measured the patient's discomfort as they awoke from anesthesia. The mean VAS score was 2/10 points. Patients exhibited a shorter PACU length of stay and didn't receive intravenous opioids and analgesic drugs in the recovery room. No opioids were used in the postoperative period.

Discussion: Epidural infusion in major abdominal surgery is the right choice for patients. It makes waking up easier, without pain. This contributes to a shorter stay in the PACU and decreases intravenous opioids. Pain scores are minimized.

Conclusion: Continuous low concentration/high volume epidural analgesia reduces the need for opioid use and provides superior pain control.

Keywords: Continuous epidural infusion, Low concentration-High volume epidural infusion, epidural analgesia

SESSION 3 - OBSTETRIC ANESTHESIA

RESUSCITATION IN CASES OF PRIMARY POSTPARTUM HEMORRHAGES

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Introduction: Primary postpartum hemorrhage (PPH) occurs in the first 24 hours of a spontaneous delivery, with a bloodloss larger than 500 ml.

Objective of the essay: to show the resuscitation of postpartum women with PPH.

Material and methods: The target group is patients with PPH after a spontaneous delivery at the UCGO in 2023. Out of 1942 such patients, 238 got PPH.

Most frequent causes of PPH are: uterine atony, episiotomy, vaginal and perineal laceration, uterine rupture, adherent placenta, cervical rupture, as well as deffects in blood coagulation. In parallel to the obstetrical care for the patient, the following procedures were undertaken in order to intitiate resuscitation:

1. oxygenation
2. placement of two vein cannulas
3. rapid infusion of crystalloids and colloids
4. monitoring of vital functions
5. preparation of the necessary laboratory anylises and hemostasis factors
6. procurement and administration of blood and blood derivities
7. mobilisation of senior expert staff

Results: All patients with PPH in 2023 at the UCGO had positive outcomes.

Conclusion: the timely, rapid and correctly performed resuscitation by a team of senior experts is crucial for a positive outcome in such life-threatening hemorraghes.

Keywords: spontaneous delivery, hemorrhage, resuscitation

ANESTHETIC CONSIDERATIONS IN HIV POSITIVE PARTURIENTS

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Introduction: Since its discovery 40 years ago, more than 32 million people have died as a result of HIV and AIDS. The management of HIV has been revolutionised with regular testing, public health campaigns and antiretroviral treatment. Patients with HIV can now expect to have a normal life expectancy and they may come for various types of elective or emergency surgeries.

Case report: We present two cases of HIV positive parturient at term admitted at Clinic for Gynecology and Obstetrics for labor. Both parturients were on preventive antiretroviral therapy (pART), regularly controlled, in stable condition. At the admission blood count, coagulation profile, liver tests and ECG were performed. The obtained results were within normal values in both patients. An infectologist was consulted, the viral load in both patients was very low.

Patients were scheduled for elective caesarean section due to obstetric indication. Standard spinal anesthesia was performed with Pencan 27G. Newborns were received by a neonatologist and an infectologist was immediately consulted for possible antiviral prophylaxis.

It is now clearly established that neuraxial anesthesia can be administered safely in HIV positive patients and it is anesthesia of choice for cesarean section. In the perioperative management of these patients, it is important to consider whether the patient has stable disease, the viral load and the presence of comorbid conditions. And to pay attention on minimising the interruption of pART and potential interactions between pART and anesthetics. The risk of vertical transmission can be reduced to less than 2% with pART and low maternal viral load.

Conclusion: The anesthesiologist is often faced with managing HIV positive patients and the anesthesia technique should be chosen keeping in mind the various implications of this disease. The care of such patients should be carried out with all universal precautions to reduce cross-infection of healthcare personnel.

Keywords: Parturient, HIV, Antiretroviral therapy

EPHEDRINE VS. PHENYLEPHRINE - INTRAVENOUS BOLUS FOR PREVENTION OF SECONDARY HYPOTENSION DURING SPINAL ANESTHESIA FOR CAESAREAN SECTION

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INTRODUCTION: During spinal anesthesia for Caesarean Section we frequently have high incidence of hypotension for which it is necessary to use vasopressors. Aim of this study is to make comparison between ephedrine and phenylephrine for prevention of secondary hypotension, and to prevent unwanted effects in parturient and newborns. The study was performed during 2023 year.

MATERIAL AND METHOD: Hundred and thirty-six (n=136) patients during planned or emergency Caesarean section received preventive bolus dose of ephedrine or phenylephrine, immediately after receiving spinal anesthesia. Parturients received intravenous bolus dose of 0,1 mg/kg (6-9mg) ephedrine (n=66) or 1,5 mcg/kg, (100-125) phenylephrine (n=70). Monitoring of blood pressure and pulse (bradycardia, hypotension, hypertension), nausea and vomitus, APGAR score of the newborn, as well as pH of the umbilical cord blood of the newborn.

RESULTS: Incidence of hypotension in both groups was similar total n=22 patients, though it was more in ephedrine group (n=13), compared with phenylephrine group (n=9). Incidence of hypertension and bradycardia after vasopressor application (n= 17) was more in phenylephrine group (n=12) vs. ephedrine group (n=5). pH of the umbilical cord blood and APGAR score was similar in both groups.

CONCLUSSION: Both vasopressors given as IV bolus in spinal anesthesia for Caesarean section in prevention of hypotension are similar in performance. Hypertension and bradycardia as unwanted effects are more frequent in phenylephrine group. No difference toward newborns

Key words: Ephedrine, Phenylephrine, Hypotension, Caesarean section, Vasopressors

HYPOKALEMIA IN PREGNANT WOMEN

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Case presentation: Patient H.R., born in 1994, gravida ml IV (14+2 weeks gestational age), diagnosed with Hyperemesis gravidarum, hypokalemia, metabolic alkalosis, status post subcutaneous antiemetic administration 3 times. The patient was admitted to the emergency department due to vomiting in pregnancy and general weakness. Upon admission, she was hemodynamically stable, tachycardic (HR 103/min), with marked lethargy. The patient assumed a passive position in bed with difficulty in moving extremities, weakness, and occasional tingling and pain in them. She is conscious, cooperative, and oriented in space. . Laboratory findings showed pronounced hypokalemia (1.7 mmol/l) and metabolic alkalosis (pH 7.55). Elevated levels of AST, ALT, LDH, CK (3509 U/L), bilirubin, urinary proteins +++, prolonged coagulation times were observed. Substituted with KCl 7.4% 3x40 ml, but morning potassium remained at 1.6 mmol/L. In consultation with an endocrinologist, potassium was continued at 100 ml over 3 hours, resulting in a slight increase in potassium to 1.9 mmol/L. The same dose was repeated in the evening and morning potassium was 2.1 mmol/L, with the aforementioned parameters showing improvement. Consultations were made with an endocrinologist, neurologist, gastroenterologist, hepatologist, and nephrologist. In consultation with the gynecological team and with the consent of the patient and family, a medical abortion was performed. Antibiotic, anticoagulant, gastroprotective, hepatoprotective, rehydration, and electrolyte replacement therapy were continued. After improvement in the general condition, restoration of motor function, and normalization of local findings as well as overall laboratory and vital parameters, the patient was transferred to the urgent care ward until the day of discharge. After discharge from the hospital, the patient was referred for a follow-up examination at the Gastroenterohepatology, Endocrinology, Nephrology, Neurology, and Cardiology Clinic for further investigations. It was recommended to obtain the results of the fetus autopsy and placenta examination. Hyperemesis gravidarum should always be recognized as a serious symptom of pregnancy, necessitating multidisciplinary and prompt treatment to prevent complications for both the mother and the fetus.

Key words: hypokalemia, hyperemesis, gestational period

PERIPARTAL COMPLICATIONS IN A WOMAN AFTER IN VITRO FERTILIZATION

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Introduction: The peripartal period is a state of complex changes in the women's body. Previous comorbidities and received therapy, complicates the functioning of the organic systems.

Case report: Patient A.A., 49 y.o., 33+3 weeks of gestation, conceived after the 6th IVF. She had gestational diabetes and received high doses of anticoagulants. She presented with difficult breathing, swelling of the legs, epistaxis and was in a cachectic state. These symptoms began in the 6th month of the pregnancy, but were less pronounced. Examination and laboratory analyses showed D-dimers >10000 and a sub compensated heart failure. The second day she had a cardiorespiratory arrest. Resuscitation was started and a caesarean section was performed. She was

stabilized and placed on mechanical ventilation. The newborn had a 6,7,8 APGAR score. The postoperative period was characterized by an extended need for mechanical ventilation and pronounced muscle weakness. She had anemia, hypoproteinemia, hypokalemia, low cholinesterase and was negative for lupus anticoagulant antibodies. Chest radiography showed consolidation and effusion. CT scan of the head showed parietal subarachnoid hemorrhage, while the MRI indicated initial vascular changes in the white mass of the periventricular and frontoparietal regions. There were no signs of thrombosis. On day 10 she had a bronchoscopy and a sample for cytology was obtained. On day 14 the neurological status deteriorated with generalized convulsions, hemiparesis and was febrile. The CT showed brain edema and was transferred to the Neurosurgery Clinic for further treatment. The cytopathological examinations of the bronchial sample showed cells with highly malignant characteristics. She had a tracheotomy and after 4 months she was successfully weaned from mechanical ventilation and discharged.

Conclusion: The complexity of the mother's body during the peripartal period can be a trigger for many life-threatening conditions. Comorbidities and ongoing therapy may worsen the course of certain conditions. It is important that they are quickly recognized and properly treated.

Keywords: peripartal period, subarachnoid bleeding, mechanical ventilation

A PARTURIENT WITH CATASTROPHIC ANTIPHOSPHOLIPID SYNDROME

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Background: Antiphospholipid syndrome(APS) is an immunological syndrome that is characte ised predominantly by recurring blood clots.It's 3-5 times more common in females.The most rare and life threatening complication of APS is catastrophic antiphospholipid syndrome (CAPS).

Case Report: We report a 38y.o. primigrava with a medical history of a previous spontaneous miscarriage and a controlled pregnancy.She has an uneventful spontaneous vaginal delivery and births a male newborn.20 minutes after delivery the patient presents with progressive shortness of breath and respiratory failure.The parturient is intubated and put on mechanical ventilation whilst receiving heparin under the clinical suspicion of pulmonary embolism. Shortly after, due to uterine atony and mayor haemorrhage unresponsive to uterotonic drugs, she undergoes an emergency hysterectomy. In the next days she continuous to deteriorate due to uncontrolled blood loss.Laboratory investigations show an impaired hemostasis and CT scans show an ischemic lesion of the brain. A multidisciplinary consilium (anesthesiologist, transfusiologist and rheumatologist) suggested CAPS.After clinical and laboratory(lupus anticoagulant +) confirmation of the condition she is started on high doses of LMWH, corticosteroids, immunoglobulins and plasmapheresis.After initiation of the therapy the bleeding subsides and the hemostasis tests improve.The patient improves clinically and is removed from the ventilator on day 25.On day 29, unexpected tracheal bleeding appeared around the tracheostomy which progressed to a lethal outcome despite overall therapy.

Discussion: APS is a systemic autoimmune disease with thrombotic and nonthrombotic manifestations.The clinical manifestation of CAPS is with organ micro/thrombosis and hematologic manifestations and usually overlaps other thrombotic microangiopathies.Its diagnosis can be a diagnostic challenge because it can present itself in different clinical manifestations and the proposed diagnostic criteria should be loosely followed in order to make a definite, probable or CAPS like diagnosis.Clinicians should have a clinical suspicion of the probable onset of this condition because initiation of therapy can be lifesaving.

Keywords: Catastrophic antiphospholipid syndrome, Lupus anticoagulant

ECLAMPTIC SEIZURE DURING SECTION CESAREAN (case report)

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INTRODUCTION-The prevalence of Eclampsia globally is reported at 0.3%, and seizures as a major neurologic complication of pregnancy are very rare affecting 0,3%-0,8% of all gestations. Seizures can range from a subjective experience of a twitch, to a serious tonic – clonic convulsions.

CASE REPORT- A patient 35-year-old, 36 gestation weeks, because of severe hypertension, was hospitalized. Antihypertensive therapy was given and a routine ultrasound doppler, was performed. As there not an adequate response to the antihypertensive therapy and a decline of umbilical corde circulation was diagnosed, obstetrician, indicated emergency Section Cesarean. Arriving in the Operation room, blood pressure was 230/130, and a tachycardia of 110b/min. Dormicum 2mg iv was given as sedation, before starting the operation. Spinal anesthesia was given, with the sensory block to Th 4. During delivery, sudden seizure occurred as rhythmic twitching of upper limbs, trunk and face, with eyes deviated on side, and the parturient lost consciousness. During the seizure, blood pressure was 110/70, pulse 37b/min. Atropine 0.5mg, ephedrine 6mg.iv and propofol 50mg iv, was given. Oxygen mask with 100% of oxygen, were applied, there was no apnea or obstruction of breathing. After 1min the seizure was resolved, and the parturient after 5min was aware without any memory of seizure. Baby was delivered with Apgar score 8,8. After operation parturient was transferred to ICU for 24h monitoring, where a CT of the brain was made with no pathological substrate shown.

DISCUSSION -Eclapmtic seizures typically occur suddenly. Under spinal anesthesia, circulation is influenced by the blockage of sympathetic activity. And when an obstetrician is delivering a baby from the uterus, strong peritoneal traction may aggravate the increase in parasympathetic activity. Hypotension and bradycardia, lead to transient hypoxia, which is likely to cause seizure.

CONCLUSION - symptoms during eclamptic seizure are very important to recognize and terminate, because it can be harmful both to a mother and a baby. In our case severe hypertension and proteinuria was consider as a hallmark. Supportive therapy is needed to be initiated immediately. Dormicum and especially propofol is well demonstrated, that a low dose of propofol (<2mg/kg BW), has no effect on fetal Apgar score and neurobehavioral scores, so is a suitable drug to terminate seizure during Section Cesarean.

A CASE OF HEMORRHAGIC STROKE DURING SPINAL ANESTHESIA FOR ELECTIVE CESAREAN DELIVERY

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The risk of stroke is increased during pregnancy and the postpartum period. The physiologically mediated hemodynamic changes in circulation and vascular tissue and the increased coagulability leads to increased risk of stroke. Pregnancy-related strokes can be hemorrhagic or ischemic. We present a rare case of hemorrhagic stroke during Cesarean Section. A 32-year old female with no known comorbidities and after one cycle of IVF, with normal coagulation was scheduled Cesarean Section for gemellar pregnancy with spinal anesthesia. Shortly after the delivery of the baby the patient started complaining of intensive headache which was followed by motor aphasia, right sided hemiparesis and central facial palsy. An MRI of the brain showed hemorrhage in capsula interna and thalamus on the left side. These findings suggested acute hemorrhage infarction. She was started hyperosmolar therapy and steroids. She was discharged upon improvement in her symptoms and was asked to follow up in the outpatient department. Studies have shown an increased risk of stroke in women who undergo a cesarean section. Thus, clinicians should be aware of this complication and high-risk patients should be identified and monitored more aggressively in their perioperative period .

Keywords: stroke, pregnancy, cesarean section, spinal anesthesia

SECTIO CAESAREA AND ANXIETY

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Introduction: A caesarean section represents the surgical delivery of a fetus, where there are no conditions for spontaneous delivery. On a global scale, the percentage of caesarean sections ranges from 5-15% with a tendency to increase. In the Republic of N. Macedonia there is an exponential growth of caesarean sections. This trend is also followed by SHGO "Mother Teresa" Cair – Skopje and amounts to 43%. In addition to the existing indications for a caesarean section, certain pregnant women also show a personal desire to end the pregnancy by surgery. Although the availability of information is within reach, patients often remain uninformed about the procedures, which is a common source of anxiety.

Aim: To show the levels of anxiety in pregnant women undergoing a caesarean section (spinal anesthesia 98%). One hundred subjects were tested during a one month period using the Hamilton Anxiety Scale (HAM-A). The test contains 14 questions, where each question is scored from 0 to 4, with a total score of 0-56, where <17 represents mild anxiety, 18-24 moderate anxiety, 25-30 moderate to severe anxiety. Other parameters such as: age, nationality, professional training, number of pregnancies, indications for caesarean section and types of anesthesia were also included in the study.

Results: 98% of the patients were managed using regional anesthesia. According to HAM-A, 41% of patients show mild anxiety, 53% moderate and 6% severe anxiety (present history of mental disorders). A higher level of anxiety was seen in primiparous women (64%), then 78% in older patients and 8% in patients who reported complications at the end of a previous pregnancy (miscarriage or caesarean section).

Conclusion: Surgical delivery of a fetus causes a certain level of anxiety, and therefore it is necessary for obstetric gynecologists to perform frequent control of pregnant women during the entire pregnancy, also the formation of multidisciplinary teams in counseling centers for pregnant women which are aimed at improving the education and reduction of anxiety of pregnant women undergoing a caesarean section.

TYPE I CHIARI MALFORMATION AND PREGNANCY: A REPORT OF TWO CASES

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Background: Type I Chiari malformation is characterized by downward displacement of the cerebellar tonsils into the cervical spinal canal. Safest mode of delivery and anesthetic management for parturient with Chiari malformation-I remains uncertain. General anesthesia with laryngoscopy and tracheal intubation can increase ICP or the CSF pressure gradient. Labor contractions which also increase ICP, and neuraxial anesthesia both are related to the theoretical risk of brainstem herniation given the altered CSF dynamics inherent to the condition.

Case presentation: A 38– year-old parturient with Chiari I malformation, 1st pregnancy, 39th gw, normal pregnancy, breech presentation, scheduled for elective cesarean section. Symptoms started at age 29, MRI showed Chiari malformation-1 with syringomyelia, posterior fossa decompression was performed. Patient is without symptoms, regular MRI finding. Patient received standard spinal anesthesia with Pencan 27G. A 31-year-old parturient with Chiari I malformation, 1st pregnancy, 38th gw, oligohydramnios, scheduled for elective cesarean section. Patient had no symptoms, diagnosis was made two years before on an accidental MRI finding. Due to treatment with therapeutic doses of LMWH, general anesthesia was chosen, using propofol as an anesthetic of induction and maintenance. Both patients were hemodynamically and neurologically stable during the whole intraoperative and postoperative time.

Conclusion: Neuraxial block is both a safe and viable anesthetic option for women with Chiari I malformation during labor; with no worsening neurological symptoms. General anesthesia with selection of anesthetic drugs that minimally

interferes with cerebral dynamics is also a safe option. Other key factors to prevent any rise in ICP are maintenance of hemodynamics and normocapnia and avoidance of high airway pressures. For patients with significant neurologic symptoms prior to conception, decompression prior to pregnancy should be considered. An individualized approach to each patient and multidisciplinary management involving neurosurgeon, anesthesiologist and obstetrician can provide favorable outcomes.

Keywords: Chiari malformation, anesthesia, obstetrics.

EPIDURAL ANAESTHESIA - TECHNIQUE OF CHOICE IN A WOMAN WITH ACTIVE FORM OF VARICELLA FOR AN ELECTIVE CAESAREAN SECTION –CASE REPORT

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Background: The onset of Varicella zoster virus(VZV) in pregnancy is estimated to be 1-5/1000 women.The real anaesthesiologic challenge is to determine the type of anaesthesia for C-section.Regional anaesthesia could be in correlation with potential meningitis or encephalitis and general anaesthesia with varicella pneumonia.

Case report: We present 33-years old women for an elective C-section with an active form of varicella.Negative VZV IgM/IgG serology tests were performed 3weeks before admission, in the 38thgestational week when her first child presented varicella rash.Even though still asymptomatic,the patient was given immunoglobulins as a post expositional prophylaxis and therapy with Acyclovir in case of rash onset.The C-section was performed on the 7thday of active varicella lesions appearance due to the start of active labour.The blood analysis showed no significant changes and the patient had no other varicella related symptoms present.Epidural catheter(EDK)was placed at L3-L4 and 60mg 2%Lidocain was given, with no evidence of subarachnoid block after 5minutes. 2%Lidocain 140mg followed with 0.5%Bupivacaine 10mg and Fentanyl 0.05mg intrathecally.The EDK was topped up with a total of 0.5%Bupivacaine 50mg in the following 20minutes.The patient received midazolam 1.5mg and ketamine 8mg intravenously. Patient's vital parameters remained stable during the whole procedure.No intra or postoperative complications were noted and the patient had been discharged on the 8thday after the C-section.

