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BURNS REHABILITATION PROGRAM IN MACEDONIAN CENTER FOR BURNS TREATMENT

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Abstract

Burns can be caused by war trauma or by trauma at home or work place. There are standards of treating them by Helsinki declaration of WHO. The aim of our study is to access the quality of rehabilitation in our National Center for Burns treatment. Material and method: The 146 patients treated in 2013, in our center, were analyzed by age, sex and level of rehabilitation. Results: Most of the patients were male and in adult age. 61%, injured at work or by electric storm. The levels of rehabilitation were high. Each rehabilitation plane was individual with early mobilization, application of orthoses and correction in bed. Discussion: The management of patients with burns in medical center is by proposals of WHO exactly determined. Conclusion: good collaboration between Burn center and peripheral emergency care units together with high quality of treatment in our center is resulting with low mortality.

Key words: burns, treatment in center, rehabilitation.

Introduction

Burns are injuries from high temperature, or hyperthermia on the skin and other tissues due to electric current, chemical means, dry heat, hot gases, hot liquids, ultraviolet/ infrared radiation, radioactivity and more.(1) Patients' skin is most usually damaged but muscles, bones, blood vessels and internal organs such as lungs can be affected too. Stage 1 of burns, can cause pain, swelling, and redness (that may last for 2-3 days) and skin peeling. In the second stage despite the redness there are bullae that are filled with clear fluid. Pressure pain occurs and the wound is moist. The largest impairment is in the fourth level. All skin and subcutaneous tissue, muscle, bones and blood vessels are damaged. The burns are black, painless and insensitive. If the patient has burns on the hair and nose we should be suspecting inhalation of gasses and burns, followed by wheezing, hoarseness and breathing scraping.

According to the U.S. joint as severe burns, are considered: second-degree burns with > 20% body surface area, second degree with > 10% body surface area, for the elderly and children, third degree with > 5% body surface area, electricity burns, inhalation burns, and chemical burns from the functional parts of the body, and burns in people with many other comorbidities.(2) The clinical picture depends on the degree of burns, tissue type and the type of agent. It is determined by the rule of the nine.

Burns have several clinical signs and symptoms with whom the body's responses to the action of heat such as: hypovolemic shock, acute toxemia and septicemia. Treatment consists in dealing with pain, hypovolemia, prevent infection with antibiotics, analgesic, anticoagulant therapy, substitution with electrolytes and blood derivatives. Sterile dressing materials, disinfectants, antibiotics, biological dressings, aft graft, allograft, synthetic substituents and tissue cultures are applied. On 23 August 2004 in the context of the 12th Congress of the International Society for Burns Injuries (ISBI), WHO and ISBI issued a new fact sheet on burns, which describes the extent of the problem globally. (3,4)

The organizing of Burn center services is very difficult in low economic countries. There are many limits such as lack of special centers, equipment, educated medical stuff and low level of preventive activities. The most of the injuries are caused by war, accidents at work, women at home and also accidents related with children under age of 5 .(5,6)

The Center for treatment of burns in Macedonia since 2000, have treated patients wit all standards and used amnion for dressing. The treatment is carried out in a special section where there are special sterile conditions and microclimate temperature of 28-42°C, with standard humidity and $_p$h.

The aim of our study was to access the level of rehabilitation in our Center for burns treatment.

Material and method

To access the level of rehabilitation in the Center for Burn treatment, we have used the medical documentation from year 2013, with permission of the Head of the center and took info from every nurse that is working there. The patients were analyzed by sex, age, localization of burns, and mortality. The level of rehabilitation process in intensive care unit was analyzed by activity conducted to each patient (correction, exercises, and orthoses).

Results

In this center there were 146 patients (2013 year), female 49(33.6%) and male 97 (66.4%). From them 7 (4.8%) were children and 14 adolescents (9.6%), adults 61% and old people 34%. It is showed in table 1 and frequentation by age in table 2. The mortality in 2013 was 0%,

Table1. Frequentation by sex

Sex	Frequentation	%
Male	97	66.4
Female	49	33.6
Total	146	100

Table.2 Distribution by age

Age	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	>80	Total
Freq.	7	14	25	16	24	24	21	6	9	146
%	4.8	9.6	17.1	11	16.4	16.4	14.4	4.1	6.2	100

The rehabilitation plane and frequentation of patients by localization are showed in table 3. The most of the patients 45% had burns on lower extremity. Also the stage and percentage have high impact on the mortality rate

Table.3 Activity of rehabilitation plane by localization of burns

Localization	Head and face	neck	Upper extremities	Lower extremities	Trunk
Frequentation N=146	13	12	19	66	36
%	9	8	13	45	25
Acute rehabilitation plane at intensive burn care unit	-silicon masks, -exercises for face muscles -massage by scare formation –breathing exercises - psychologic al support	-orthoses -exercises - breathing exercises -mobilization -Passive exercises by intubate patients, -Neck exercises	-orthoses -daily activity exercise -feeding , -dressing -prevention of contracture and muscles atrophy, -massage of recovery wounds	-mobilization -active exercises -orhtoses -prevention of contracture and muscles atrophy, -prevention of scares and circulatory complication, -body correction in bad	- breathing exercises -prevention of pressure wounds -mobilization -prevention of contracture -prevention of scares and circulatory complication, -body correction in bad

Discussion

Management of combat casualties with severe burns and associated traumatic injuries requires a coordinated interaction of surgical, critical care, and evacuation assets. These patients present an enormous challenges to the entire medical system as a result of the severity of injury combined with the great distance required for transport to definitive care.(7) Our patients were from Macedonia and Kosovo. The transport from peripheral area to center was organizing in optimal time.

Fluid resuscitation during the first 24 to 48 hours after injury remains a significant challenge for all who manage burn casualties. Guidelines along with the standardization of burn wound care and continued providing of education have resulted in decreased morbidity and mortality in special care units or in all ambulance at the emergency care department. The Center in Macedonia has all standards and uses placenta membrane for burns covering.(7,8,9)

Organization of Burn centers needs special team of medical staff with a doctor specialist for burns care, usually plastic surgery specialist, nurse educated for special care for burns, physiatrists, physiotherapist and psychological support. The collaboration with family and rehabilitation after going home is also important. (10,11,12) In Macedonia the patients were treated in our Burn center located in the capital city Skopje. The economic impact of burns also includes loss of wages and the costs related with deformities caused by burns. Rehabilitation has goals to restore functional ROM, strength, mobility and producing a cosmetic result acceptable for the patient.(13,14) With our treated patients all standards for rehabilitation were included.

In consulted studies most of the injuries were done by war trauma and on civilians from who most of them were women at home. Since the undeveloped countries have low standard for burn care the consequences and mortality are high. (13,14,15,15) In our research 7 (4.8%) were children and 14 adolescents (9.6%), adults 61% and old people 34%. The more of them were male 66.6%. The adult patients were 61% and they were injured at work.

Rehabilitation program for each patient with burns is individual and it depends of localization of injury and. We have consulted many studies with their experiences in rehabilitation of patients with burns. Our activities in rehabilitation program is consisting of mobilization, active exercises, orhtoses, prevention of contracture and muscles atrophy, prevention of scares and circulatory complications, body correction in bed and breathing exercises.

Conclusion

From our investigation we can conclude the following: We have modern burns care Center in capital City, Skopje, it was established in year 2000. The patients from our country and our surrounding are treated there, with organized health system with proposals according to Burn treatment by WHO. Patients have high medical treatment with medicaments, care and rehabilitation program. The low mortality in the last years is a result of the quality of treatment and the percentage of injuries located on the skin.

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