and apheresis was successfully carried out in all cases. TnI was measured at baseline before G-CSF administration and at various time points in the course of mobilization (AccuTnI, Access Immunoassay Systems, Beckman Coulter). Baseline values were normal. In all these donors higher TnI levels were observed after G-CSF, with peak values exceeding upper reference limit (median 0.15 ng/ml, range 0.06-0.24).
Conclusions: cardiac biomarkers are not routinely determined in asymptomatic donors. TnI alterations have been observed with a high frequency in our small series, in the absence of clinical evidence of myocardial ischemia. In the presence of normal baseline values, TnI and CK-MB elevations might be associated with subclinical myocardial injury and might be predictive of major adverse cardiac events. Since donor safety is a major issue in the setting of peripheral blood stem cell (PBSC) donation, the clinical impact of cardiac biomarkers elevation should be studied in a larger series and the underlying mechanism should be investigated.

P1144
Soluble CD40L levels in bone marrow donation
F. Wenzel, M. Heke, M. Hauser, J. Rox, J. Fischer
University Düsseldorf (Düsseldorf, DE)

Introduction: Soluble CD40 ligand (sCD40L) is a member of the tumor necrosis factor family and was shown to modulate inflammatory and thrombotic reactions. Additionally, it is well known that sCD40L levels are clearly affected by preanalytic conditions, especially by platelet activation. Therefore we examined sCD40L levels in peripheral as well as in bone marrow (BM) derived blood samples.
Methods: In five healthy BM donors, plasma (anticoagulated by EDTA (1.8 mg/mL)) of peripheral blood (PB) as well as of BM derived blood (harvested by puncturing the iliac crest) were collected and compared to the respective serum samples. Additionally, sCD40L was measured in the respective BM derived cell product (anticoagulated by citrate (5.5 mg/mL) and heparine (10 IU/mL)). sCD40L levels were determined by an commercially available ELISA-Kit (R&D Systems).
Results: In comparison to PB plasma (238 ± 137 pg/mL) sCD40L levels of BM plasma (1330 ± 593 pg/mL) and of BM derived cell products (941 ± 425 pg/mL) were significantly elevated. However, sCD40L levels of BM plasma were within the same range as BM serum samples (1529 ± 394 pg/mL). Furthermore, platelet count in BM derived cell products (117±26 x 10*9 platelets/L) was reduced compared to PB (296±42 x 10*9 platelets/L).
Conclusions: In BM plasma samples, sCD40L levels were elevated up to a range typical for serum samples indicating an insufficient anticoagulation by standard EDTA concentrations for these blood samples. In BM derived cell products showing reduced platelet counts compared to peripheral blood, sCD40L levels found to be significantly lower than the respective serum values, indicating a sufficient inhibition of platelet activation and suggesting that sCD40L concentrations in bone marrow are clearly higher than in peripheral blood.

P1145
A comparison of Auto-PBSC and MNC (Cobe Spectra). A pilot study
B.S. Sorensen, A. Thomsen, B.K. Moller
Aarhus University Hospital Skejby (Aarhus, DK)

Background: Peripheral blood stem cells (PBSC) are used as source for stem cell transplantation. Cobe Spectra's MNC program is the most used method for PBSC collection, but auto-PBSC is fully automated and therefore not dependent on operator interactions. Auto-PBSC has been used in our centre with a high collection efficiency (CE) in patients (median 58 %), but less satisfactory in donors (median 47 %). Therefore, MNC program was introduced to collect PBSC from healthy donors.
Methods: Whole-blood to ACD ratio 10:1. Auto-PBSC, version 6.1: Harvest volume 5 ml, chase volume 3 ml. MNC, version 6.1: Collect flow rate according to white blood cells and the percentage of mononuclear cells. All donors were adults, healthy, related or unrelated.
Results: Four donors donated one day with auto-PBSC and one day with MNC, all women, median age 51 (43-64), table 1. In 2010 a total of 18 collections in 12 donors with auto-PBSC and a total of 7 collections in 6 donors with MNC were performed, table 2.
Conclusion: In our small study the auto-PBSC and the MNC program are equally suitable for collecting PBSC from healthy donors. The numbers are small and more donors will be included. We expected the MNC to show a significant shorter collection time, which is the great benefit compared to auto-PBSC. The faster collection, the more blood volume can be processed and the bigger chance of collecting the requested yield. A whole-blood-to-ACD ratio of 12:1 would probably result in a shorter collection time.