Discussion: The use of neuraxial blocks in the presence of neurotropic virus,such as varicella zoster,remains controversial because it is hard to distinguish the potential postoperative headache or neurological sequel as a complication or a symptom arising from the viral infection.The positive outcome is that dura remains intact during an epidural anaesthesia and the risk for spreading the infection is lowered.

Conclusion: Epidural anaesthesia is a technique of choice in a woman with active form of varicella for an elective caesarean section.

Key words: caesarean section,epidural anaesthesia,varicella zoster virus

ANESTHETIC CONSIDERATIONS DURING LABOR AND DELIVERY IN PREGNANT WOMAN WITH A HEREDITARY ANGIOEDEMA

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Introduction: Hereditary angioedema (HAE) is a rare inherited disorder, characterized by C1 esterase inhibitor (C1-INH) deficiency, manifested with episodes of severe swelling attacks. Pregnancy is a potential triggered factor that may aggravate the frequency of attacks, leading to serious complications during childbirth.

Case report: A 39 years-old pregnant woman at 37 gestational weeks, diagnosed with HAE type I at the age of 32 presented at our institution due to labor pains. She had a history of thrombophilia and three spontaneous labors, two of them were stillbirth. None of the labors were complicated by an acute attack. Although the attacks were infrequent and the last one occurred 1 year ago, she had a history of swelling episode of the upper respiratory tract. On examination, there were itchy rashes on both legs from one month ago. The head of the national angioedema center recommended administration of prophylactic dose of 4200U of C1-INH before delivery and avoidance of fentanyl in case of anesthesia. The patient had a spontaneous vaginal delivery without anesthesia. She was observed in ICU for 48h and discharged after 72h without any complications.

Discussion: Although this patient had normal delivery, we emphasize the necessity of anesthetic readiness in several aspects. Up to available data, regional anesthesia is preferred technique whenever possible. The use of fentanyl is debatable due to its potential interaction with the components of innate and adaptive immune system and possible damaging effect on mucosal membranes. Due to drug availability and above mentioned risk factors, the patient received high dose of C1-inh, although prophylaxis is not obligatory and lower dose of 1800U (20U/kg) is considered efficient.

Conclusion: The appropriate planning and close multidisciplinary cooperation contributed for positive outcome in our case.

Keywords: HAE, labor, C1 inhibitor, prophylaxis

SESSION 4 - PEDIATRIC ANESTHESIA

A RARE CASE OF BORDERLINE MUCINOUS TUMOR OF RIGHT OVARY IN YOUNG FEMALE CHILD. A CASE REPORT

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Abstract

Introduction: Borderline ovarian tumors (BOTs) are extremely rare premalignant tumors in children, with an incidence of 1% of all childhood malignancies. (1) Clinical presentation is diverse, from asymptomatic to clinically significant compression of abdominal organs, great blood vessels and urinary tract. There are few reported cases in literature. (2,3) We present a rare case of BOT in young female child, successfully treated with uneventful course.

Case-Report: A 12-year-old premenarchal female was admitted on Pediatric surgery department with a history of progressive abdominal distension in the last 7 months, followed by mild dysphagia and abdominal pain. Laboratory exams and serum tumor markers were unremarkable. Magnetic resonance imaging of the abdomen revealed an encapsulated, cystic right ovarian mass with huge dimensions, (37x28x18cm) suggestive for a possible ovarian tumor. Right urethra was compressed with consecutive right kidney hydronephrosis and compression of inferior vena cava. The cyst was surgically removed in total, along with 12L of clear fluid and right ovariectomy under general a nesthesia. Invasive hemodynamic monitoring was provided as perioperative course was uneventful. Postoperative analgesia was provided with Paracetamol, Metamizole and Morphine. Enteral feeding was resumed on the 2nd postoperative day. Patient was safely discharged on the 6th postoperative day. Abdominal ultrasound showed complete resolution of the kidney hydronephrosis. Pathohistological examination showed it to be a borderline mucinous tumor of the right ovary. The patient didn't require any chemotherapy. On the 6 mouths follow up patient was free from any recurrence.

Discussion: Borderline ovarian tumor is extremely rare in children. High index of suspicion is important, since clinical presentation can be unspecific. (2,4) Every female child with long lasting abdominal distension should be early examined with imaging methods such as abdominal ultrasound or MRI. Early recognition and timely surgical excision are important to avoid significant morbidity and malignant alteration. (3)

Keywords: Borderline ovarian tumor, young girl, early diagnosis, premalignancy

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Introduction

Tumors that originate from the ovary tissues are extremely rare in the pediatric population.

Because they are extremely rare there are very limited number of clinical studies and reports, and it is difficult to find clinical guidelines based on specific experience regarding the diagnostic and treatment protocol of these tumors. It is essential to induce early treatment in order to preserve the patient's life and the patient's fertility at the same time. The current recommended standard of treatment is the immediate surgical excision of all of the visible tumor but in fertility sparing manner. The exact diagnosis of tumors that originates from ovaries in pediatric patients is difficult because the symptoms are unspecific and usually related to compression and mass effect on the surrounding abdominal organs. For this reason, the clinicians usually become aware of the presence of the ovary abdominal tumor relatively late which results in delayed treatment and possible complications. The World Health Organization (WHO) recommends all tumors that are originating from ovaries to be classified into 3 groups. () Germ cell tumors which are most common in childhood and represents 70-80% of all ovarian tumors. The second group is benign epithelial tumors of the ovary are far more common in older women than in adolescence. Borderline ovarian tumors (BOT's) according to the literature represents between 10-30% of all diagnosed ovarian tumors in childhood and adolescence. BOT's, or also referred as epithelial neoplasms with low malignant potential with their main characteristic being up-regulation of the cellular proliferation.

ANESTHETIC MANAGEMENT OF CYSTIC FIBROSIS IN PEDIATRIC PATIENS - CASE REPORT

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Cystic fibrosis (CF) is an autosomal recessive disease affecting multiple organ systems, primarily the lungs, pancreas, gastrointestinal tract, and reproductive organs. CF results from mutations in the CFTR gene, leading to impaired ion transport across epithelial surfaces.

We present the case of a 2-month-old male infant with Cystic fibrosis disease, diagnosed through prenatal screening. He was admitted for elective ileostomy closure. In preoperative evaluation, we found out that he exhibited typical CF symptoms, (including respiratory infection with klebsiella pneumoniae and lower right lobe consolidation on chest X-ray). Preoperative preparation included antibiotic therapy at our patient, despite pancreatic enzyme replacement, and respiratory physiotherapy at other patients, according to evidence based medicine. Our patient remained hemodynamically stable throughout the perioperative period, which facilitated optimal management strategies. We performed anaesthetic induction with sevoflurane and videolaryngoscopy facilitated endotracheal intubation. The patient was reintubated after induction due to total obstruction of the endotracheal tube, caused by mucus accumulation. The second intubation was successful, and anesthesia proceeded as planned. The perioperative course was uneventful.

Conclusion: Optimizing respiratory status preoperatively is crucial in pediatric CF patients to minimize perioperative ventilation challenges. Anaesthesia management should prioritize respiratory stability, with meticulous attention to preventing postoperative respiratory complications. In cases of mucus obstruction, prompt intervention and readiness for reintubation are essential for ensuring patient safety.

Keywords: cystic fibrosis, paediatric patient, anaesthesia management.

OXYGEN THERAPY IN NEWBORNS

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Introduction: Late preterm neonates (LPN) have an increased risk of respiratory suffering, which is closely related to the immaturity of other organs and systems. The incidence of respiratory distress (RD) is increased, while in term newborns (TN), transitory newborn tachypnea (TTN) is more common. According to the recommendations of the WHO, in all LPN with signs of RD, preductal SaO_2 is measured and maintained in the range of 94-100%. The aim of this study is to investigate the prevalence of oxygen support in LPN compared with TN and the factors associated with it.

Material and methods: Preductal saturation was measured in all LPN and TN during a period of 1 month in the Department of Basic Care. In all neonates with saturation lower than 94 %, O_2 tent was administered with a 0.015 m^3 volume, flow 1-5 l/min and FiO_2 <40%. Gender, weight, Apgar score, maternal history data were taken into account. Newborns with malformations and with intensive care transfer were excluded from the study. A physical examination, blood count, CRP, acid-base status, ionogram, glycemia and lung X-ray were performed.

Results: 62 newborns in our study needed oxygen support, 31 were LPN and 31 were TN, 7 newborns were excluded from the study. Non-invasive oxygen support was implemented 97 days in LPN (on average about 3.1 days/newborn), and 81 days in TN (2.6 days/newborn). 50% of all LPN had proven infection and 30% had signs of RD. 54% of TN had

infection and 6% had TTN. 57% were born with cesarean section, 43% spontaneously born, 52% were male. The results of our study correspond to the results of similar studies.

Conclusion: Oxygen is very often used in the treatment of newborns. Oxygen therapy is longer lasting and with bigger FiO_2 in LPN, in male and operatively delivered neonates.

THE TOXIC MEGACOLON, UNCOMMON PRESENTATION OF AN UNDIAGNOSED MORBUS HIRSCHSPRUNG

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Case report: Toxic megacolon is a serious complication of inflammatory bowel disease. The 14 years old patient admitted at the clinic for Digestive Surgery with abdominal distension above the chest level and with breathing difficulties, tachypnea and hypertension. The surgical treatment was indicated immediately. After rapid sequence induction, Remifentanil has been started for maintaining the anesthesia. During the intervention the hemodynamics of the patient has improved with TA=130/70 mmHg; HR over 100-110/mi. Surgical treatment in this case was median explorative laparotomy with total colectomy and unipolar ileostomy; lavage and drainage. After intervention patient was sent at the ICU for supervision and delayed awaking with stable hemodynamics. The next day patient was transferred to the digestive surgery clinic.

Conclusion: Early diagnosis always avoids unnecessary complications! The intraoperative application of Remifentanil in this case was the right choice for getting balanced anesthesia in patients with toxic megacolon. Except making good analgesia, also decreases hypertension and heart rate.

Keywords: Toxic Megacolon, Remifentanil, Hemodynamic Stability

USEFULNESS OF BEDSIDE ULTRASONOGRAPHY FOR ENDROTRACHEAL TUBE PLACEMENT IN PEDIATRIC PATIENTS

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Introduction: Inadvertent esophageal intubation can lead to oxygen deprivation and consequent permanent neurological impairment in pediatric patients. Current standard-of-care methods that confirm endotracheal tube (ETT) use, such as auscultation, can be unreliable, and capnography is not always available, especially in the event of emergency intubation.
Objectives: To assess the effectiveness of ultrasonography for ETT placement in pediatric patients.
Material and Methods: Ten pediatric patients who were hospitalized in our intensive care unit and whose ETT placement was assessed with ultrasonography, auscultation, and capnography were the subject of this evaluation. Two residents gathered information while a senior pediatric anesthesia subspecialist assessed endotracheal tube placement. In order to confirm the ETT position, an ultrasonographic sagittal imaging view was followed for the "bullet sign," which indicates tracheal intubation, and the "double tract sign," characteristic of esophageal intubation.
Results: During this evaluation, ultrasonography confirmed tube insertion in 40 ± 18 seconds, compared to auscultation 50±20 and capnography 20±9. In 90% (9 pediatric patients) of the assessments, ultrasound was able to detect ETT placement.
Conclusion: When compared to established procedures, point-of-care ultrasonography offers significant advantages for verifying pediatric tube placement, including speed and reliability at the bedside.

Keywords: ultrasonography, endotracheal tube, neonate, capnography, auscultation

SESSION 5 - NEUROSURGERY & NEUROCRITICAL CARE

RISK FACTORS FOR RE-BLEEDING RATE IN PATIENTS WITH ANEURYSMAL SAH. RETROSPECTIVE REVIEW OF OUR INSTITUTIONAL DATA REGISTRY

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Introduction: The aim of this study is to assess the risk factors that lead to the occurrence of brain aneurysms, as well as to define the risk factors for re-bleeding in patients with aneurysmal SAH.

Material and methods: We performed a retrospective data analysis from our institution PHU UC for Neurosurgery for 2020 to 2022. In all patients who were admitted due to aneurysmal SAH, the following parameters were examined – GCS score on admission, Hunt and Hess score on admission, Fisher score on admission, location and orientation of the aneurysm, presence or absence of intracerebral hematoma or intraventricular hemorrhage, need for external ventricular drainage, duration from admission to treatment, reSAH rate, type of treatment (endovascular or surgical), clinical outcome assessed by mRS (Modified Rankin scale).

Results: In the period from January 2020 to December 2022, a total of 385 patients with spontaneous aneurysmal SAH were admitted to our institution. 116 patients (30%) were treated surgically, and 242 patients (63%) were treated endovascularly. A higher rate of rebleeding was observed in the first 14 days from the initial presentation of spontaneous aneurysmal SAH (23.7%), which was associated with high blood pressure, Hunt and Hess score III-IV on admission, Fisher score IV on admission, presence of intracerebral or intraventricular hematoma, presence of an aneurysm of the posterior cerebral circulation, diameter of the aneurysm >10mm. According to the localization, the aneurysm site was presented as ACOM 30%, ICA 24%, MCA 33%, VA/BA/PICA 13%. According to the mRS score for scoring clinical outcome and functionality, mRS score 1 had 30%, mRS score 2 had 41%, mRS score 3 11%, mRS score 4 and 5 18%.

Conclusion: The rate of rebleeding in patients with spontaneous aneurysmal SAH occurs more often in the first 6 hours to 14 days after the initial SAH. Risk factors associated with rebleeding include high systolic blood pressure, presence of intracerebral or intraventricular hematoma on admission, low GCS score, Hunt-Hess score III-IV on admission, Fisher score IV on admission, aneurysm diameter >10 mm, localization of the posterior cerebral circulation of the aneurysm.

Keywords: *SAH, Re-bleeding, Cerebral aneurism*

ANESTHETIC AND INTENSIVE CARE CHALLENGES IN A PATIENT WITH CUSHING SYNDROME AND PITUITARY TUMOR: A CASE REPORT

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Background: Cushing syndrome is an endocrine disorder caused by excess cortisol production, which can result from various etiologies, including pituitary tumors. Pituitary tumors are usually benign and can be treated by transsphenoidal surgery, but they pose several challenges for the anesthesiologist, such as difficult airway, hemodynamic instability, electrolyte imbalance, and increased risk of infection and bleeding. The postoperative period is also a challenge because of metabolic disturbances caused both by the previous hormone-producing tumor and by stress response to surgery.

Case presentation: A 58-year old male presented with symptoms of Cushing syndrome, such as moon face ("facies lunata"), central obesity, hypertension. The patient also had visual field disturbances for the last 2 years, for which underwent for Cyberknife Stereotactic Radiosurgery in Turkey, on his own choice, without a good outcome. Previously the patient was treated at the Clinic for Endocrinology for optimizing the endocrine status. CT scan revealed a pituitary macroadenoma. The patient was scheduled for transsphenoidal surgery under general anesthesia. Preoperative laboratory tests confirmed hypercortisolism (1319 mcg/dl), elevated adrenocorticotropic hormone levels (ACTH -619 pg/ml), hypothyroidism (fT4 - 12.3 ng/dl), hyperglycemia (HbA1c 7.1%). The patient received stress-dose steroids, antibiotics, and antihypertensive drugs before induction. Anesthesia was induced with propofol, fentanyl, and rocuronium, and maintained with sevoflurane and remifentanil. ET tube was placed with a guidance of video laryngoscope. The patient was extubated in the operating room and transferred to the intensive care unit (ICU) for observation. He received replacement therapy with hydrocortisone set with specific scheme by endocrinologist. Postoperative complications included transient hyponatremia, hypertension and meningitis, which were managed with fluid therapy, electrolyte replacement, antihypertensive drugs and antibiotics. The patient was discharged in a good clinical shape with no residual tumor on the follow up CT – scan and improved levels of ACTH and cortisol.

Conclusion: Cushing syndrome due to pituitary tumor is a challenging condition, requiring careful preoperative preparation, intraoperative monitoring, and postoperative care. Transsphenoidal surgery is an effective treatment option, but it can be associated with complications such as electrolyte disturbances, conscious impairment due to possible adrenal crisis and infection. A multidisciplinary approach involving endocrinologists, neurosurgeons, anesthesiologists, and intensivists is essential for the successful management of these patients.

Keywords: Cushing syndrome, Pituitary tumor, Perioperative management

LIFE AFTER DEATH: SPONTANEOUS INTRACEREBRAL AND SUBARACHNOID HEMORRHAGE AS CAUSES OF BRAIN DEATH FOLLOWED BY CADAVERIC ORGAN DONATION-A STATISTICAL ANALYSIS

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Background: Spontaneous cerebral hemorrhage is associated with high morbidity and mortality. Of the five possible types of cerebral hemorrhages, our main focus is on the following two: intracerebral hemorrhage (ICH) and subarachnoid hemorrhage (SAH), which are most commonly caused by uncontrolled hypertension, aneurysms, arteriovenous malformations and arteriovenous fistulas. Brain death (BD) is defined by complete and permanent absence of cerebral and brainstem function.
Aim: To analyze the prevalence of donation after brain death (DBD) in the Intensive Care Unit (ICU) at the University Clinic for Neurosurgery – Skopje in the period from 01.01.2021 to 31.12.2023.
Methods and results: During a two years' period, in the ICU at the University Clinic for Neurosurgery, a total of 318 patients died of spontaneous ICH or SAH. Out of those patients, 2.2% (n=7) were processed as potential DBD donors, and after performing the clinical tests for determining brain death and confirming the results with angiography, all of them were declared eligible DBD. Statistically, all of the donors were women, aged 42-61. A ruptured aneurysm as a cause of brain hemorrhage was found in 71.4%, while the other 28.6% were caused by a hypertensive crisis. Upon initial assessment, 57.1% were GCS < 8. Out of 7 patients, all of them were kidney donors (100%), 2 were heart donors (28.6%), 2 were liver donors (28.6%) and 3 were bone tissue donors (42.8%).
Conclusion: Even though the death rate after suffering a brain hemorrhage is devastating, organ donation can bring hope for other patients with end-stage diseases. With proper education and altruism, we may be able to improve the life quality of those who need it the most.
Keywords: Intracerebral hemorrhage, Subarachnoid hemorrhage, Donation after brain death

SECONDARY COAGULOPATHY IN TRAUMATIC BRAIN INJURY

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Introduction: Traumatic brain injury (TBI)–induced coagulopathy is a common and well-recognized risk for poor clinical outcomes, but its pathogenesis remains poorly understood, and treatment options are limited and ineffective.

Material and methods: This is a retrospective longitudinal study in which 151 patients were included. We evaluated the mechanism of TBI, GCS score on admission, initial CT scan findings, CT angiography and MRI findings, type of surgical treatment and Glasgow outcome score. The follow up time was one year.

Results: Between 2020/2021, a total of 151 patients were treated with severe TBI. The age of the patients ranged from 2-81 years of age. As polytrauma patients were identified 84 patients (56%). Out of all 101 (66%) were male and 50 (33.6%) were female. The most common mechanism of injury was motor vehicle accident 35%, followed by fall from height 20%, bicycle accident 15%, gun-shot injury 3%, physical assault 25% and other types of injuries 2%. The most common accompanying injuries were identified as lung contusions, spinal cord and spinal column injuries, muscle-skeletal injuries, abdominal injuries, blast injuries and crash injuries. Most common causes for delayed deterioration after severe TBI were as follow – hematoma progression 17%, re-bleeding after hematoma removal 9%, ischemic demarcation after hematoma evacuation 12%, posttraumatic epilepsy7%, hydrocephalus 2%, ICA traumatic dissection 1%, posttraumatic pseudoaneurysm (pericallosal artery) 1%. Out of the patients developing hematoma progression, in one patient we identified factor XIII deficiency Overall mortality was 35%, vegetative state 20%, minimally conscious state 15%.

Conclusion: Patients with TBI-induced coagulopathy lack key factors for coagulopathy induced by extracranial trauma or hemorrhagic shock. These patients are at significant risk for poor clinical outcomes because the prevention and treatment options are limited or ineffective.

Keywords: Traumatic Brain Injury, induced coagulopathy, Shock

EVALUATION OF PREDICTORS FOR CLINICAL OUTCOME AND ANTI-EPILEPTIC DRUG DEPENDENCE AFTER SURGICAL TREATMENT OF TUMOR - RELATED EPILEPSY

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Introduction: Symptomatic seizures can have a significant impact on the quality of life. In tumor - related seizures, the treatment is tailored to simultaneously eliminate the seizures and to obtain surgical resection of the tumor.

Material and methods: This is a single-center retrospective analysis on patients surgically treated from intracranial tumors manifested with symptomatic epilepsy. All the patients were treated at University clinic for Neurosurgery in Skopje from January to December 2022. Inclusion criteria for this study were presence of intracranial neoplasm and symptomatic epilepsy on admission. We analyzed patient's characteristics, tumor localization, type of surgical resection, extent of resection, histological data, pre- and post-operative antiepileptic drugs usage and frequency of seizures before and after surgery. The extent of resection was measured with postoperative MRI analysis

Results: A 35 out 58 patients were included in our analysis. The mean age was 46.9(18-75) years old. There were 51% of patients admitted to the hospital because of an onset seizure, and the rest 49% of patients had a previous history

of epilepsy, in which refractory epilepsy accounted for 5.7% (2 cases). 18% of patients had epilepsy for more than 1 year before the surgery. The pathohistological findings were consistent with glioblastoma WHO gr.4 in 9 patients, oligodendroglioma WHO gr.3 in 6 patients, anaplastic astrocytoma WHO gr.3 in 6 patients, oligodendroglioma WHO gr.2 4 patients, diffuse astrocytoma WHO gr.2 in 5 patients, cavernoma in 3 patients, metastasis in 2 patients. According to the extent of resection, 15 % of the patients had supramarginal resection, 74% had gross total resection and 11% subtotal resection. Generalized seizures were the most prevalent seizure type (65%), followed by focal seizures (35%). At 6 and 12 months follow up after surgery, those who suffered from>1 year of epilepsy history had a higher risk of seizures recurrence (p=0.009 and p=0.003 respectively). The preoperative seizure type was also associated with postoperative outcomes, patients with simple focal seizures often fail to achieve meaningful epilepsy regression after surgery. As a predictive factor for increased postoperative seizures were low-grade gliomas and frontotemporal lobe localization of the tumors. Other predictive factors are a prolonged history of seizure, especially resistant epilepsy and major peritumoral edema. The patients with supramarginal and gross total resection had low postoperative seizure incidence. There was correlation between Ki67 proliferation index and seizure incidence in both low-grade and high-grade gliomas. 85% of patients were seizure-free at 1 year of follow-up (Engel Class I), 9% were almost seizure-free (Class II), and 6% had significant improvement (Class III).
Conclusion: Symptomatic epilepsy pose a significant burden and affects quality of life, particularly for those patients with brain tumors. The surgical strategy and the greater extent of resection can lead to reduction of seizure occurrence. In the long-term follow up, a seizure is more challenging to control in frontotemporal tumors, low-grade gliomas, tumors that have increased Ki67 proliferation index or tumor that cause major peritumoral edema.

HEMODYNAMIC MANAGEMENT OF STROKE

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Introduction: Taking care of patients suffering from cerebrovascular diseases is complex and requires a multidisciplinary cooperation. ICU approach of these patients is usually the same as for anesthesia care in operating room. This includes frequently neurological examination, hemodynamic stability maintenance, anticoagulant drugs, and general care of these patients in ICU. Frequently neurological monitoring helps to evidence new neurological signs and the progression of old deficits.

Material and Methods: ICU physician must be prepared for anesthetic approach, the neurovascular procedure, old deficits, and of course for patient's prognosis. The neurological examination is often recommended to be in every 2-4 hours. In case of new neurological signs or decreasing in conscience an imaging control and notifying the neurologist is mandatory. Hemodynamic stability is one of the mainstay measures in intensive care unit stay. Every patient has his target in blood pressure management depended on current diseases, preoperative blood level, chronic medications, and of course on the neurovascular procedure.

Discussion: In cases of ischemic events, after endovascular tents or thrombectomy the blood pressure must vary between 140-180 mmHg. After endovascular embolization or in patients in high risk for intracranial bleeding, systolic blood pressure must be maintained 100-110 mmHg. After thrombectomy and/or stents, antiaggregating and/or anticoagulant drugs may be required to be used.

Conclusion: In such cases the multidisciplinary team must take in consideration the risk of intracranial bleeding and new ischemic events in case of no anticoagulation is used.

Key words: Stroke, blood pressure, ICU.

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THE ROLE OF SCALP BLOCK IN ABOLISHING PAIN & ENHANCED RECOVERY DURING ANAESTHETIC MANAGEMENT IN EMERGENT SURGICAL REPAIR OF CEREBRAL ANEURISMS.

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Case report: We present two cases of a 73 and 62 -year-old female patients brought to the emergency department with sudden onset of severe headache, vomiting, and altered sensorium. Computed tomography (CT) scan revealed findings consistent with SAH accompanied by ICH. The first patient was admitted as Hant & Hass 1 while the second one was Hant & Hass 2. Regarding the urgency, both patients needed a surgical repair within the first 24 hours of symptom onset. Anaesthesia was induced with Midazolam 0.03mg/kg, Propofol 1mg/kg, Fentanyl 1 mcg/kg, Rocuronium 0.5mg/kg, while anaesthesia was maintained with sevoflurane with MAC of at least 0.7. Additionally, a scalp block was performed using Bupivacaine 0.5% (10 ml) and Lidocaine (10 ml) in both patients. First patient received Remifentanil initiated at a dose of 0.01 mcg/kg/min, which was discontinued shortly after induction due to hemodynamic stability and no need of opiates. Considering the urgency of the surgery and the desire to minimize systemic effects of anaesthesia, a Scalp block was performed aiming to provide effective analgesia while minimizing the need for systemic opioids during the procedure. Throughout the surgical procedure, both patients maintained hemodynamic stability without need of additional opioids or muscle relaxants. Hemodynamic parameters were closely monitored and managed with colloid fluids and blood transfusion as necessary. Intraoperative course was uneventful, without significant fluctuations in blood pressure or heart rate. Following completion of the surgical procedure, both patients were successfully awakened and extubated in the operating room without any neurological deficits. At 1, 6, 12, and 24 hours after surgery, the patients were pain free with numerical pain score was 0/10 at all points.

Conclusion: Use of the scalp block in emergency surgical repair of aneurisms provides sufficient analgesia for the skin to brain & brain to skin part of the surgical procedure, which significantly reduces the administration of opioids and muscle relaxants, while awakening and extubation are facilitated.

Keywords: SAH, scalp block, anaesthetic management

ANESTHETIC APPROACH FOR REMOVAL OF BRAIN TUMOR WITH COEXISTENT CEREBRAL ANEURYSM

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Introduction Primary brain tumors associated with intracranial aneurysm are rare. A combination of glioblastoma multiforme (GBM) with cerebral aneurysm is even more rare.

Objectives Our aim is to point out the specifics in anesthesia management in this case where two coexisting neurosurgical pathologies are present.

Material and methods Case of a 71-year-old male, admitted of removal of a brain tumor, most likely glioblastoma multiforme. Imaging scans – CT and MRI confirmed a mass with the size of 31x27 mm, located in the occipital region of the brain, with mild brain oedema. Along with the brain mass, the patient had an unruptured aneurysm of the anterior communicating artery. The patient was also previously operated on for an abdominal aortic aneurysm. On admission, he was somnolent, confused and dysphasic.

Results Prior to the operation, a central venous line was placed in the right femoral vein and the patient was premedicated

with benzodiazepines. The surgical intervention was done under general anesthesia with propofol, remifentanil, sevoflurane and rocuronium. Intraoperatively, to reduce the brain oedema, Mannitol 20% and dexamethasone were administered. During the surgery, the patient was hemodynamically stable and had no great blood loss. Apart from receiving crystalloids, the patient was substituted with 3 units of fresh frozen plasma. In advance, the patient also was administered tranexamic acid.

Conclusion The main goal of the anesthetic management in this case was to prevent variations in the arterial blood pressure and cerebral perfusion pressure, ultimately decreasing the possibility of rupturing the aneurysm. The choice of anesthetic agents to achieve this effect is essential and must be taken into account prior to the surgical procedure.

Keywords brain tumor; cerebral aneurysm; anesthetics.

SESSION 6 - CARDIOVASCULAR ANESTHESIA

TREATMENT AND PREPARATION FOR SURGERY OF A PATIENT IN CARDIOGENIC SHOCK WITH ARTERIOVENOUS ECMO

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Case report: A fifty-six-year-old patient with persistent severe chest pain independent of physical activity, who underwent coronary angiography with the finding of three-vessel coronary artery disease, with acute occlusion of the right coronary artery and stenting of the same. After the intervention, the patient was hypotensive with appearance of a left sided hemiplegia. Because of hemodynamic instability catecholamine support was introduced and the patient was referred to Clinical Hospital Acibadem Sistina Skopje - Republic of North Macedonia. The patient was admitted with severe cardiogenic shock which despite inotropic and vasopressor support, was still hemodynamically unstable, which is why an intra-aortic balloon pump was placed. Echocardiographically, a post-infarction ventricular septal defect with a left-right shunt, as well as an aneurysm of the apex of the left ventricle were diagnosed. Efforts to improve cardiac function using inotropes, vasopressors, as well as an intra-aortic balloon pump failed to improve cardiac function, so the use of arteriovenous ECMO was considered. ECMO was placed in an arteriovenous configuration and the patient was treated for eight days, which allowed "physiological rest" of the heart, adequate oxygenation of the tissues, as well as hemodynamic stability in conditions of cardiogenic shock without the need for inotropic and vasopressor support. After the decline of the degradation products, as well as adequate antibiotic treatment, the patient was treated surgically with three aortocoronary bypasses, closure of a post-infarction ventricular septal defect and left-endoventricular circuloplasty were performed. On the third postoperative day, the ECMO was removed, the patient was hemodynamically stable, the catecholamine support was gradually reduced and turned off.

Conclusion: We share important clinical information related to our experience, especially regarding the effective management of a patient with acute myocardial infarction and cardiogenic shock, using ECMO. We emphasize that ECMO should never be considered a target therapy in acute heart failure, but should be used as a bridge to operative treatment.

Keywords: ECMO, Cardiogenic Shock, Myocardial Infarction

FAST TRACH EXTUBATION REDUCES COMPLICATIONS FOLLOWING CARDIAC SURGERY

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Background: Fast-track following cardiac surgery is a complex intervention involving several components of care

during cardiac anesthesia and in the postoperative period, with the ultimate aim of early extubation after surgery, to help in reducing postoperative complications, to reduce length of stay in the intensive care unit and in the hospital. The Society of Thoracic Surgeons uses a 6-hour benchmark for early extubation.

Methods: A multidisciplinary extubation protocol was created. The protocol was applied to all elective cardiac surgery patients in the group. The study is both retrospective and prospective. The number of the patients enrolled is 100. Additional primary and secondary outcomes were measured. Patients were excluded if they experienced events that contraindicated application of the protocol. All statistical analysis was performed using STATA 12.0 (StataCorp, College Station, TX). Descriptive analysis was performed using Student's t-tests.

Results: Median extubation time was reduced by 35%. Intensive care unit was reduced from 2 to 1 day. Reintubation rate was similar and nonsignificant in both groups. The rate of ventilator associated pneumonia was reduced. Those with longer intubation durations had a higher STS-predicted risk of morbidity and mortality.

Conclusion: Extubation within 6 hours as compared to conventional extubation practices has been linked to reductions in infectious complications, renal failure, stroke, ICU readmission, reintubation, and operative mortality. Initiatives to reduce ventilator time after surgery have made a substantive effect on cardiac surgery outcomes. It is safe, effective and cost beneficial in both coronary and valvular patients.

Keywords: fast-track extubation, cardiac surgery, cardiac anesthesia

CORONARY ARTERY BYPASS SURGERY IN PATIENT WITH HEMOPHILIA B

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Introduction: Hemophilia B is inherited X-linked recessive genetic bleeding disorder caused by low concentrations of coagulation factor IX. Cardiac surgery alone poses a high intra and postoperative coagulation risk.

Case report: Our patient is a 58-year-old man suffering from mild form of hemophilia B presenting with symptoms of unstable angina pectoris. The patient is also suffering from hypertension, dyslipidemia, non-insulin dependent diabetes mellitus. About 23 years earlier the patient had undergone crural amputation of right leg due to peripheral vascular disease and diabetic foot. The preoperative level of factor IX was 52 units/dl (normal range 50-150 units/dl). In consultation with hematology specialist, 9000IU of AIMAFIX plasma coagulation factor were administered. A multidisciplinary team approach consisting of cardiac surgeons, anesthesiologists and hematologists has successfully performed and managed the coronary artery bypass surgery. The procedure was rendered as very high-risk procedure. Six hours after surgery the level of factor IX was 102 units/dl, so 4500IU of coagulation factor IX were administered every 12 hours in the first three postoperative days. On the third postoperative day the level of factor IX was 84units/dl, so 4500IU of coagulation factor IX were administered each day in the fourth and fifth postoperative day. The patient was discharged on the sixth postoperative day in stable condition. Later the administration of coagulation factor IX was 4500IU daily for the following seven days. In the postoperative period and home, the patient was treated with Clopidogrel 75mg daily, and Enoxaparine Sodium 40mg/0,4ml every 12 hours for the following 7 days.

Conclusion: In this case report, cardiac surgery with cardiopulmonary bypass was successfully and safely performed in a patient with hemophilia B without hemorrhagic or thrombotic complications. The multidisciplinary approach is the key factor for successful outcomes.

Keywords: Hemophilia B, Coagulation, Coronary Artery Bypass Surgery, Cardiac Anesthesiology

SIMULTANEOUS SURGERY FOR ADVANCED RENAL CELL CARCINOMA AND CONCOMITANT DOUBLE VALVE AND CORONARY ARTERY DISEASE: A RARE CASE REPORT

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Introduction: Cardiovascular and neoplastic diseases are the main causes of death in Europe. Renal cell carcinoma is a kidney cancer that originates in the lining of the proximal convoluted tubule. It represents around 3% of all cancers, and are responsible for 80% of all primary renal neoplasms.

Case report: A 74-year old patient with severe aortic valve stenosis, severe mitral valve regurgitation and coronary artery disease was diagnosed with malignant renal carcinoma in advanced stage with intravascular extension as tumor thrombus into the inferior vena cava and right atrium. A multidisciplinary team approach consisting of cardiac surgeons, urologists and anesthesiologists has successfully performed a simultaneous curative surgery consisting of aortic valve replacement, mitral valve repair, double coronary artery bypass, and open radical nephrectomy, lateral cavotomy and thrombectomy under cardiopulmonary bypass. The procedure was rendered as very high-risk procedure. In the postoperative period, due to oligo-anuria the patient was placed on continuous veno-venous hemodiafiltration, with subsequent resolution of left kidney function and satisfactory diuresis. Catecholamine and vasopressor support were gradually reduced in the postoperative period and discontinued. The patient also suffered from severe form of chronic respiratory failure, after extubation he was placed on non-invasive mechanical ventilation. The pathohistological finding revealed Clear renal cell carcinoma in the IV stage, pTNM= pT4 G3 (WHO/ISUP) pNx pM1 L1 V1 R1. The patient was discharged on the 15th postoperative day in good and stable condition.

Conclusion: Patients with renal tumors in advanced stage and cardiac disease can be treated successfully with surgery and benefit from early intervention by a simultaneous approach. This is a rare case report in which extensive cardiac surgery procedure and urologic procedure were performed. The multidisciplinary approach is the key factor for successful outcomes.

Keywords: Cardiac Surgery, Renal Cell Carcinoma, Simultaneous Surgery

EFFECTS OF HIGH INSPIRATORY OXYGEN ON CEREBRAL TISSUE OXYGENATION AND PATIENT RECOVERY AFTER CAROTID ENDARTERECTOM

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Background. High inspired oxygen concentrations may improve cerebral tissue oxygenation in the patents undergoing carotid endarterectomy (CE). However, there are some studies suggesting that high inspired oxygen concentration may induce cerebral vasoconstriction. This study was performed to measure the influence of FiO2 on the regional tissue oxygenation (rSO_2) in the patients undergoing CEA with total intravenous anaesthesia (TIVA).

Methods. After ethics committee approval and patients' written informed consent were obtained, 28 patients undergoing elective CE were randomized to receive TIVA with 35% inspired O2 (group A) or TIVA 100% O_2 (Group B). The INVOS 5100B monitor was used for rSO_2 measurement from operative and nonoperative side, and INVOS Analytics Tool (Covidien) for AUC calculations. A bispectral index and invasive blood pressure monitoring were used in all patients. Data were analysed using two-sided T-test and Fisher exact test. A $P<0.05$ was considered as statistically significant.

Results. The mean patients' age was 66.3±13.1 in A and 68.4±6.7 years in B group. Baseline rSO2 were not different between two groups. The maximal intraoperative rSO2 decrease on the operative side after the head reposition and/or carotid cross clamping was 37.1±15.8 in A and 23.1±11.9 in B group (P=0.05). The mean AUC for rSO2 decrease was

143.6±186 in A and 37.6±67.5 in B group respectively (P=0.002). The rSO2 decreased significantly from baseline at the skin closure point in A group (72.2 vs. 65.8, P=0.022), and was unchanged in group B (64.9 vs. 67.1). Intraoperative shunt was placed in 3 patients in A and in 1 in B group (P=0.592).

Conclusion. Intraoperative high oxygen concentrations may reduce intensity of tissue hypoxic episodes during CE in TIVA. Postoperative follow up in large patient's group is necessary to confirm its impact on patients' outcome.

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ASSOCIATION BETWEEN PROPHYLACTIC USE OF PROTHROMBIN COMPLEX CONCENTRATE AND THROMBOTIC EVENTS IN THE PERIOPERATIVE PERIOD AFTER SURGERY OF THE THORACIC AORTA: A RETROSPECTIVE COHORT STUDY

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Introduction: During cardiac surgery, there is a significant risk of postoperative bleeding due to various factors. It is standard care to replenish the factors perioperatively. The prothrombin complex concentrate (PCC) carries a potential prothrombotic risk.

Material and methods: We hypothesized that prophylactic use of PCC during thoracic aortic surgery increases the potential risk of thrombotic events. We also analyzed the bleeding outcomes in the postoperative period in surgically treated patients for thoracic aorta in 2023, at the University Clinic State Cardio surgery. A total number of 37 patients met the inclusion criteria for retrospective analysis (9/28 f/m, age 61.03±1.57 and BMI 28.638±0.768). 6 had postoperative arterial thrombosis, 4 had CVI, with no difference in age, BMI, duration of surgery (p=0.746), duration of ECC (p=0.457), preoperative hemoglobin (p=0.609) to the other group. No difference in blood transfusion (p=0.408) or blood loss (p=0.729). No CVI in any of the patients who received a prophylactic dose of PCC. 1 had myocardial infarct with elevated troponin and 1 had arterial thrombosis, both didn't receive PCC. Eight patients died in the first 30 days after surgery, 1 received a PCC. No difference in the blood transfusion between the groups (p=0.152) and blood loss in the first 24 hours (p=0.580).

Results: Prophylactic use of 1500IU PCC after surgical hemostasis with FFP (10ml/kg TT), 10-20 dozes cryoprecipitate and platelets (0.1 unit/kg TT), did not reduce blood transfusion (p=0.159), FFP (p=0.251) or fibrinogen use (p=0.706), nor impact the blood loss (p=0.696) or the need to revision due to hemorrhage (p=0.913) in the early postoperative period.

Conclusion: Our data show that prophylactic use of PCC does not increase the risk of postoperative thrombotic complications, but also did not impact the blood loss and blood transfusion in the perioperative period.

Keywords: Cardiac surgery, PCC, Thromboembolic events

PERIOPERATIVE ANESTHETIC MANAGEMENT OF PATIENTS WITH HEART FAILURE THAT UNDERWENT NON-CARDIAC SURGERY

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Background and Goal of Study: Patients with heart failure (HF) undergoing non-cardiac surgery are at increased risk for major adverse cardiac events. Nowadays, the rising incidence of HF has resulted in a growing cohort of HF patients undergoing non-cardiac surgery.

Aim of study: The goal of this study is to emphasize the importance of the preoperative evaluation and risk stratification along with careful monitoring of these patients in order to get an adequate cardiac optimization and safe patient outcome.

Materials and Methods: We conducted a retrospective database review in all patients with HF that underwent non-cardiac surgery from January 2020 to December 2023. We used the Revised Cardiac Risk Index (RCRI) - Lee Index, to evaluate the preoperative risk of a major cardiac event. For maintaining optimal haemodynamic stability we used invasive monitoring intraoperatively, adequate choice of anesthesia technique that aims to keep myocardial oxygen supply greater than demand, use of anesthetics with least cardio-depressant effect, appropriate fluid management and postoperative analgesia.

Results and Discussion: There were 142 patients with HF in the study period (96 men and 54 women, median age 69). Sixty of them underwent vascular surgery, 27 patients orthopedics, 20 patients urology, 32 patients abdominal surgery, 1 patient thoracic surgery and 2 patients ear, nose and throat surgery. The median RCRI score was 3, that corresponds to 15% (11,1-20,0%) risk of major cardiac events. 76 (49,35%) patients were under general anesthesia and 78 (50,64%) patients were under regional anesthesia. Only 2 patients had fatal outcome and the other 152 patients were discharged in a stable condition.

Conclusion: In non-cardiac surgery, a preexisting diagnosis of HF is a significant risk factor for major adverse cardiac events. Optimal perioperative anesthetic management is essential for good surgical outcomes and patient safety.

Keywords: Surgery, Cardiac Output, Heart, Non-Cardiac

PERIOPERATIVE MANAGEMENT OF A THROMBOCYTOPENIC PATIENT WITH LERICHE SYNDROME SCHEDULED FOR AORTO-BIFEMORAL BYPASS SURGERY

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Introduction: Thrombocytopenia is defined as a platelet count less than 150,000/mm^3, and it is most commonly occurring due to either impaired platelet production or increased platelet turnover in the periphery. (1) The most significant perioperative concern in patients with thrombocytopenia is the risk of bleeding. (2) The individual risk and optimal management depend on the underlying etiology and associated comorbidities. Additionally, the type and extent of the surgical procedure plays a significant role.

Case presentation: A 65-year-old patient with generalized atherosclerosis was scheduled for aorto-bifemoral bypass surgery, having previously undergone percutaneous coronary intervention to the left coronary artery three months earlier. The pharmacology history revealed chronic use of aspirin, clopidogrel, antihypertensive agents and paroxetine. Initial platelet count was 50,000/mm^3, prompting referral to hematology. Surgery was delayed for one week, with prescribed dexamethasone, aspirin, and subcutaneous enoxaparin. Upon readmission, platelet count increased

to 70,000/mm^3. Hemostasis during surgery was unremarkable, with a platelet function assay (PFA) yielding prolonged values and impaired function. Before anesthesia induction, the patient received 5 units of platelets and 1 gram of tranexamic acid. Central venous and arterial cannulation were performed under ultrasound. Intraoperatively, no significant bleeding occurred, and no transfusions were needed. However, on the 3rd postoperative day, platelet count decreased to 27,000/mm^3, leading to the administration of 5 units of platelets, 2 units of fresh frozen plasma, and corticosteroid therapy. Hemoglobin value dropped to 91 g/L. Three days after platelets increased to 94 000/mm^3 and the patient was discharged.

Conclusion: Recognition and management of thrombocytopenic patients, who may have significant risk of bleeding during major surgery is of crucial meaning. PFA and alternatives to platelets transfusion may play a significant role in lowering the risk of bleeding. Personalized approach in these patients and interdisciplinary collaboration are crucial.

Key words: Thrombocytopenia, Major Vascular Surgery, Platelet Functional Assay

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ANESTHETIC MANAGEMENT OF PATIENT WITH ASYMPTOMATIC AORTIC STENOSIS UNDERGOING FEMOROPOPLITEAL BYPASS – CASE REPORT

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Introduction: Aortic stenosis presents numerous hemodynamic challenges for anesthesiologists. Diagnosis typically relies on ultrasound Doppler, where severe aortic stenosis is characterized by an aortic valve area (AVA) less than 1.0 cm^2 along with a mean aortic valve gradient >40 mmHg. This condition induces pressure overload due to outflow obstruction, heightening left ventricular workload and gradually diminishing diastolic compliance over time.

Case report: A 70-years-old male presented with worsening left calf pain and paresthesia subsequent to a traumatic fall. Refered to vascular specialists by neurologist for comprehensive assessment. Physical examination revealed subtle sensory disparities between both extremities alongside claudication. CT angiography unveiled a popliteal artery aneurysm with intraluminal thrombosis. Preoperative ECG showed ventricular ectopy and bigeminy. Subsequent 24-hour Holter monitoring recorded ventricular ectopic beats (5142), bigeminy (169), and trigeminy (49), totaling 80647 cardiac cycles, of which 6031 were ventricular in origin. Transesophageal echocardiography demonstrated concentric left ventricular hypertrophy with aortic stenosis (peak velocity = 3.8 m/s, mean gradient = 38 mmHg, aortic valve area = 1.4 cm^2) and concomitant aortic regurgitation, with preserved ejection fraction (>55%). Anesthetic management comprised ultrasound-guided regional anesthesia (femoral and popliteal block) using 20 ml of 0.5% bupivacaine and 10 ml of 1% lidocaine. Invasive hemodynamic monitoring via radial arterial catheterization was placed. The patient was having mild incovinience during the skin incision and 2 mg midazolam and 50 mcg fentanyl were given. Stable intraoperative blood pressure was maintained, a single dose of phenylephrine (100 mcg) was administered. Surgical intervention entailed thrombectomy and femoropopliteal bypass utilizing autologous vein graft. Discharged uneventfully after a seven-day hospitalization period.

Conclusion: Cardiac risk during noncardiac surgery in patients with aortic stenosis appears to have significantly de-

clined in recent times due to increased awareness of hemodynamic concerns and recent advances in anesthetic and surgical approaches.Top of Form

Keywords: Aortic Stenosis (AS); Popliteal Artery Aneurysm; Ultrasound-Guided Regional Anesthesia;

LOW FLOW ANESTHESIA IN CARDIAC SURGERY: SINGLE CENTRE EXPERIENCE

EFFECT OF LOW FLOW ANESTHESIA ON RESPIRATORY METABOLISM IN CARDIAC SURGERY: SINGLE CENTRE EXPERIENCE

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BACKGROUND: Inhalational anesthetics agents are frequently used in cardiac surgery patients. However, normal flow (4-6 lit/min) of gases mixture is used.

AIM: Our aim is to compare the use of low flow anesthesia and normal flow anesthesia, measuring arterial blood gas analyzes and expiratory CO_2.

METHODS: Sixty ASA 3 or higher category ASA patients aged 20-84 were included in the study. Diazepam 10 mg in tablet form was given for premedication two hours before surgery. Anesthesia induction was performed with midazolam, fentanyl, etomidate and pancuronium. After intubation the first group received isoflurane, oxygen and air at 4 lit/min and the second group also received isoflurane, oxygen and air at 4 lit/min. Thirty minutes after induction the flow was decreased to 1,5 l/min in the first group, and in the second group the flow remained 4 lit/min. Arterial blood gas analyses and expiratory CO_2 were recorded.

RESULTS: There were no significant differences in arterial blood analyses, expiratory CO_2 and respiratory status between groups.

CONCLUSION: Low flow isoflurane anesthesia in cardiac patients is safe to perform compared to normal flow anesthesia

Keywords: Low Flow Anesthesia; Isoflurane; Cardiac Surgery.

TREATMENT OF INFECTIVE ENDOCARDITIS WITH CYTOKINE ADSORBING HEMODIAFILTRATION: A CASE REPORT

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Background: Infective endocarditis is a serious disease condition. The bacterial spread out and artificial cardiopulmonary bypass (CPB) surfaces results in a release of key inflammatory mediators leading to an overshooting systemic hyper inflammatory state.

Case report: A 25 years old man is presented to the emergency department in a life threatening condition, septic shock. He was somnolent, dyspneic, cyanotic, and hypoxic with peripheral oxygen saturation Spo2 75%. His symptoms developed three weeks prior admission. He was hospitalized in pulmology clinic. After he was diagnosed with endocarditis of the aortic and mitral valve, he was transferred to the cardiology clinic. His condition deteriorated and he developed pulmonary congestion and cardiogenic shock. The patient was admitted to intensive care unit,

intubated and on mechanical ventilation. His condition worsened and he underwent cardiac arrest. Cardiopulmonary resuscitation was performed followed by emergency surgery with continuous veno-venous hemofiltration using cytokine adsorbing filter started before surgery. Broad spectrum antimicrobial treatment was initiated with ampicillin + sulbactam and gentamycin, and vasopressors were started. The aortic and mitral valve were replaced with mechanical prosthesis and also an enlargement of the aortic root was made with pericardial patch. From the blood cultures, staphylococcus coagulase negative and Acinetobacter were isolated and antimicrobial therapy was changed, with targeted antibiotic. During the postoperative period acute renal failure was developed. Four treatments of CVVHDF were performed. The treatment was completed in 35 days, with full recovery of the patient

Conclusion: Infective endocarditis is severe cardiac inflammatory disease. Clinicians should consider interventions that block the inflammatory cascade as an adjuvant to conventional heart failure treatment regiments. Continuous renal replacement therapy – hemodiafiltration (CVVDF) using cytokine adsorbing filter might represent a potential approach to control the hyperinflammatory systemic reaction associated with the procedure itself and subsequent clinical conditions by reducing a broad range of immuno-regulatory mediators.

Keywords: Endocarditis, Hemodiafiltration, Cytokines

USING ECMO IN FAILING HEART – CASE REPORT

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Introduction Extracorporeal membrane oxygenation (ECMO) is used for cardiac or respiratory failure where conventional management is not successful. According to studies on posthospital discharge after VA ECMO overall survival rates are ranging from 17 to 40%.

Case report: Of a 62-year-old patient with aortic and mitral valve endocarditis, in whom aortic and mitral valve replacement was performed, with need of ECMO support due to heart failure. The patient was transferred from the cardiology clinic. Clinical presentation was shortness of breath, X-ray finding of bilateral pleural effusions, with stable hemodynamic and infectious parameters. On the fourth day of hospitalization, deterioration occurs in terms of cardiac decompensation, as a result of acute aortic and mitral valve insufficiency. Due to bradycardia, hypotension, oliguria, dyspnea, abnormal ABGanalysis, inotrops and vasopressors were introduced and he was urgently brought to surgery.In early postoperative period patient was hemodynamically unstable with impaired tissue perfusion and severe metabolic acidosis (lactate 7.4).Echocardiographic signs of global heart failure, predominant acute right heart failure. Due to large amount of drainage with hemorrhagic content, revision was indicated four hours after surgery, during which non-surgical bleeding was determined. Despite maximum doses of inotropic and vasopressor support, stabilization of hemodynamic parameters and acidosis was not achieved, which indicated placement of mechanical circulatory support, temporary venous-arterial ECMO. Patient was 48 hours on ECMO with stabilization of acidosis, diuresis, improving of the heart contractility. Due to improvement of clinical condition after cardiogenic and hemorrhagic shock, weaning from ECMO was started and it was successfully done.

Conclusion: Extracorporeal membrane oxygenation is a method of heart and lung support that gives us chance to treat acute heart failure, which is refractory to high doses of inotropes, in dilatators and vasopressors. **Keywords:** Heart Failure, ECMO

SESSION 7 - INTENSIVE CARE MEDICINE

A CASE OF VENO-VENOUS (VV) EXTRACORPOREAL MEMBRANE OXYGENATION AS A SALVAGE THERAPY FOR COVID-19-ASSOCIATED SEVERE ACUTE RESPIRATORY DISTRESS SYNDROME – THE FIRST AND SUCCESFUL STORY IN THE HEALTH SYSTEM OF THE REPUBLIC OF N. MACEDONIA

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Introduction: Coronavirus disease 2019 (COVID-19) caused by a novel human coronavirus had led to a global emergency of viral illness across the world, originating from Wuhan, China. In cases of severe Covid-19 associated acute respiratory distress syndrome (ARDS), veno-venous extracorporeal membrane oxygenation (VV ECMO) can be used as a salvage therapy or as a bridge to lung transplant.

Case report: We describe a patient with severe Covid-19 pneumonia who underwent salvage therapy with VV ECMO. A 45-year-old COVID-19 positive male patient with no past medical history, who was intubated for severe acute respiratory distress syndrome (ARDS). The patient's hypoxemia failed to improve despite the following tretatment: O2 therapy, noninvasive ventilation, endotracheal intubation and positive pressure ventilation, prone positioning, and use of deep analgosedation plus neuromuscular blockade for ventilator asynchrony. He was evaluated by a multidisciplinary team for considering ECMO for refractory ARDS. The patient was initiated on venovenous ECMO via dual-site cannulation performed at the bedside. Although his ECMO course was complicated by bleeding, he showed a remarkable improvement in his lung function. ECMO was successfully decannulated after 8 days of initiation. The patient was discharged home after 27 days of hospitalization without any supplemental oxygen and was able to undergo active physical rehabilitation.

Conclusions: A multidisciplinary approach is imperative in the initiation and management of ECMO in COVID-19 patients with severe ARDS. While ECMO is labor-intensive (needs a lot of hard work and specialized personel), using it in the right phenotype and in specialized centers may lead to positive results. Patients who are young, with fewer comorbidities and single organ dysfunction portray a better prognosis for patients in which ECMO is utilized. This was the first and at the same time succesful case of using VV ECMO for treatment of COVID-19-Associated Severe Acute Respiratory Distress Syndrome in our country.

Keywords: Extracorporeal Membrane Oxygenation, ECMO, COVID-19, Acute Respiratory Distress Syndrome, ARDS

CHANGE IN LEFT VENTRICULAR VELOCITY TIME INTEGRAL DURING PASSIVE LEG RAISE TEST PREDICTS FLUID RESPONSIVENESS IN THE INTENSIVE CARE SETTING

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Background: Fluid management in critically ill patients remains a challenge. Both under- and over-resuscitation carry significant morbidity and mortality. Assessing fluid responsiveness can help to optimize patient fluid therapy. This study aimed to investigate if changes in left ventricular outflow tract velocity time integral (LVOT VTI) during passive leg raise (PLR) test, can predict fluid responsiveness.

Methods: This prospective, single-center observational study, performed in the intensive care unit of Acibadem Hospital in Skopje, enrolled 40 spontaneous breathing patients with hypotension admitted to the Intensive care

unit. Hemodynamic and laboratory data were coupled with echocardiographic measurement of the LVOT VTI on a 5-chamber apical view before and after a PLR test, and after fluid challenge (FC)]. Patients whose VTI increased ≥15% after FC (300 mL infusion within 15 minutes) were considered responders.

Results: 18 (56.25%) patients responded positive to fluid administration and were termed responders. The change in VTI of the LVOT with PLR maneuver predicted fluid responsiveness with an area under the receiver operating characteristic curve (AUC) of 0.859 (95% CI, 0.725–0.989) with a sensitivity of 85 %, and specificity of 91.66 % at a threshold of 12%. The change in VTI during the PLR test was correlated with the VTI changes produced by FC ($r=0.8423$, $P<0.0001$).

Conclusion: The PLR test with LVOT VTI measurement using echocardiography represents a valuable tool for predicting fluid responsiveness in the Intensive care unit. It can help clinicians in the decision-making process caring for patients with hypotension and signs of circulatory failure thus potentially improving patient outcomes. Further research is needed to confirm its utility in different patient populations and settings.

Keywords: Hypotension, Passive Leg Raise, Left Ventricular Outflow Tract, Velocity Time Integral, Echocardiography

PULMONARY FAT EMBOLISM AFTER FEMORAL FRACTURE IN 20 YEARS OLD BOY - CASE REPORT

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Introduction: A fat embolism (FE) syndrome is a rare condition when piece of intravascular fat lodges within a blood vessel and causes a blockage of blood flow. It commonly occur after fractures to the long bones particularly the femur, tibia and pelvis besides the anticoagulants. The fat droplets don't have to be present in urine to set up the diagnose, when it,s based on clinical symptoms.

Case report: 20years old patient was hospitalized after fall from one meter height with Dg. Fra diaphysis femoris sin cum dislocation; Fra ossis naviculare sin. In few hours operation was performed.(Osteosyntesis intramedularis femoris) and the patient was transferred on Department of Trauma. After two days the same patient was transferred to ICU as his condition deteriorated (HR > 140/min, SaO2<70%, dyspnea, hyperventilation >30/min.). Despite symptomatic therapy the patient's condition became worse and he was intubated. CT and CT angiography were performed (ARDS diffusa bill; Mass fat pulmonary embolism suspecta).COVID 19 test was made (positive +) and also AB status, hemostasis and hemoculture were made. Fat droplets were not found in urine. After 3-4 days the patient's condition was satisfying and he was extubated.

Discussion:. In case of this patient because fat droplets were not found in urine, mas pulmonaly embolism was diagnosed only clinical. Differential diagnostically it is possible to occur ARDS after trauma and ARDS after COVID pneumonia.

Conclussion: There is no cure for fat embolism and there is no standard treatment. The main goal is to provide supportive care and prevent further complications. Whatever,early though on fat embolism always provides good outcome for the patients.

Keywords: Fat Embolism, Fat Droplets, ARDS

THE SUCCESS OF THE TREATMENT OF ACUTE RESPIRATORY DISTRESS SYNDROME IN PATIENTS SUFFERING FROM COVID-19 IN THE RESPIRATORY CENTER OF THE LESKOVAC GENERAL HOSPITAL

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Introduction: The clinical picture of patients suffering from the COVID-19 virus includes respiratory symptoms. Treatment of respiratory insufficiency involves early intubation and mechanical ventilation (MV). In the initial treatment of these patients, non-invasive ventilation (NIV) proved to be successful.

Objective: The aim of this study is to evaluate the clinical data of patients suffering from the COVID-19 virus and to compare the success of their treatment with different modes of ventilation.

Methods: The retrospective study included 106 patients who were treated in the Respiratory Center of Leskovac General Hospital from November 2019 to May 2020. They were divided into three groups:

I- patients who were on NIV,

II- patients who were transferred from NIV to MV due to deterioration of their condition,

III- patients who were on MV from the beginning to the end of the treatment.
The length of treatment, duration of symptoms and comorbidities were secondary analyses.

Results: Out of the total number of patients, there were 64 men (60,4%) and 42 women (39,6%). Thirty one (46,9%) patients were between 70 and 79 years old. The most common therapy was antiplatelet, antidiabetic and antihypertensive, $p<0,05$. The average time since the onset of symptoms and the time of treatment of the patient did not show differences between the groups, $p<0,05$. Favipiravir was used in 6 patients of group I and 11 patients of group II. Tocilizumab was administered to 3 patients of group II. Convalescent plasma was given to 5 patients of group I and one patients from group II. Mortality was statistically significantly higher in patients who underwent MV, 81 patients (76.42%).

Conclusion: With NIV, it is possible to avoid intubation and reduce the mortality rate in patients with COVID-19. This opens up new possiblities for the new treatment of Covid patients.

Keywords: Acute Respiratory Failure, ARDS, COVID-19, Non-Invasive Ventilation, Mechanical Ventilation

TYPE 2 DIABETES MELLITUS AND SEPSIS - CASE REPORT

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Introduction: Diabetes and sepsis are significant causes of morbidity and mortality worldwide. Patients with diabetes have higher incidence of post-septic complications, often with lethal outcome. The impact of diabetes on sepsis mortality is still controversial.

Case presentation: We present a case study of a 57 years old male patient, with obesity and uncontrolled diabetes mellitus, who was admitted in ICU for emergent surgical treatment of acute appendicitis. The patient was febrile (39 C), with tachycardia and hypertension before, during and after surgery. Blood sugar level was 19 mmol /l. After initial surgical treatment, the patient had two consecutive surgeries including a Vacuum Pack placement, cecal resection, ileostomy and tracheostomy. The vital parameters of the patient were monitored and he was intubated and placed on mechanical ventilation. The patient required vasopressor support and triple antibiotic therapy was initiated. In ICU blood sugar level was controlled with continuous insulin infusion pump. Also hemostasis assays, acid-base status and biochemical analyses were made daily. Blood sugar level was maintained from normoglycemia to 9 mmol/l. After 35 days in ICU, he was discharged in a good general condition, with a recommendation to continue the treatment of diabetes in consultation with endocrinologist.

Discussion: Many severe infections are attributed to poor glycemic control. Treatment with insulin and oral antidiabetic drugs may be associated with lower incidence and mortality from sepsis. On the other hand, chronic exposure to higher

blood sugar levels may enhance the immune response leading to reduced mortality rate in diabetics with sepsis.

Conclusion: Further studies are underway to confirm the protective role of antidiabetic drugs treatments in the occurrence of acute organ dysfunction. The risks and benefits of less strict glycemic control in these patients are under investigations.

Keywords: Diabetes Mellitus Type 2, Sepsis, Immune Response, Glycemic Control, Mortality

MANAGEMENT OF A STAGE 4 HEMORRHAGIC SHOCK DUE TO MENOMETRORRHAGIA

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Background: Stage 4 hemorrhagic shock is a life-threatening emergency that must be recognized and treated promptly while investigating the cause and staring causative therapy as soon as possible.

Case report: We report a 22yo patient with prolonged vaginal bleeding lasting 4 days. At admission the patient is in stage 4 hemorrhagic shock with a BP 107/55mmhg, PR 150/minute, RR 40/min and impaired mental status. Lab results on admission: Hg27gr/L and Hct 0.07; plt 207 10x9/L. While waiting for the blood products the patient was treated with an 02 facemask 10l/min, 1,2 Lt of NS, 1Lt of Gelofundine, 1.5gr tranexamic acid and Ergometrine. An urgent consultation with a transfusiologist resulted in getting 4 bags RBC, x4 bags FFP, 20 doses of cryoprecipitate and analysis of the coagulation profile of the patient. Once the blood products arrived the patient was transfused with x4 bags of RBC, x1 FFP, x20 doses of cryoprecipitate. The G&O preformed a vaginal and transabdominal US and reported a hyperplastic endometrium. Oral hormonal contraceptive therapy (OHCT-Microginon) was started. The coagulation profile showed a fibrinogen1,2gr/Collagen 47%; ADP17%,INR1,4;PT 16,7seconds. After receiving the initial therapy, the patient status improved with a BP 110/65mmhg, PR 110/min, RR 20/min and an improved mental status. Lab results Hb70gr/L;hct 0.2; Plt 93 10x9/L.In the coming days therapy with blood products, antianemia therapy, tranexemic acid, OHCT and crystalloids continued and on day 6 the patient was discharged.

Discussion: Hemorrhagic shock must be treated promptly in order to optimize end organ perfusion. The cause of the bleeding must be defined and treated because causative therapy is imperative in subsiding the bleeding.

Conclusion: During the initial resuscitation and throughout the whole treatment a multidisciplinary approach optimizes the therapeutic and diagnostic procedures which improve patient outcome.

Keywords: Hemorrhagic shock, Menometrorrhagia, Shock

RIGHT VENTRICULAR PERFORMANCE IN POLYTRAUMATIZED PATIENTS NEEDING MECHANICAL VENTILATION

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Introduction: Even in terms of using lung protective strategies, mechanical ventilation could lead to different types of lung injury with severe consequences over systemic and pulmonary hemodynamics showing deleterious properties over the right ventricular performance as well.

Material and Methods: Fifty polytraumatized patients admitted in the ICU were included in this prospective study. They were divided in two groups regarding the need of mechanical ventilation. In all patients we have examined Right heart function by measuring TAPSE and Fractional Area Change (FAC) 24 hours, 7 and 14 days after admission in the ICU. Sta-

tistical analysis was done with calculating the mean value of TAPSE and FAC as well as with using Mann Whitney U Test.

Results: In both groups, mechanically ventilated and spontaneously breathing patients, values for TAPSE were not significantly different at all examination points. The values for FAC were significantly lower in the group of mechanically ventilated patients after 7 and 14 days of installation of mechanical ventilation (U=275; 163,5; 86,5 and z= 0,7; 2,02; 1,96 for p value of 0,47; 0,04 and 0,04 respectively).

Discussion: TAPSE as a surrogate for assessment of longitudinal systolic function of the right ventricle were left intact in both groups regardless the usage of mechanical ventilation, but radial systolic function of the right ventricle was significantly lower 7 and 14 days after starting mechanical ventilation. Impairment of the radial systolic function of the right ventricle with preserved longitudinal systolic function was previously reported in patients with high pulmonary pressures and elevated right ventricular afterload.

Conclusion: Mechanical ventilation is associated with impaired radial right ventricular systolic function with lower values for FAC in mechanically ventilated polytraumatized patients compared to spontaneously breathing patients.

Keywords: Right Ventricular Systolic Function; TAPSE; Fractional Area Change

PULMONARY CAPILLARY WEDGE PRESSURE LEVELS IN MECHANICALLY VENTILATED VERSUS SPONTANEOUSLY BREATHING PATIENTS WITH PULMONARY CONTUSIONS

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Introduction: Pulmonary contusions mediated immunological lung injury with interstitial involvement as well as therapeutically applied positive pressures over the already damaged alveoli could lead to elevation of the pressures inside pulmonary circulation.

Material and methods: We have included 50 patients in the study divided in two groups, 26 were mechanically ventilated while 24 were spontaneously breathing patients. In all patients Pulmonary Capillary Wedge Pressure (PCWP) was measured non-invasively using echocardiography. Measurements of Left Atrial Pressure (LAP) were made 24 hours after admission, at the 7th and 14th day of admission in the ICU. PCWP was calculated using the LAP values and the Nageh formula (LAPx1.28+1.98). We have calculated the mean values for PCWP in both groups and the difference was examined using the Student T Test.

Results: We found that the values for PCWP did not significantly differ between the groups 24 hours after and 7 days after admission and mechanical ventilation (t = -0.11 and 1.13 for value for p 0.45 and 0.13), but were significantly higher in mechanically ventilated patients after 14 days of mechanical ventilation (mean 10.52 vs. 7.88, t=1.89 for p of 0.03).

Discussion: Lung injury in patients with pulmonary contusions as well as inflammation during the process of damage and repair involves interstitial changes which can lead to vessel affection as well. Therapeutically applied positive pressure ventilation and alveolar distension could impair blood flow through small pulmonary capillaries and vessels. When combined both, they can lead to elevation of small circulation pressures.

Conclusion: Mechanical ventilation in patients with pulmonary contusions is associated with higher PCWP after 14 days of positive pressure ventilation in comparison with spontaneously breathing patients

Keywords: PCWP, Mechanical ventilation, Pulmonary contusions

PORTAL VEIN DOPPLER ASSESSMENT IN LIVER TRANSPLANT PATIENTS

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Introduction: Assessment of Portal vein blood flow velocities was previously described as a method for diagnosis of hepatic vascular abnormalities as well as Portal Hypertension. Estimation of portal vein flow velocities with doppler was established in early diagnosis of vascular complications in liver transplantation patients.

Material and Methods: We have performed standard liver ultrasound examination using curvilinear probe in 3 liver transplant patients. Using Color and Pulse Wave Doppler we have examined the portal vein blood flow velocities at two levels, firstly at the liver hilus and the second location was at the level of the anastomosis. The examinations were done 24 hours after surgery, at the third day and 7th day postoperatively in all patients.

Results: The mean velocity values measured 24 hours after transplantation, at the third day and at the 7th postoperative day near the hilum were 33.03cm/s; 33.87cm/s and 36.5 cm/s while those measured at the level of the anastomosis were 59.4cm/s; 58.3cm/s and 65.8cm/s respectively. Using Student T test we have found that the blood flow velocities measured in the hilum were significantly lower than those measured at the level of the anastomosis in all examination points (t = -7.04; -19.2; -4.91) for the value of p 0.01; 0.0002 and 0.003 respectively.

Discussion: Helical blood flow was previously described in vessels where diameter changes occur as well as in liver transplanted patients where donors and recipient's portal vein walls meet. Considering the different dimensions of the donors and recipients portal vein, turbulent blood flow at the level of anastomosis is expected.

Conclusion: Creating an anastomosis between donors and recipient's portal vein is associated with turbulent flow at the level of anastomosis with higher flow velocities than those measured inside donor's portal vein at the level of the hilum.

Keywords: Liver transplantation; Portal Vein Doppler; Portal vein velocities

CONTINUOUS VENO - VENOUS HEMOFILTRATION IN A PATIENT WITH INTRAABDOMINAL GRAM - NEGATIVE SEPSIS

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Introduction: Sepsis is life - threatening organ dysfunction caused by a dysregulated host response to infection. Along with symptomatic support for organ disfunction, antibiotics and surgery to control infection source if required, renal replacement therapy (RRT) techniques, like continuous veno - venous hemofiltration (CVVHF) are used.

Case presentation: A 33 - years old woman was admitted in ICU after caesarean delivery with clinical presentation of acute abdomen, altered mental status, dyspnea, tachycardia, metabolic acidosis and high inflammatory biochemical parameters. Mechanical ventilation was required along with broad - spectrum antibiotics. Intraoperative, diffuse peritonitis was found, hysterectomy was made, shortly after that, vacuum pack was installed. Postoperative, the patient's condition worsened – she was febrile, hypotensive, with urine output 100 ml/h, and required vasopressor support. Microbiologic findings showed Escherichia coli (ESBL positive) in abdominal punctate and bronchial aspirate and Staphylococcus aureus coagulase negative in blood culture - meropenem, linezolid and metronidazole were previously initiated, later vancomycin was added. With further clinical deterioration, no decrease in body temperature, high level of interleukin - 6

and procalcitonin, CVVHF with oXiris filter was initiated for 48 hours, and continued for additional 48 hours. With significant clinical improvement, decrease in body temperature, leucocytes, CRP, interleukin 6 and procalcitonin, without vasopressor support, she was extubated.

Discussion: The bacterial infection and stress response from surgery contributed to high level of cytokines, which corelates with septic shock. With standard therapeutic measures, CVVHF acted on endotoxin that triggers the immune cascade and cytokine storm that causes organ damages.

Conclusion: Sepsis remains one of a leading cause of death in ICU. Blood purification techniques acting on infectious agent themselves and host immune response, have role in treatment of intraabdominal gram – negative sepsis.

Keywords: Sepsis, Septic Shock, CVVHF

THE KEY ROLE OF VASOPRESSORS IN THE TREATMENT OF HEPATORENAL SYNDROME: A REVIEW

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Hepatorenal syndrome (HRS) is a functional renal failure caused by an intrarenal vasoconstriction in patients with cirrhosis, acute liver failure or alcoholic hepatitis. It is an acute kidney injury fulfilling the ICA criteria occurring in cirrhotic patients with ascites and no proteinuria (<500 mg/d), no microhematuria (<50 RBC/ml), no relation to nephrotoxic drug or hypovolemic shock requiring vasopressors, and not improving after diuretic cessation and albumin administration (1g/kg/day). There are three HRS forms: HRS-acute kidney injury (HRS-AKI), non-AKI-HRS and HRS-chronic kidney disease. Vasopressors plus albumin is the first line recommendation for treatment of AKI-HRS. The favorable therapeutic effect is due to the vasopresors's vasoconstrictive effect that opposites the splanchnic arterial vasodilation and to the albumin's oncotic, antioxidant and anti-inflammatory properties. Among vasopressors, terlipressin is the first-line recommended vasoconstrictive agent that can be administered as i.v. boluses (starting dose 0.5-1 mg progressively increased to a maximum of 2 mg every 4–6 h) or in a continuous infusion (2 mg/day). In non-responders, the dose can be gradually increased to a maximum of 12 mg/day. Continuous terlipressin infusion, even in lower doses, provides more stable portal pressure decrease and less adverse effects then the iv boluses. Noradrenaline is the second-line vasopressor that should be always given on a central venous line in a continuous infusion (0.5–3 mg/h). In comparison to terlipressin, noradrenalin is not inferior regarding the splanchnic constriction, renal function improvement and short-term survival. The third, less effective option is the oral use of midodrine in combination with subcutaneous or i.v. octreotide. When given outside the AKI criteria, the combined treatment is related to lower response and higher recurrence rate. In recurrent HRS-AKI, a repeated treatment course may and should be given. When treated properly and on time, HRS is a curable condition with a reported treatment response rate ranging between 45% and 76%.

Keywords: Hepatorenal Syndrome, Vasopressor, Terlipressin, Noradrenalin.

LIVER CIRRHOSIS AND HEPATOPULMONARY SYNDROME: A CHALLENGE FOR THE GASTROENTEROHEPATOLOGIST AND ANESTHESIOLOGIST

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The development of hepatopulmonary syndrome (HPS) is a serious and life-threatening condition in patients with liver cirrhosis and/or portal hypertension. To avoid the high morbidity and mortality associated with this condition, it must be promptly diagnosed and treated. The role of the interprofessional team in the care of patients with this condition is also very significant. The aim of this review is to determine the investigation and treatment of HPS in patients with cirrhosis and/or portal hypertension. HPS is a serious condition in the setting of liver disease, most studies have shown that patients with HPS have increased mortality compared to cirrhotic patients without HPS who have a similar severity of liver dysfunction. It develops due to vasodilatation and angiogenesis in the pulmonary vascular bed, leading to ventilation-perfusion mismatch, diffusion limitation of oxygen exchange, and arteriovenous shunting. When PaO_2 when breathing room air is 10.7 kPa or less, contrast-enhanced echocardiography should be performed to rule out pulmonary vascular dilatation. When contrast-enhanced echocardiography is positive and PaO_2 is less than 8 kPa, patients should receive a severity score that provides a reasonable likelihood of being transplanted within 3 months. Supplemental oxygen therapy, is the main treatment for shortness of breath caused by low blood oxygen levels, but liver transplantation is the only effective treatment for HPS.

Conclusions: HPS has a significant impact on both quality of life and mortality in patients with liver cirrhosis and/or portal hypertension. There is no established medical therapy, and liver transplantation remains the main treatment for symptomatic HPS.

Keywords: Hepatopulmonary Syndrome (HPS), Liver Cirrhosis, Liver Transplantation.

NOSOCOMIAL INFECTIONS AND ANTIBIOTIC RESISTANCE IN ICU – CASE REPORT

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Introduction: Tracheostomy tubes (TTs) in hospitalized patients can become colonized by biofilm-producing potentially harmful microorganisms (PPMs). Interacting with TTs, located in a highly exposed area of the body, can contribute to the development of resistant respiratory infections Even with extensive tracheostomy care. Pseudomonas aeruginosa and Staphylococcus aureus are the most prevalent bacteria, and their presence is associated with granulation tissue formation and post-surgical infectious complications

Case report: Case report: A 55-year-old patient was admitted to the ICU following an overdose of lithium tablets. On admission, the patient presented with altered mental status ranging from somnolence to near-unconsciousness, respiratory insufficiency, and maximally dilated pupils. The patient had a documented history of bipolar disorder and was receiving regular treatment. Prompt intubation and initiation of mechanical ventilation with continuous sedation were undertaken. During the patient's protracted ICU stay, tracheostomy was necessitated, and empirical broad-spectrum antibiotic prophylaxis was initiated, initially with Ceftazidime and Vancomycin. Inflammatory markers, including white blood cell count (WBC) and C-reactive protein (CRP), showed an upward trend, prompting a transition to Imipenem and Vancomycin. Microbiological analysis of tracheal aspirate specimens revealed the presence of Coagulase-negative Staphylococcus, initially showing sensitivity to Vancomycin and Cotrimoxazole. Subsequent cultures, taken after two weeks, indicated the presence of Acinetobacter species, initially displaying sensitivity to Cotrimoxazole and Colistin.

However, subsequent antibiogram analysis revealed susceptibility only to Colistin. Further investigation identified infection with Klebsiella pneumoniae, sensitive to Colistin and Gentamicin. After several weeks, infection with Pseudomonas aeruginosa was confirmed, showing sensitivity to Aztreonam and Amikacin. Nevertheless, controlled aspiration samples demonstrated resistance to Aztreonam and co-infection with Methicillin-resistant Staphylococcus aureus (MRSA), sensitive to Linezolid and Cotrimoxazole.

Conclusion: Nosocomial infections, especially those caused by antibiotic-resistant pathogens, represent an important source of morbidity and mortality for the patient hospitalized in an ICU. Important antibiotic-resistant nosocomial pathogens include MRSA, VRE, Gram-negative bacilli. Top of Form

Keywords: Tracheostomy Tubes; Nosocomial Pathogens; Antibiotic Resistance

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MANAGEMENT OF PULMONARY ASPIRATION IN INTENSIVE CARE UNIT – COMPARATIVE ANALYSIS OF CASES

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Abstract

Introduction: Pulmonary aspiration is a potentially fatal complication. Initially, the aspiration of large particles may obstruct the upper airway and cause atelectasis in the lower airway. Subsequently aspiration pneumonitis can occur resulting from chemical damage to the tracheobronchial tree and pulmonary parenchyma. Additionally, aspiration of bacteria from the oropharynx or superinfection of the chemical pneumonitis can lead to aspiration pneumonia.

Case presentation: We present three consecutive cases of patients. The first case was a 42-year-old patient primary diagnosed with epileptic syndrome who experienced status epilepticus shortly after food intake. Upon admission, the patient required urgent tracheal intubation. Airway assessment was challenging due to nearly complete obstruction by the food particles. After that, because bronchoscopy with aspiration wasn't available, a thorough bronchoalveolar lavage with bag ventilation using 8.4% sodium bicarbonate was done and followed by broad-spectrum antibiotic treatment. The second case, a 33-year-old patient with multiple sclerosis and consequential neurological deficits, was presented with aspiration of oral contents. She lacked urgent intubation and bronchoscopy with saline lavage. In the third case, a 49-year-old patient with a massive cerebrovascular accident who aspirated gastric contents before admission to our ward, neither bronchoscopy nor lavage was performed. The first two patients were successfully weaned from mechanical ventilation, while the third one developed aspiration pneumonia and required prolonged mechanical ventilation and a longer ICU stay.

Discussion: Despite the lack of data to support lavage, our experience has demonstrated that patients who underwent lavage as soon as possible had a better course and better clinical result.

Conclusion: In order to prevent the consequences of aspiration syndrome, early and appropriate care is essential.

Keywords: Aspiration Pneumonia, Pulmonary Aspiration, Sodium Bicarbonate Lavage.

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CEREBRAL VENOUS SINUS THROMBOSIS IN EARLY PREGNANCY – A CASE REPORT

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Introduction: Pregnancy is a state characterized by various changes in the body, including an increased risk of thrombosis. Cerebral venous sinus thrombosis (CVST) is a rare but potentially life-threatening condition that can occur during pregnancy, particularly when involving critical vessels such as the internal jugular vein, sigmoid sinus, transverse sinus, and superior sagittal sinus.

Aim: In this manuscript, we present the clinical presentation, diagnostic approach, management strategies, and outcomes in a 28-year-old patient in early pregnancy (9 weeks) diagnosed with CVST.

Case Report: This case involves a 28-year-old pregnant woman who sought care at the gynecology clinic due to severe nausea and vomiting, which later progressed to neurological symptoms caused by cerebral venous sinus thrombosis (CVST). Concerned about her worsening condition, the gynecologist collaborated with an anesthesiologist to determine the best course of action, leading to the decision to conduct further diagnostic tests, including an MRI. The MRI revealed subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH), prompting her immediate transfer to the neurology department and subsequently to the intensive care unit (ICU) due to respiratory distress. The patient's health rapidly declined, resulting in the onset of frequent epileptic seizures that necessitated intubation. Following consultation with a neurosurgeon, a conservative treatment strategy involving anticoagulant and anticonvulsant therapy was chosen. Despite an initial lack of progress, the patient underwent a tracheotomy after 12 days, after which she began to show promising signs of recovery. Eventually, she was successfully weaned off the ventilator and discharged from the ICU to the neurosurgery unit in a significantly improved state.

Conclusion: This case highlights the importance of early recognition and timely intervention in patients presenting symptoms suggestive of CVST. Prompt diagnosis and appropriate management can lead to favorable outcomes in patients with this potentially life-threatening condition. This case serves as a testament to the resilience of the human spirit and the advancements in medical care. The journey from the brink of a life-threatening condition to recovery and discharge is a remarkable testament to the dedication of healthcare professionals, the unwavering support of loved ones, and the patient's determination to overcome adversity.

Keywords: Pregnancy, Thrombosis, Cerebral Venous Sinus Thrombosis, Hyperemesis.

ARTERIAL BLOOD GAS ANALYSIS REVEELS THIAZIDE DIURETIC-INDUCED METABOLIC ALKALOSIS IN DIABETIC COMA: A CASE REPORT

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Introduction: Diabetic coma represent a severe and life-threatening complication of diabetes mellitus, characterized by profound alterations in consciusness due to hyperglicemia. While insulin deficiency is a common precipitating factor, medication-induced metabolic disturbances can contribute significantly to its onset. Thiazide diuretics, commonly prescribed for hypertension, primarly inhibit sodium reabsorption in the distal convoluted tubule, leading to diuresis. However, they are also known to cause electrolyte imbalances, particularly hypokalemia and metabolic alkalosis, which can exacerbate the metabolic derangements seen in diabetic coma.

Case Presentation: We present the case of a 66-years old women hospitalized in ICU due to diabetc coma. The women exhibited severe hyperglicemia symptoms, including unconsciousness and neurological deficits, complicated by multiple fractures. Arterial blood gas analysis revealed electrolyte imbalance and alkalosis, with elevated pH(7.57),

HCO3(29.3mmol/L) and hypocapnia (pCO2-29mmHg). Additionally, elevated glucose concentration(29mmol/L) and lactate concentration (7.2mmol/L) were observed, with low potassium(1.68mmol/L) and low calcium (1.09mmol/L) levels. Heteroanamnesis uncovered thiazide diuretic intoxication, necessiting urgent treatment with insulin therapy, rehydratation and correction of electrolyte imbalance.

Discusion: Thiazide diuretics induce metabolic alkalosis by promoting renal excretion of bicarbonate ions, resulting in an increase in serum pH. This alkalosis, combined with hypokalemia, exacerbates insulin resistance, impairs glucose utilization, and contributes to hyperglycemia, further complicating the management of diabetic coma. Additionaly, thiazide-induced hypokalemia may exacerbate neuromuscular irritability, potentially contributing to the development of coma in diabetic patients.

Conclusion: This case underscores the significance of medication-induced metabolic disturbances in diabetic coma and emphasizes the importance of arterial blood gas analyses and recognizing thiazide diuretics' pharmacokinetics in managing such patients.

Keywords: Diabetic Coma, Thiazide Diuretics, Arterial Blood Gas Analysis, Metabolic Alkalosis, Electrolyte Imbalance

MANAGEMENT OF INTOXICATION WITH A CALCIUM CHANNEL BLOCKER - LERCANIDIPINE

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Abstract: Lercanidipine is a dihydropyridine calcium channel blocker that works by relaxing and opening the blood vessels, allowing the blood to circulate more freely around the body. This lowers the blood pressure and allows the heart to work more efficiently. An overdose of calcium channel blockers, results in toxicity along with profound hypotension and shock. We present a case of a 27-year-old woman who was admitted to the ICU, after the intentional ingestion of large amounts of the calcium channel blocker, Lercanidipine. She presented with refractory hypotension and non-cardiogenic pulmonary edema, which was treated successfully with the guidance of invasive hemodynamic parameters. Treatment included high-dose insulin infusions in combination with dextrose (10%), calcium, norepinephrine and dobutamine infusions. When supportive and specific pharmacological measures fail to adequately reverse refractory conditions in a calcium channel blocker overdose, the use of extracorporeal life support should be considered. The efficacy of these pharmacological and non-pharmacological interventions generally advocated in calcium channel blocker poisoning needs further in-depth mechanistic foundation, in order to improve individualized treatment of calcium channel blocker overdosed patients.

Keywords: Calcium-channel blocker, Intoxication, Lercanidipine, Overdose.

VASCULAR ACCESSES MANAGEMENT IN ICU

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Introduction: Peripheral intravenous catheters help for infusion of medications, fluids, blood products, nutritional supplements, and even vasopressor in septic shock during central line catheters insertion.

Material and Methods: Peripheral catheters are mainly used for shorter periods when direct access to the central circulation is unnecessary or not accessible. Central venous catheters are preferred in patients receiving medications that potentially damage peripheral veins, treating with vasopressors, large amount of fluid needed, and for longer time use. Contraindication for peripheral catheters use is only the situation that oral route is available for a certain drug, instead of central catheters that have several contraindications as blood stream infections, thrombosis, stenosis, and severe coagulopathy.

Discussions: The incidence of difficult peripheral placement is evaluated 8-23 %. These situations include history of difficult IV access, on-visible veins, diabetes, long-lasting peripheral vein use, sickle cell disease, cancer and chemotherapy, pediatric and geriatric ages, underweight and severe obesity. Antecubital fossa site must preferable avoided due to the relation of brachial artery and for catheter kinking possibilities. The ipsilateral arm of previous mastectomy and/or arteriovenous dialysis fistula is present, is not preferred to be cannulated. Nowadays ultrasound guided peripheral cannulation are the actual trend especially in ICU or High Dependency Unit.

Conclusions: The physicians must individualize the patients, have general knowledges for the insertion techniques and complications. Ultrasound guided techniques are preferred for intermediate longstanding peripheral venous cannulas.

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HOW TO CORRECTLY USE OF ANTIBIOTICS IN ICU AND PCT ROLE!

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Introduction: Antibiotics (ABx) are limited today, and new antibiotics are not yet discovered. The unnational use of antibiotics can lead that will soon become ineffective. The WHO Global Action Plan on Antimicrobial Resistance 2015 summarizes that antimicrobial resistance is a crisis that must be managed with the utmost urgency. The Interagency Coordination Group (IACG) on Antimicrobial Resistance reported in 2019 that, “unless the world acts urgently, antimicrobial resistance will have disastrous impact within a generation.” Deaths due to drug-resistant diseases “could increase to 10 million deaths globally per year by 2050.”

Material and methods: As much as 75% of all antibiotic doses are prescribed for acute respiratory tract infections, despite their mainly viral cause. PCT-aided therapy in such patients allows reduction in ABx exposure without any adverse impact on outcome. Effective antibiotic treatment is reflected by declining PCT values, consistent with its half-life time of about 20–24 hours. Serial determinations of PCT can be used to monitor the course of infection in sepsis patients. Appropriate empiric antibiotic therapy was associated with a significant decline in PCT from day 2 to day 3 (ΔPCT ≥30%).

Discussion: Intra-abdominal infections are a common cause of infectious mortality in surgical ICUs. The duration of antibiotic treatment for their management is controversial. The use of PCT can reduce by 5 days the duration of antibiotics. Early diagnosis of neonatal sepsis is vital to improve the outcome. In the absence of reliable infection markers during the first hours of life, ABx treatment in newborn infants with risk factors for infection is started early, exposing a considerable number of patients to unnecessary treatment. PCT-guidance has been shown to significantly reduce antibiotic treatment duration and length of stay (LOS) in such cases.

Conclusion: PCT helps me to prescribe antibiotics rationally and thus to save their power for future generations.

Keywords: Procalcitonin, Antibiotics, Microbial Resistance.

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SESSION 8 - AIRWAY

NO ONE CAN INTUBATE BUT SURGERY CAN NOT BE POSTPONED: A CASE REPORT

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Introduction: The concept of anticipated difficult airway remains a great challenge, despite the progress in airway management protocols and technology advances. Anesthesiologists are faced to make a decision that is suitable for the patient, to avoid possible complications, but also to adjust it according to the type of surgical procedure.

Case report: A 57 years old male patient was admitted for emergency abdominal surgery due to suspected acute appendicitis. He was transferred from another facility due to inability to obtain intubation. Two anesthesiologists and an otorhinolaryngologist tried to intubate the patient using video laryngoscopy and bougie as tools for managing the airway but unsuccessfully. He was awakened, stabilized and transferred afterwards. On physical examination, he was a tall man, weighted 120kg, with good neck mobility, without any landmarks for difficult intubation. A strategy for awake intubation was made, he was sedated with 1mg midazolam, 50mcg fentanyl and 50mg ketamine and video laryngoscopy was tried, also in combination with bougie, and a nasal fiber bronchoscopy. Patient was cooperative all the time but without success and after few attempts by an experienced anesthesiologist and otorhinolaryngologist, a new strategy had to be planned. Two regional anesthesia techniques were combined, spinal block and TAP block, so they can obtain satisfactory level of analgesia and comfort for the patient and the surgeon. Spinal block was performed applying 18mg 0.5% isobaric bupivacaine and 20mcg fentanyl and ultrasound guided TAP block with total 40ml 0.25% bupivacaine. Patient didn't complain about pain during the procedure but had some discomfort moments which were managed by remifentanil infusion 0.03mcg/kg/min.

Discussion: Many regional anesthesia techniques are available to be combined so satisfactory anesthesia for open appendectomy can be obtained in extreme cases. Regional anesthesia poses lots of advantages like opioid sparing, less PONV, even less postoperative pain severity, but also risks that have to be counted when planing a personalized anesthesia strategy.

Keywords: Airway Management, Regional Anesthesia

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DIFFICULT INTUBATION IN CERVICAL SPINE INJURY PATIENTS WITH ANKYLOSING SPONDYLITIS: SINGLE-CENTER EXPERIENCE

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Introduction: Airway management in patients with ankylosing spondylitis (AS) is challenging because of reduced spinal range of motion and limited mouth opening. The condition is further complicated by neck injury resulting in neurological deficit. Awake intubation using fiberoptic bronchoscope is the method of choice. It is often uncertain, so multiple attempts are needed, which is very uncomfortable for the awake patient.

Case series: We studied 17 patients with AS who were operated on at the Institute for Orthopaedics "Banjica" in January 2019. to December 2023. due to cervical spine injury and consequent quadriplegia. All patients had a difficult airway. Mallampati grades were III-IV, and Wilson scale of 5 or more, there was rigid stiffness of the cervical spine, with varying involvement of the temporomandibular joint, inter-incisor gap below 3.2cm, and thyromental distance below 5.1cm. Patients were nebulized with 2% lidocaine, and bite blocker was placed. They were sedated with intravenous boluses of midazolam (0.02mg/kg) and fentanyl (1μg/kg) while maintaining spontaneous breathing. Awake nasotracheal fiberoptic intubations were performed in semi-sitting position. Seven patients required multiple attempts. After confirmation that the intubation was successful, intravenous induction was performed with propofol and rocuronium, and anesthesia was maintained with O_2:Air 50:50, sevoflurane, and remifentanil. After the surgery, the patients were transferred to the Intensive Care Unit for postoperative ventilation. Epistaxis occurred in 6 patients, with no other acute complications.

Conclusion: Awake fiberoptic intubation requires a trained anesthesiology team. This procedure is very complex and risky in conditions of a cervical spine fracture due to the possibility of additional neurological worsening. Adequate topical anesthesia and sedation provide a calm patient without coughing and vomiting. As it is cervical spine injury with consequent quadriplegia, these patients require long-term mechanical ventilation and often permanent tracheostomy.

Keywords: Intubation, Ankylosing spondylitis, Spine injury, Difficult airway

COMPARISON OF THE CLINICAL PERFORMANCE OF I -GEL AND LMA/UNIQUE TELEFLEX LARYNGEAL MASK IN ELECTIVE SURGERY

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Introduction: Supraglottic airway devices have emerged as integral instruments in the clinical anesthesia, acknowledged for their established safety and effectiveness. The primary objective of this prospective, randomized study was to evaluate the relative efficacy of the I-Gel™ and Teleflex LMA® Unique™ (Silicone Cuff) Airway in anesthetized patients.

Material and Methods: Twenty male and female patients aged between 23 and 65 years, undergoing surgical pro-

cedures, were allocated to either the I-Gel™ or Teleflex™ groups. Following induction of anesthesia with standard propofol doses, the supraglottic airway device was inserted. Comparative assessments were made regarding ease of insertion, insertion time, extraction time, and occurrence of adverse events. Ease of insertion was evaluated based on a scale ranging from 1 to 3, indicating varying levels of resistance (1 = no resistance, 2 = mild resistance, 3 = moderate resistance), with the number of attempts also documented. Successful device insertion was defined as achievement within the first or second attempt following any necessary airway maneuvers. All statistical analyses were performed using SPSS (IBM, SPSS Inc., USA) version 21.1 statistical analysis software. Descriptive statistics were presented as mean ± SD. Unpaired t-tests were employed for continuous data, while categorical data were analyzed using the chi-square test. Significance was determined at $P < 0.05$ for all analyses.

Results: Demographic data did not differ between the groups. I-gel™ group (7,0 ± 3,1 s) had a significantly shorter time of insertion than Teleflex™ group, (13,1.6 ± 11,9 s) (P = 0,113). The laryngeal mask size for I-gel™ group (4,5 ± 0,7 cm) was slightly higher than those for Teleflex group (3,5 ± 0,7 cm) ($P < 0.005$). The number of insertion attempts (P = 0,288), Mallampati score (P = 0,476), ASA classification (P = 0196), extraction time (P = 0,181), oxygen saturation before (P = 0,308), after insertion (P = 0,095), and after extraction (P = 0,083) were not significantly different between the groups. Ease of use and operator satisfaction on devices handling and insertion process was statistically significant (P = 0,001, chi-square test), with I-gel™ group having mean of 1,9 ± 0,3, and Teleflex™ group with mean of 2,8 ± 0,4.

Conclusion: In conclusion, our study demonstrated that both devices are convenient and effective for airway management under general anesthesia. However, the shorter insertion time required for the I-gel may make it more suitable for resuscitation and emergencies. I-gel™ group also demonstrated greater satisfaction in ease of use and operator satisfaction compared to the Teleflex™ group.

Keywords: I-Gel™, Teleflex™, Laryngeal Mask, Anesthesia, Airway.

PERIOPERATIVE AIRWAY MANAGEMENT IN PATIENT WITH MASSIVE RETROSTERNAL GOITER: A CASE REPORT

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Introduction: Large goiter is a significant challenge for anesthesiologist due to difficulties in securing the airway, especially when is retrosternal. [(1)] The strategy must be carefully planned due to high incidence of tracheal compression and shift of the distal trachea. We present a successful airway management in a patient with large retrosternal goiter.

Case report: A 66-year-old female with dyspnea and difficulty in swallowing for 1 month was admitted at the department of Thoracic surgery. Computed tomography scan showed a large retrosternal goiter (dimensions 73x74x88mm), with a significant pressure on the distal trachea and shift to the right. Preoperative otorhinolaryngological examination confirmed the difficult airway and reduced internal tracheal lumen. Awake fiberoptic intubation with armed tube size 6.5 under light sedation using midazolam was successfully performed. Anesthesia was maintained with propofol and fentanyl during surgery. While tracheostomy is typically the gold standard for securing the airway in such cases, the unique compression of the distal trachea and the unavailability of a suitable tracheostomy tube necessitated a different approach. The decision was made for delayed extubation and the patient underwent prolonged mechanical ventilation in the intensive care unit post-operatively until surgical swelling subsided. Safe extubating under fiberoptic tracheoscopy control was achieved on the 3rd postoperative day.

Discussion: Detailed preoperative assessment and meticulous planning for airway management are essential for safe anesthesiology treatment in large retrosternal goiter. [(3,4)] Anesthesiologists should be aware of the possibility of tracheal compression and displacement. Personalized approach is the best guarantee for successful patient care. In

this case, postponing the extubating in operating room allowed a safer recovery and better clinical outcome.

Conclusion: This case highlights the importance of flexible airway management strategies in patients with complex anatomical challenges and the successful utilization of awake fiberoptic intubation with prolonged ventilation as an alternative to tracheostomy in select cases.

Keywords: Retrosternal Goiter; Airway Management; Fiberoptic Intubation.

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DIFICULT INTUBATION IN PATIENT WITH MALLAMPATI SCORE IV: A CASE REPORT

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Introduction: Management of difficult airway is one of the important tasks of an anesthesiologist. To secure the airway, both anatomic knowledge and proper preparation are required. Mallampati score is use to predict difficult intubation and after its introduction in the 1980 [s] the Mallampati scoring system quickly become a routine preoperative physical exam. A high Mallampati score is associated with more difficult intubation.

Case presentation: We describe the case of difficult intubation in patient with Mallampati sore 4. A healthy 54 year old man was scheduled for an elective Mastoidectomy. Examination of the oropharynx according to Mallampati, when in the correct sitting position (uvula not visible) showed a Mallampati score of 4. Measures taken to predict a difficult airway were: whole neck, (with neck circumference over 42cm), retracted mandible (thyreomental distance 4cm and hyomental distance 6cm), without restriction of neck movement. An intubation plan was made, to use a stylet or bougie with depolarizing neuromuscular blocking agent.The patient was successfully intubated after second attempt using a bougie - tracheal tube introducer during direct laringoscopy confirmed by $ETCO_2$ and bilateral chest auscultation. Between the two attempts, SpO_2 of the patient decreased to 85%, due to bronchospasm, and mask ventilation was very difficult. Corticosteroid and bronchodilatatory therapy was given immediately, and we provided a team for urgent cricothyrotomy. The operation lasted 4 hours. Neuromuscular blockade was reversed at the end of the surgery, and we performed extubation when the patient was fully awake.

Conclusion: Appropriate preparation, using of Mallampati score for predicting difficult intubation, determination of thyromental and hyomental distance, and neck circumference, techniques, equipment (facial mask, oropharyngeal airway, tracheal tubes, stylet, bougie, video laryngoscope, fiberscope, set for cricothyrotomy) and position of the patient are essential to successful intubation. Preparation for a backup plan in case of 3 failed intubations is always rewarding for the anesthesiologist. Also the correct choice of medications especially muscle relaxant reduces the chance of fatal outcomes.

Keywords: Mallampati Score, Thyromental Distance, Hyomental Distance, Difficult Airway

EMERGENCY TRACHEOSTOMY DUE TO A MYASTHENIC CRISIS - CASE REPORT

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Introduction: Myasthenia gravis (MG) is an autoimmune disorder in which antibodies to the postsynaptic acetylcholine

muscle receptors prevent neuromuscular transmission. This results in progressive muscle weakness and fatigability. Small muscles are usually the first to be affected, most frequently those around the eye. Up to 20% of patients initially present with voice changes – most often vocal fatigue. Other laryngological changes include stridor and voice weakness. More broadly, the voice may sound hyper nasal and the patient may be dysarthric.

Case report: We present a case of 68-year-old male patient was admitted to our clinic with difficulty in swallowing, dysarthria and burning in the tongue. Oropharynx examination revealed white spots on the tongue and cheek mucosa compatible with candida. Fiber endoscopy revealed hyperemic and slightly edematous epiglottis and was observed purulent secretion in vallecular and sinus pyriformis. The vocal cords were mobile and an adequate lumen was observed. Palpation revealed no lymphadenopathy in the neck. Blood tests showed lymphocyte 5.6 Neutrophil 5.1 CRP 4.5. Intravenous antibiotic and corticosteroid treatment were started and consultation with neurology was requested. No pathology was detected in the neurological examination and was recommended, for follow-up by the ENT. In the following hours, the patient developed difficulty in breathing and a hot potato voice, saturation was recorded as 76% in the examination and tracheostomy was indicated and performed. During the follow-up, the patient was referred to neurologist again because of generalized loss of strength, ptosis and diplopia complaints. When the prostigmine skin test was positive, the patient was referred to Neurology department with the suspicion of Myasthenia Gravis.

Conclusion: Decannulation was possible in our patient whose respiratory distress regressed with the treatment administered and no respiratory distress was encountered in the follow-up.

Key Words: Myasthenia Gravis, stridor, dysarthria, tracheostomy

AIRWAY INJURIES DURING EMERGENCY INTUBATION WHILE PERFORMING CARDIOPULMONARY RESUSCITATION (CPR)

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Cardiopulmonary resuscitation (CPR) can be a distressing experience for patients, often resulting in sternum fractures in 1 out of 5 cases and rib fractures in 1 out of 3 cases. These fractures can lead to lung injuries such as contusions, pneumothorax, and hemothorax. Respiratory tract injuries, including contusions, oral injuries, injuries to the back wall of the larynx and trachea, and injuries to the epiglottis, are prevalent, affecting up to 74% of resuscitated patients, according to one study. Acute tracheal injury typically manifests as pneumomediastinum, pneumothorax, subcutaneous emphysema, and respiratory distress. Various factors contribute to these injuries, such as an overinflated tube cuff, inadequate tube size, malposition, laryngoscopy, use of aids like stylets or tube exchangers, repeated intubation attempts, and, notably, the intubator's experience. Recent recommendations from 2019 and 2020 emphasize proper training for medical staff, preferring video-laryngoscopy over direct laryngoscopy, employing capnography to confirm tube position adequacy, and considering supraglottic devices as a secondary option in cases of limited staff experience or difficult intubation. Contrary to prior practices, routine cricoid pressure is discouraged due to the lack of evidence supporting its efficacy in reducing aspiration risk, while it may impede ventilation, hinder proper supraglottic device or endotracheal tube (ETT) placement, and elevate the risk of airway injury during intubation. In this presentation, we discuss a case involving a suspected iatrogenic tracheal injury during emergency intubation performed during CPR. We address the early detection, post-intubation care, and resolution of complications associated with this incident.

Keywords: Airway Management, Airway Injury, Intubation

SESSION 9 - PERIOPERATIVE MEDICINE

WILKIE SYNDROME, A FREQUENTLY UNDERDIAGNOSED CONDITION: A CASE REPORT

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Introduction: Wilkie Syndrome is a rare condition of superior mesenteric artery (SMA) compression on the third duodenal segment. Symptoms are quite nonspecific, so high suspicion is important for establishing the diagnosis and confirming it radiologically. Patient presents with significant weight loss due to malnutrition caused by vomiting and postprandial abdominal discomfort.

Case report: A 28 years old female patient was admitted for abdominal surgery due to achalasia. She lost nearly 30kg in the last 8 months due to frequent vomiting of undigested food. Previously she had an upper endoscopy showing distended D1 and D2 segments of duodenum and collapsed D3 segment due to external cause. On CT scan there was compression of D3 by SMA and reduced aortomesenteric angle. Due to severity of patient condition, marked malnutrition, anemia, hypoproteinemia and electrolyte abnormalities, there was an indication for surgical treatment. She was operated under general anesthesia maintained with remifentanil combined with epidural analgesia. Rapid sequence intubation with succinylcholine was performed due to increased risk of aspiration despite long fasting time. After surgery she was on total parenteral nutrition, to ensure weight regain until a gastrografin imaging was performed and enteral feedings were allowed. She was discharged in good condition with gradual increase towards normal feeding.

Discussion: Wilkie Syndrome is usually underdiagnosed, patients are referred to many investigations and unnecessary psychological treatments. These are mainly young patients, usually female with abdominal symptoms that lead to acute exacerbation after persisting for months, leading to severe malnutrition and dehydration, delayed gastric emptying with increased risk of aspiration and pneumonia, oliguria and electrolyte abnormalities and metabolic alkalosis due to frequent vomiting. Good preoperative conditioning of patients and postoperative care is important for improving outcome and full recovery.

Keywords: Vomiting; Patient factors; Preconditioning

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APPROPRIATE LINE, PATIENT, AND TIMING: EVERY DECISION COUNTS.

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Introduction: Midline catheters are a type of intravenous access devices that can be inserted through a deep peripheral vein. On one hand, they have a lower rate of phlebitis and last longer than peripheral catheters (PC); on the other hand, they have fever complication rate compared to central venous catheters. According to guidelines, midlines are recommended for hospital stays lasting six to fourteen days as well as for difficult intravenous access (DIVA).

Objectives: The objective of the study was to assess the benefits and complications of midline and PC as well as to incorporate midline catheters into our regular practice.

Material and methods: Retrospective analysis was conducted in our university clinic for patients undergoing elective major surgery with a mid-length hospital stay and DIVA. We used an ultrasound-guided complete aseptic technique for midline catheter placement and a standard catheter-over-needle method for PC. We compared PC and midline placement attempts, the number of laboratory analyses required, total venepunctures, associated complications, and patient and health care provider satisfaction.

Results: We had a total of 20 patients (n = 20) divided into two equal groups. Only 20% of the midline group experienced complications (unwanted removal, swelling) compared to the PC group with 80% (phlebitis, thrombosis, or hematomas). The majority of the midline group had much fewer venipuncture and insertion attempts, with an average value of 3.1, while the PC group had an average of 19.1 attempts. The levels of patient as well as health care provider satisfaction were significantly higher in the midline compared to the PC group (95% and 45%, respectively).

Conclusion: The use of midline catheters, particularly for DIVA and scheduled mid-length hospitalizations, significantly reduces the most prevalent PC-related problems. Practically speaking, patient satisfaction is higher, and patient management is easier at the same time.

Keywords: Midline Catheter, Peripheral Intravenous Catheter, Venous Puncture, Complication.

ANESTHESIOLOGICAL CHALLENGES IN PATIENTS WITH EPIDERMOLYSIS BULLOSA UNDERGOING KIDNEY TRANSPLANT: CASE REPORT

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Introduction: Epidermolysis bullosa (EB)is a confines of complex array of rare genetic disorders characterized by blistering mucocutaneous lesions as a result of minimal mechanical trauma. Extracutaneous manifestations include mucosal involvement, including oral, nasopharyngeal, genitourinary or gastrointestinal symptoms.

Case presentation: We present the case of a 37-year-old male with autosomal recessive dystrophic EB complicated by chronic kidney disease who underwent living donor kidney transplantation. The patient has exhibited characteristic cutaneous manifestations of EB since birth, along with systemic involvement affecting mainly the genitourinary system. Subsequently, the patient developed nephrotic syndrome, prompting a kidney biopsy revealing endocapillary glomerulonephritis. The patient's journey began with the initiation of dialysis, a treatment that persisted for nine months until the transplantation process commenced The kidney graft was from the patient's sister, boasting haploidentical HLA matching. Preoperative preparation commenced seven days before the transplantation, with the initiation of antibiotic therapy to optimize the patient's condition. Anesthetic management strategized the placement of an epidural catheter at the Th11-Th12 level to ensure optimal sensitive and motor blockade with 20ml of 0.25% Bupivacaine, and continuous intravenous infusion with dexmedetomidine at a dose of 0.5mcg/kg/min was started before the initiation od surgery to provide sedation. During the whole procedure, the patient wasarousal and very cooperative.Surgery went uneventful. During the whole time of hospitalization, patient wounds dressing were made with bordered soft silicone. Hospitalization was without any complication and 12 postoperative day patient was discharged from the hospital.

Discussion: Anesthetic planning involved meticulous airway assessment, with a focus on minimizing skin trauma and maintaining hemodynamic stability. Postoperatively observation was required to prevent wound complications and optimize pain control.

Conclusion: This case underscores the importance of multidisciplinary approach involving dermatologists, nephrologists, urologists, anesthesiologistsand transfusion professionalsin managing the complex needs of patients with EB, especially those requiring surgical interventions and anesthesia.

Keywords: Epidermolysis Bullosa (EB); Chronic Kidney Disease; Kidney Transplantation;

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MULTIDISCIPLINARY COLLABORATION'S CRITICAL ROLE IN PERIOPERATIVE CARE: A CASE REPORT

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Introduction: The relationship in each surgeon–anesthesiologist dyad is perhaps the most critical element of overall team performance. A multidisciplinary approach and teamwork are recognized as essential for safe and high-quality perioperative care. A dysfunctional rela-tionship can promote unsafe conditions and contribute to an adverse outcome. Differences in information, opinion, values, experience and interests between a medical surgeon and an anesthesiologist could occur while working in environments with high pressure such as operating rooms, which can trigger conflicts.

Case report: We present a case of a 70-year-old man with a history of previously operated penile cancer, who was admitted for inguinal and iliac lymphadenectomy in the clinic for urology. The surgical procedure commenced under spinal anesthesia. However, intraopera-tively, the procedure took a totally different route. The patient underwent a thrombectomy and prosthesis placement of the vena iliaca communis. A vascular surgeon was consulted and included in the surgery. Due to the extensive nature of the intervention and the need for meticulous monitoring, the anesthesia modality was switched to general anesthesia with full invasive patient monitoring including in-vasive arterial pressure and central venous monitoring. The need for heparinization additionally postponed the surgery due to a previous neuraxial puncture. The operation lasted for 5 hours. Postoperative course proceeded uneventful, and the patient was discharged in good health.

Conclusion: This case underscores the importance of seamless teamwork between anesthesiologists and surgeons for successful intraoperative management and optimal patient outcomes. Despite the fact that there are numerous causes that are perceived to contribute significantly to conflict and disrupted working relationships between surgeons and anesthesiologists, collaboration and communication between these specialties are essential for addressing unexpected intraoperative challenges and ensuring the overall success of complex surgical interventions.

Keywords: Anesthesiologist, Surgeon, Teamwork, Intraoperative Management, Patient Outcome

THE EMBARKMENT OF A PERSONALIZED ACUTE KIDNEY INJURY DETECTION WITH THE USE OF SERUM CYSTATIN C

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Background and objectives: Acute kidney injury (AKI) is a serious potential complication of laparoscopic radical prostatectomy (LRP). Serum creatinine (SCr), the current standard, is an insufficient marker for AKI diagnosis since there is a delayed response of serume Cr crises. Biomarkers that are sensitive and rapidly measurable could allow early intervention and improve patient outcomes. We investigated the value of serum cystatin C as an early biomarker for AKI after LRP.

Design, setting, participants, & measurements: We analyzed data from 20 prospectively enrolled patients undergoing LRP. Serum samples were obtained at three times intervals: before LRP (T1); right after LRP (T2); and 12h from the beginning of LRP (T3). Serum cystatin C was quantified by nephelometry. The primary outcome was AKI, defined as a > or =50% increase in SCr or Serum cystatin C. A multivariable stepwise logistic regression analysis was used to assess predictors of AKI.

Results: One patient (4%) developed AKI using SCr criteria. Two patients (8%) developed AKI using Serum Cystatin C criteria. Serum cystatin C concentrations were significantly increased in AKI patients at T2 and remained elevated at T3. Maximal sensitivity and specificity for prediction of AKI occurred at T3 cystatin C cut-off of 1.16 mg/L. The 12-hour cystatin C strongly correlated with severity and duration of AKI as well as length of hospital stay. In multivariable analysis, 12-hour cystatin C remained a powerful independent predictor of AKI.

Conclusion: Serum cystatin C is an early predictive biomarker for AKI and its clinical outcomes after LRP.

Keywords: Serum cystatin C, Acute kidney injury, Serum creatinine

SESSION 10 - GERIATRIC ANESTHESIA

POSTOPERATIVE DELIRIUM IN THE ELDERLY PATIENT: DIAGNOSIS AND MANAGEMENT

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Introduction: Elderly patients presenting to the surgical departments are at high risk of developing postoperative delirium (POD) – an acute disturbance of attention and cognition associated with an unfavorable outcome and increased treatment costs, but potentially preventable. In this paper, through the presentation of a 72-year-old female patient who developed delirium after hip fracture surgery, we discussed essential questions about the complex neurocognitive syndrome of postoperative delirium.

Case presentation: The 72-year-old female patient, without confusion during the interview and with a medical history of hypertension, arrhythmia, hyperlipidemia, and osteoporosis, was admitted to the traumatology department for operative treatment of a fracture of the right femur neck. Even though the operation performed with spinal anesthesia was uneventful, the patient developed an acute change in mental status with the appearance of agitation, difficulty

focusing, fatigue and sluggishness, slurred speech, restlessness, rapid mood swings, uncooperative behavior, decreased appetite, sleep inversion, sphincter incontinence, and visual hallucinations with a fluctuating course. Other disorders were excluded after a complete physical examination and a panel of laboratory tests. Evaluation with the Confusion Assessment Method (CAM) confirmed a diagnosis of postoperative delirium. In an improved general condition, the patient was discharged for home treatment with a recommendation for further follow-up.

Discussion: Delirium is often unrecognized, misdiagnosed, and inadequately managed despite its frequency. Recognition requires cognitive screening and clinical observation. The main pillars of delirium management are prevention, screening, and early treatment. Multi-component, non-pharmacological, evidence-based interventions such as hearing aid and spectacle restoration, reorientation, early mobilization, pain management, sleep improvement, and nutritional support are more effective than pharmacological treatment. Pharmacological treatment of POD with antipsychotics has been shown to decrease survival and should be used with caution.

Conclusion: Postoperative delirium is associated with an unfavorable outcome but is still often misdiagnosed. Identification of patients at risk and early intervention can reduce the incidence and adverse effects of delirium. Further research is needed to identify at-risk patients and design better prevention and treatment strategies.

Keywords: Elderly Patient, Postoperative Delirium, Diagnosis, Management

POSTOPERATIVE ANALGESIA IN ELDERLY PATIENTS

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Introduction: Older people often require surgical treatment more frequently than younger individuals, leading to a steady increase in their numbers. When selecting analgesics and dosages, physiological changes and accompanying conditions should be considered.

Objectives: The main aim is to assess the importance of adequate analgesia in the postoperative period for patients. Inadequate analgesia can result in physiological disturbances, emotional distress, prolonged recovery, extended hospital stays, and increased costs.

Materials and Methods: This prospective pilot study involved 30 patients aged 60-80 years, ASA II/III, over 4 months. They underwent abdominal hysterectomy under general anaesthesia. Postoperatively, blood pressure, pulse, and oxygen saturation were monitored. Multimodal analgesic therapy was tailored to each patient based on weight and health status. A combination of non-opioid (Paracetamol, Metamizole, NSAID) and opioid analgetics therapy was used, starting with lower dosages in older patients and adjusting as needed.

Results: Pain, a complex and subjective sensation, was assessed using various scales. Pain assessment in elderly patients' can be challenging due to sensory changes and dementia. In our study, the average pain score among participants was 3 or less, indicating adequate postoperative analgesia.

Conclusion: Combined analgesic therapy in elderly patients provides satisfactory postoperative pain relief, facilitating quicker rehabilitation and shorter hospital stays.

Keywords: Pain, Postoperative Analgesia, Nsaids, Opioid Analgetics

THE INFLUENCE OF PREOPERATIVE HEMOGLOBIN LEVELS ON MORTALITY AMONG ELDERLY INDIVIDUALS WITH OSTEOPOROTIC HIP FRACTURES

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Background: Hip fractures in individuals with osteoporosis undergoing surgical intervention are associated with an increased risk of adverse health outcomes and mortality. Previous research indicates that admission hemoglobin levels below 100 g/L are significantly associated with heightened mortality risk.

Aims: This study focuses on evaluating mortality outcomes in individuals suffering from osteoporotic hip fractures, with a specific emphasis on comparing patients with preoperative hemoglobin levels equal to or greater than 100 g/L to those with levels below 100 g/L.

Material and Methods: A retrospective observational study was conducted over a three-year period, involving 200 individuals who had experienced osteoporotic hip fractures necessitating surgical intervention. Patients were selected based on admission hemoglobin levels, categorized into two groups: those with preoperative hemoglobin levels ≥100 g/L and those with levels <100 g/L.

Results: Out of the total sample size of 200 patients, the mortality rate was found to be 31.5% (n=63/200). There was a predominance of females (120 patients – 60%), with a mean age of 74.36±8.1 years (range: 67-75 years). The majority of patients sustained AO OTA type 31A2 fractures (58%), while the rest had AO OTA type 31A3 fractures (42%). Among these patients, 76 individuals (38%) experienced an increase in hemoglobin levels to ≥100 g/L following red blood cell transfusion. Multivariable analysis demonstrated a 55% reduction in mortality risk among patients with preoperative hemoglobin levels ≥100 g/L compared to those with levels <100 g/L ($p<0.05$).

Conclusion: In individuals with hip fractures caused by osteoporosis and admission hemoglobin levels below 100 g/L, raising hemoglobin levels to 100 g/L or above prior to surgery significantly decreases the likelihood of mortality. The evaluation and management of preoperative hemoglobin levels are crucial considerations for patients undergoing hip surgery, contributing to improved outcomes and reduced mortality risk.

Keywords: Hip Fracture, Hemoglobin Level, Mortality

ANESTHETIC CHALLENGES IN THE ELDERLY PATIENT WITH SEVERE HEART FAILURE: A CASE REPORT

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Introduction: Heart failure is a huge challenge for anesthesiologists because of the profound effect of anesthetics on myocardial and vascular function. Effective management demands meticulous attention to detail and a tailored approach to mitigate the cardiovascular risks associated with anesthesia. In this case study, we discuss our comprehensive anesthesia management for the operative treatment of inguinal hernia in an 87-year-old man with a history of severe heart failure.

Case Presentation: The 87-year-old patient was admitted to our hospital for open inguinal hernia repair. Of comorbidities, he had severe heart failure with an ejection fraction of 35%. Undergoing surgery necessitated a carefully planned anesthesia strategy, prioritizing hemodynamic stability and optimal pain control. Utilizing noninvasive monitoring techniques, we ensured vigilant observation throughout the procedure. Regional anesthesia via ultra-

sound-guided ilioinguinal-iliohypogastric nerve block with Bupivacaine (0.5%, 10ml) and Lidocaine (2%, 5ml) was chosen to minimize systemic drug exposure. Complementary sedation and analgesia were achieved with Midazolam (0.25mg), Ketamine (25mg), and Paracetamol (1.0g), effectively maintaining the patient's comfort and stability. Notably, vital signs remained stable, and the patient reported no pain or vomiting postoperatively, indicating the success of our comprehensive anesthesia strategy.

Discussion: Effective anesthesia management in heart failure patients necessitates meticulous planning and a nuanced approach. Regional anesthesia offers notable advantages by providing targeted pain relief while minimizing systemic drug exposure. This case underscores the importance of reasonable drug selection, fluid management, and continuous monitoring to optimize outcomes in elderly patients with cardiac comorbidities.

Conclusion: Careful consideration of anesthetic agents is paramount in mitigating anesthesia-related risks, especially in elderly patients with heart failure. Through the utilization of regional anesthesia and a multidisciplinary approach, successful perioperative management was achieved in our patient. This approach ensured hemodynamic stability and facilitated superior postoperative pain control with minimal sedative effects, ultimately enhancing the overall patient experience and outcome.

Keywords: Anesthesia Management, Elderly Patients, Heart Failure, Regional Anesthesia

OPTIMIZING ANESTHESIA STRATEGIES FOR HIGH-RISK PATIENTS: LESSONS FROM A CASE OF MIDAZOLAM-INDUCED RESPIRATORY DEPRESSION

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Introduction: Pre-operative administration of benzodiazepines can indeed precipitate hypoventilation, characterized by a decrease in minute ventilation, commonly termed "respiratory compromise or respiratory depression." This condition can result in elevated carbon dioxide (hypercarbia) and reduced oxygen levels (hypoxemia), increasing the risk of respiratory complications.
Case presentation: We present a case of a 76-year-old patient with terminal kidney failure undergoing hemodialysis for five years, presenting to a vascular surgeon with redness on his left arm, where his arteriovenous fistula was located. Detailed examination, including echo sonography, revealed a local infection with an aneurysm on the fistula, necessitating surgical intervention. Given the patient's numerous comorbidities, including advanced age and renal failure, an anesthesiologic approach involving an oxygen mask, premedication with 1mg Midazolam, and ultrasound-guided left supraclavicular block was chosen as the optimal strategy. The surgical intervention proceeded smoothly, with the patient sleeping throughout the procedure, accompanied by persistent snoring. However, upon its completion, the patient failed to awaken. Arterial gas analysis revealed respiratory acidosis, likely attributed to Midazolam-induced respiratory depression. Flumazenil, a benzodiazepine receptor antagonist, was administered promptly, resulting in the patient's rapid awakening.

Discussion: This case highlights the critical need for vigilant monitoring and careful consideration of medication choices, particularly in elderly patients with complex medical histories. While Midazolam is commonly used for sedation, its potential for respiratory depression, especially in high-risk populations, warrants close attention and preparedness to manage complications effectively. Avoiding its use, except when necessary due to patient distress, is prefer-

able. It should be administered cautiously, with dose adjustments based on age and overall health.

Conclusion: Our case emphasizes the significance of tailored anesthesia strategies for elderly patients with multiple medical conditions undergoing vascular surgery. The selected approach, including Midazolam premedication and ultrasound-guided block, effectively managed the procedure despite the patient's complex health profile. This underscores the importance of individualized care to optimize surgical outcomes and minimize risks

Keywords: Benzodiazepines, Respiratory depression, Perioperative medication, Geriatric anaesthesia, Medication choices

SESSION 11 - MISSCELANEOUS

IMPLANTABLE INTRAVENOUS PORTS - YES OR NO?

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Introduction: The need for long-lasting intravenous access in the medical practice is quite large. The use of intravenous cannulas is essential in anesthesiology, but it is limited because of the short use due to quick irritation of the skin when we infuse more concentrated medications and infusions. That is why anesthesiologists use special central venous catheters – CVC, which can be used for a longer time, but still usually restricted to use in hospital setting because due to close puncture site in the skin and possible infection.

Aim of study: That is why when we have indication for longer application of infusion therapy, chemotherapy, total parenteral nutrition and frequent withdrawal for laboratory tests we can use tunneled CVC, or even better implantable intravenous ports under the skin which are best solution for such patients. In this paper we would like to give the history of intravenous accesses in anesthesia praxis and our experience in PZU Remedika with setting up, maintaining and use of implantable ports. Anesthesiologists are most experienced professionals in using central vein catheters, and in Macedonia almost more than 20 years ago Prof. Dr. Marija Soljakova and colleagues started to use implantable ports in pediatric and later adult patients. The start was difficult but soon it became a routine and with larger number of patients with implantable ports, it became necessary for education of medical personal for use and maintenance of ports.

Conclusion: Most frequent indication for ports is for oncologic and hematologic patients. In Remedika we also mostly have such patients. Though the personal in Oncology or Hematology Clinic is experienced in use with ports we always give remainder instruction for sterile use and maintenance. Do we need implantable ports for patients – YES

Key words: Implantable port, Hickman, CVC

ASSESSING THE PERTINENCE OF SYNDESMOSIS REDUCTION IN CASES OF ANKLE FRACTURES

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Background

Ankle fractures are on the rise globally, often due to active lifestyles in younger individuals and poor bone quality

in the elderly. Syndesmotic disruption accompanies about one-fifth of ankle fractures, typically treated with a metal screw fixation. However, methods for evaluating syndesmotic reduction are limited.

Objective

This study aimed to assess the impact of syndesmotic reduction quality, evaluated via postoperative CT scans, on short-term functional outcomes.

Study Design & Methods
Conducted from January 2018 to January 2021, it involved 43 participants meeting inclusion criteria. Fractures were reduced and fixed following AO principles, with syndesmotic disruption confirmed by lateral stress test and fixed with a tricortical screw. Postoperative rehabilitation was initiated after three weeks, and screws were removed around eight weeks postoperatively.

Follow-ups at three, six, and twelve months post-surgery evaluated outcomes using the AOFAS score and VAS scale. Postoperative CT scans assessed radiologic parameters, including fibular rotation and tibiofibular distances.

Results

Results showed a predominance of males (62.79%) with a mean age of 55.4 years. Most fractures were type B (69.77%), with 86% achieving anatomical reduction.

Functional analysis revealed a strong association between reduction quality and outcomes. Anatomic fixation of the syndesmosis, typically with a single screw, was crucial for optimal functional outcomes. However, the effect of syndesmotic reduction quality on short-term outcomes warrants further research, particularly considering accompanying risk factors like diabetes, obesity, and smoking.

Conclusion

In conclusion, meticulous preoperative planning is essential for ankle fractures. Anatomic syndesmotic fixation is vital for optimal outcomes, emphasizing the importance of assessing reduction quality. Further studies are needed to explore the broader impact of syndesmotic injury and associated risk factors on functional outcomes.

Keywords: Syndesmosis Reduction, Ankle Fractures, Surgical Fixation

RARE GENETICS IN THE AMBULATORY SETTING – SOTOS SYNDROME

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Background: Sotos syndrome also known as cerebral gigantism is a rare genetic disorder in which individuals have a mutation in the NSD 1 gene which regulates the body's growth.

Case report: We report a 33 years old patient with menorrhagia scheduled for a diagnostic and therapeutic dilatation and curettage of the uterus under anesthesia. The patient had her medical history taken and was noted that she had Sotos syndrome. Physical examination revealed a pronounced large head with retrognathism and narrowing of the lower jaw(MP3 and TMD <2cm) and a BMI >35. Also, it was noted that the patient had behavioral impairment. The patient received preprocedural sedation – midazolam 2mg and was shifted to the intervention room. Standard monitoring was used and the patient was further anesthetized with ketamine 20mg, fentanyl 100mcg which sedated the patient to a RASS scale of -2 and a paracervical block was also applied. The intervention was uneventful and the patient was discharged after 2 hours.

Discussion: Cardinal features of the syndrome are a dolichocephalic skull, long narrow face, a small narrow and pointed chin, large hands and feet, cognitive impairment, muscle hypotonia and delayed motor, cognitive and social development. Although scarcely, other organic systems may be involved – heart, kidneys and visual/hearing impairment. The anesthesia plan was tailored according to the specifics of the patient-the behavioral impairment may cause difficulty in collaboration with the patient which was obtained with the preprocedural sedation and the pronounced physical characteristics – large scull, face and jaw/chin can cause difficulty in obtaining an airway, hence the anesthesia plan aimed to avoid sedation to a point of apnea while providing analgesia with the paracervical block.

Conclusion: Contemporary medical care increases the lifespan of people with rare genetic syndromes and tailoring anesthesia needs is become frequent in ambulatory settings.

Keywords: Sotos syndrome, Genetic disorders

CENTRAL VENOUS CATHETER PLACEMENT IN A PATIENT WITH ABNORMAL VENOUS ANATOMY: A CASE REPORT

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Introduction: For critically ill patients, central venous catheter insertion is a routine and frequently required procedure. The internal jugular vein is the most commonly used central vein, followed by the subclavian and the femoral. Use of ultrasound could lower the risks associated with insertions.

Case presentation: We describe a case of a 70-year-old female, with severe obesity, (BMI > 30 kg/ m^2), hypertension, DM2ID, AFF, thyrotoxicosis. The patient was stationed in the ICU due to progression of the thyrotoxicosis. On admission she was unconscious, hypoxemic, dyspneic and hemodynamically unstable. Acid base status was interpreted as metabolic acidosis. Shortly after admission in ICU she was intubated and put on mechanical ventilator. Central venous catheter insertion was indicated and the internal jugular vein was chosen. After multiple unsuccessful attempts, we decided to use ultrasound for better visualization of the anatomical structures. We found out displacement of the internal jugular vein about 3 cm lateral presentation due to thyroid gland enlargement. The CVC was successfully inserted after first attempt without further complications.

Discussion: To help with orientation of the deep path of CVC insertion, there are surface anatomic landmarks. But the proportions and anatomical relationships vary by gender, alter with normal aging, and are affected by conditions like high BMI. However, precise visualization of the anatomical features and blood arteries is provided by ultrasound guidance. In our instance, the patient had an enlarged thyroid gland that was not clinically apparent. Despite the blind technique, the usage of ultrasonography in this particular situation proved successful on the first try.

Conclusion: The case highlights the effectiveness of ultrasound in improving the success rate and safety of central venous catheter insertion, particularly when anatomical variations pose challenges.

Keywords: Central Venous Catheter, Landmark, Thyroid Gland, Ultrasound.

NASAL HAEMANGIOMA A CAUSE FOR EPISTAXIS:A CASE REPORT

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Introduction: Hemangiomas are benign vascular tumors, which originate from vascular structures. They rarely arise in the nasal cavity. Histologically there are three types of hemangiomas including capillary, cavernous, and mixed types. The most common being cavernous hemangioma which usually present with unilateral nasal obstruction and nose bleeds.

Case report: We report a case of a 45-year-old female with nasal hemangioma in the left nasal cavity presented with on and off epistaxis and progressive unilateral nasal obstruction, successfully treated by the trans-nasal endoscopic excision technique. Examination of the nasal cavity with anterior rhinoscopy combined with trans-nasal endoscopy revealed a polypoid, reddish colored mass in the left nasal cavity arising from the lateral wall. Further investigations were ordered, CT scan of the nasal cavity was performed, corresponding to the endoscopic findings. Complete resection of the tumour was achieved by trans-nasal endoscopic surgery and the bleeding was controlled with thermocautery as well as with nasal packing, which was removed 2 days later without recurrence of bleeding. The site of origin of this tumor was the mucous membrane of the left middle meatus and was determined only during the procedure. Histopathological study of the tumor showed changes who correspond to a cavernous hemangioma. The patient followed a satisfactory post-operative course and was discharged from the hospital after 2 days. The follow-up consisting of nasal endoscopy, revealed no recurrence of the lesion with no other episodes of epistaxis present.

Conclusion: Epistaxis is a common symptom of nasal vascular lesions and the ENT surgeon should suspect the presence of a nasal hemangioma. Early detection and trans nasal endoscopic surgical technique is reliable and effective approach for complete hemangioma removal with control of bleeding.

Keywords: Nasal Hemangioma, Epistaxis, Surgery

PERITONSILLAR ABSCESS – THE MOST COMMON COMPLICATION OF ACUTE TONSILLITIS

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Introduction: Peritonsillar abscess is an inflammatory process in which purulent content accumulate in the peritonsillar space between the tonsillar capsule and the upper constrictor muscle. Usually occur as a complication of tonsillitis. If the infection breaks out of a tonsil and spreads to the surrounding area, an abscess can form. Cultures most commonly reveal Group A beta-hemolytic streptococcus..With an incidence of approximately 1 in 10,000, it is the most common deep head and neck space infection that presents in the emergency department.

Case report: We present a case of 20-year-old female patient who was referred to our clinic by University Clinic for Infectious Diseases and Febrile Conditions due to suspicion of the presence of a peritonsillar abscess. The symptoms are present three weeks before the examination with a sore throat, low-grade fever, malaise, and two days before admission. The symptoms become more severe such as difficulty in swallowing and speaking, as well as pain in the right ear. Oropharynx examination revealed – palatine tonsils hypertrophy and hyperemic with protrusion of the right palatine tonsil towards the medial. Blood test showed Neutrophils -68.0; Leukocyte -11,8; CRP -105; Immediately after admission realized incision in the region of the peritonsillar abscess and we received a massive pus content. Double intravenous antibiotic and corticosteroid therapy was applied. During the hospital treatment in two occasions we realized dilatations in the peritonsillar zone. During the follow up after 6 days of hospital treatment the patient

was feeling better and relesed home to continue with per-os antibiotic and corticosteroid therapy.

Conclusion: We can conclude that it is important for the treatment of peritonsillar abscess to make a correct incision and dilation, and to prescribe an appropriate antibiotic therapy.

Keywords: Peritonsillar Abscess, Swallowing Disorder, Incision

ACUTE MASTOIDITIS WITH RETROAURICULAR ABSCESS IN ADULT - CASE REPORT

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Introduction: Acute mastoiditis with retroauricular abscess represents a rare but potentially serious condition in the adult population. Management of it hinges on a multimodal approach, incorporating medical therapy and surgical intervention. Empirical antibiotic selection is guided by local antimicrobial resistance patterns and the severity of clinical presentation. Surgical options range from simple incision and drainage under local anesthesia to more extensive procedures such as mastoidectomy, depending on the size and extent of abscess formation, as well as the patient's overall clinical status.

Case report: A 19 years old male patient without medical history or comorbidity, is presented with otalgia for 3 days earlier, erythema and swelling in right mastoid area. On physical examination a tender-fluctuating mass in the retroauricualar region was observed. CT findings of pyramidal process: complete reduction of pneumatization of mastoid cells which are filled with inflammatory substrate, disruption of the mastoid bone and connection with the surrounding extracranial soft tissue. The patient was admitted to the hospital and underwent cortical mastoidectomy with myringotomy and application of auditory tube was done. During the operation mastoid cells were filled with granulation tissue. A thick purulent discharge was aspirated form the tympanic cavity. Part of the surgical material was sent for histopathological analysis. The results confirmed granulation tissue. After appropriate therapy with systemic antibiotics and corticosteroids, the patient was discharged in good general condition.

Conclusion: In conclusion, acute mastoiditis with retro auricular abscess in adults presents a significant clinical challenge due to its potential complications and sequelae. Timely diagnosis is crucial, as delayed intervention can result in further spread of infection and intracranial complications.

Keywords: Acute Mastoiditis, Subperiosteal Abscess, Complications, Surgical Options

ACUTE UNILATERAL PANSINUSITIS AS A COMPLICATION OF SPONTANEOUS FRACTURE OF THE SECOND MOLAR

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Introduction: Odontogenic acute unilateral pansinusitis is inflammatory condition of the paranasal sinuses that is the result of dental pathology, resulting from prior dentoalveolar procedures, infections of maxillary dentition or maxillary dental trauma.

Case presentation: A 48 –year old patient visited our Clinic due to headache and swelling on the left side of the face, symptoms that appeared after the spontaneous fracture of the second molar on the upper left side, after which purulent secretion was drained. A CT of PNS showed a retention cyst at the bottom of the left maxillary sinus, obstructed ethmoidal cells, liquid content at the bottom of the left frontal sinus, thickened mucosa at the bottom of

the sphenoidal sinus and obstructed ostiomeatal complex. She was prescribed oral dual antibiotics, oral and nasal corticosteroid and decongestive nasal drops. Two days after the end of the prescribed therapy, the patient comes back for an examination with edema of the lower eyelid on the left, swelling on the left side of the face and purulent rhinorrhea. She was admitted in our Clinic, placed on dual antibiotic and corticosteroid intravenous and intranasal therapy, regular local anemization and aspiration of purulent secretions from the nose. An MRI was performed with signs of slight improvement in the process compared to the CT. The patient was referred to the Clinic for Maxillofacial Surgery for further endodontic treatment.

Conclusion: Dental pathology can represent the primary cause of unilateral pansinusitis. The proximity of the teeth to the floor of the sinus allows odontogenic infections to penetrate from the oral cavity to the maxillary chamber. OP requires a multidisciplinary approach to successful disease resolution.

Keywords: Paranasal Sinuses, Oodontogenic Pansinusitis

TRANS-BRONCHIAL BIOPSY - DIAGNOSTIC TOOL TO LUNG CANCER: PRESENTATION OF A CASE REPORT

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Introduction: Trans-bronchial lung biopsy is the method of choice for diagnosis of pulmonary lesions and can be used for diagnosis of a wide range of pulmonary diseases such as interstitial lung diseases, vascular diseases, small airway diseases, malignancies such as disseminated form of the alveolar cell carcinoma and infections.

Case report: We present a case of a 38 years old male who was diagnosed and treated as pneumonia at his regional hospital but after having no improvement, was transferred for further diagnosis at our hospital. Patient complained productive cough, effort dyspnea, fever up to 39-degree Celsius, low back pain, loss of appetite and general weakness. Patient underwent some examination which resulted as below: Computerized tomography: Peri-subhilar infiltration of left lung, suggesting carcinomatous lymphangitis, without excluding primary origin. Radiologist suggests endoscopic examination. Multiple blast and lytic lesions of the skeleton, suggesting secondary origin. Thoracentesis was made at the emergency unit and based on Light's criteria it was an EXUDATE. Evaluation of cyto-pathological data and IHC suggest a (adeno) carcinomatous process originating from upper gastro-intestinal tract. Bronchoscopy: Trachea, primary bronchus and their lobar and segmental branches with hyperemic mucosa and a few muco-viscous secretions. There was not seen any infiltration of airways or any sign of bleeding. Trans-bronchial biopsy was taken at the X-th segment of the left lung. Histopathological result suggested Mucinous lung adenocarcinoma. During hospitalization patient became agitated and started having difficulties on speaking leading to aphasia. CT and MRI of head resulted with multiple ischemic lesions with left cerebellar, bilateral frontal-parietal-temporal-occipital cerebral localization. Neurologist and neuro-surgeon consultation: Ischemic stroke due to malignant disease. Oncologist consultation concluded Lung Cancer T4N2M1a – Stage IV A and Suggested palliative care due to stroke complication. Patient left hospital and passed away two weeks later at his home.

Conclusions and discussions: Compared with open lung biopsy, trans-bronchial biopsy has lower morbidity and mortality. Trans-bronchial biopsy is indicated in the following settings: neoplastic disease, suspected sarcoidosis or hypersensitivity pneumonitis, interstitial lung disease, pulmonary infection or unusual and unclear lung disease. Data suggests higher sensitivity of trans-thoracic biopsy compared to trans-bronchial approach, especially when lesions are peripheral and less than 2 cm, but lower safety profile. As the success of a diagnostic test should result from a proper balance between accuracy and procedure-related complications, trans-bronchial approach has been shown to have a better safety profile.

Keywords: Transbronchial biopsy, Mucinous Carcinoma, Biopsy

MODERN VS. "OLD FASHION" MEDICINE: A CASE REPORT

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Introduction: Sometimes, in clinical practice, going to a diagnose becomes a challenge. Physicians always tend to use the "old fashion" medical examinations and then prescribe lots of medications, mostly antibiotics and do not investigate for further diagnostic and treatment options. This leads sometimes to misdiagnosis. It is very important to have an overall evaluation of the patients, even in a multi-disciplinary mode, in order to go through the right diagnostic path.

Case report: We present a case of 21 years old female who complained productive cough, fever up to 39-degree Celsius, severe weight lost and dyspepsia. Patient underwent some examination which resulted as below bilateral infiltrates in both lower lobes of the lunges, leukocytosis, elevated RCP and negative sputum smear for bacteria and tuberculosis. The patient underwent Computerized tomography which resulted with achalasia of the esophagus and bilateral lung consolidation in the lower lobes, probable aspiration pneumonia due to achalasia of the esophagus. Esophageal achalasia was diagnosed, besides of first impressions and diagnosis. We tried to get a more detailed medical history, and more detailed bedside examination. After carefully examination and detailed medical history: recurrent pneumonia episodes (aspiration), bad smelling breathing, nausea and vomiting, severe weight loss. The patient was recommended to a more specialized care on a surgery department.

Conclusions and discussions: Even after more than 100 years, the chest Xray is still an important technique to detect important pathological changes of lungs, heart and vessels in a fast and low-dose manner. By now we should be able to better understand the key differences between a chest X-ray and a chest CT scan. We don't need to rush to decide which approach suits you the best to our patient. Remember, all instances are different and require an individual approach. Other physicians or more specialized doctors in order to have the right diagnosis are a key to go through the right diagnose in the fastest way.

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NEONATAL AIR LEAK SYNDROME

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Introduction

Air leak syndrome is a clinical condition, resulting from overdistension of the alveoli and the terminal airway, leading to their disruption and leakage of the air in the extra-alveolar spaces. It is more frequent in the neonatal period, especially in the presence of underlying lung condition, prematurity, low birth weight and respiratory distress syndrome (RSD). Clinical presentation ranges from asymptomatic to life threatening condition.

Case report

We present a case of a preterm (36GN) admitted to the ICU with signs of RDS. After admission the patient was put on non-invasive ventilation and parenteral therapy. Due to worsened respiratory insufficiency the neonate was intubated and put on mechanical ventilation, and surfactant was administered. The chest X-ray showed a right lobar pneumothorax with complete collapse of the right lung. A chest drain was inserted urgently.

On the following X-ray, the presence of pneumomediastinum was suspected with concomitant subcutaneous emphysema. A contrast enterography and CT scans were made, that excluded possible diaphragmatic hernia. After the reduction of the pneumothorax, the chest tube was removed. After 5 days on mechanical ventilation, the neonate was extubated and put on non-invasive ventilation, which was converted into spontaneous breathing without oxygen support. The final X-ray showed a total resorption of the air in the pleural and mediastinal space.

Conclusion

Air leak syndrome is more frequent in the neonatal period, due to the immaturity of the neonatal lung in the presence of risk factors like prematurity, low birth weight and surfactant deficiency. The treatment options depend from the form of NALS: moderate forms need only supportive therapy, but severe forms need an invasive therapy. The most important step in neonatal care is the prevention of the NALS, with minimizing the risk of lung injury in the high-risk newborns, starting with gentle resuscitation in the delivery room.

Key words: neonatal air leak syndrome, case report

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