Table 1	Median number (range)*	
	Auto-PBSC	MNC
Pre-aphaeresis CD34+ (/ul)	68 (29-109)	50 (22-97)
WBC (x 10^9/l)	53.8 (47.8-76.7)	57 (28.6-74.5)
Percentage mononuclear cells	17 (15-18)	16 (13-17)
Inlet volume (ml)	10680 (10000-11930)	10500 (8520-12710)
Inlet volume (x blood volume)	2.3 (2.3-2.5)	2 (1.6-3)
Time (min)	253 (247-263)	216 (151-275)
CD34+ collected (x 10^6)	382 (213-637)	302 (150-475)
Collection efficiency (%)	52 (49-73)	57 (39-77)
volume of product (ml)	161 (88-192)	218 (172-262)

* p > 0.05 (Wilcoxon rank sum test, two-tailed)

Table 2	Median number (range)*	
	Auto-PBSC	MNC
Age	49 (40-67)	59 (43-70)
Men/women	4/8	3/3
Pre-aphaeresis CD34+ (/ul)	66 (19-122)	39 (10-123)
WBC (x 10^9/l)	58 (28.9-82)	59 (28.6-74.5)
Percentage mononuclear cells	15 (8-18)	13 (10-17)
Inlet volume (ml)	12265 (6000-17680)	12710 (8520-18740)**
Inlet volume (x blood volume)	2.3 (0.8-3.1)	2.5 (1.6-3)
Time (min)	253 (118-313)	235 (151-275)
CD34+ collected (x 10^6)	328 (84-817)	210 (86-1037)
Collection efficiency (%)	48 (13-77)	48 (39-59)
volume of product (ml)	153 (88-296)	240 (172-289)

* p > 0.05, ** p = 0.001 (unpaired t-test, two-tailed)

P1146
First step towards Macedonian donor registry-mobilization of HLA-identical familiar healthy stem cell donor in allogeneic transplant setting
S. Genadieva-Stavrik, A. Pivkova, Z. Stojanoski, S. Krstevska-Balkanov, S. Trajkova, B. Georgievski
Clinical Center (Skopje, MK)

Mobilized peripheral blood stem cells (PBSC) from healthy donors have become an increasingly used alternative to bone marrow for allogeneic transplantation. Granulocyte colony-stimulating factor (G-CSF) –primed peripheral stem cells harvesting may result in a graft with increased mononuclear cells collected, increased progenitor cell dose and potential for more rapid engraftment resulting in improved survival. Filgrastrim is not only known to mobilize CD34+ progenitor cells but acts as a pleiotropic immune modulator. So, systematic donor follow-up in healthy donors is needed.
The aim of this study is to evaluate safety and feasibility of G-CSF primed hematopoietic peripheral stem cells in familiar

HLA-identical donors. The follow-up focused on clinical and laboratory testing including reports of adverse event after the mobilization.
Granulocyte colony-stimulating factor (G-CSF) is administrated in 56 healthy donors to reach sufficient mobilization in the period 2000-2010. The donors were characterized as follows: 43 years median; female 60% of the donors. G-CSF was administrated in the dose 10µg/kg of donor weight in five day and PBSC collections started on the fifth day using COBE Spectra cell separator. The aim was to collect mononuclear cells 2x108/kg of recipient weight. Three donors were mobilized twice (for second transplant). Aphaeresis needed to reach target number of CD34+ cells were: 1 apherese in 50%, more than two apherese need in only 1 patient. The most frequent adverse event that was noted by patients was bone pain associated with increasing number of white blood cells. Better mobilization and higher PBSC yield correlated significantly with younger age. Four years after G-CSF –primed peripheral stem cells harvesting, a young female 48 years old was diagnosed with acute myeloblastic leukemia. Four years ago when she was 44 years old, she donated for her HLA identical sister with acute myeloblastic leukemia.
G-CSF is safe and very effective for PBSC mobilization in our group of healthy donors. This method allows certain collections of sufficient numbers of progenitors in virtually all healthy donors. We demonstrated that filgrastim mobilization for peripheral blood stem collection is effective and result with successful engraftment in all the recipients. Daily injection of 10µg/kg of G-CSF and first aphaeresis preformed at day 5 seems to be the best strategy to obtain the CD34+ cell count for an allogeneic hematopoietic stem cell graft.

Chronic leukaemia

P1147
Allogeneic haematopoietic stem cell transplantation in patients with myelofibrosis or acute myeloid leukaemia secondary to a previous polycythaemia vera or essential thrombocythaemia: report from the MDS subcommittee of the Chronic Leukaemia Working Party
A. Rambaldi, A. van Biezen, M. Scholten, E. Oldani, A. Carobbio, J. Finke, A. Nagler, L. Volin, T. Lamy, R. Arnold, M. Mohty, M. Michallet, N. Kroger, T. de Witte on behalf of the Chronic Leukemia Working Party

Background and aim of the study: The indolent clinical course of Polycythaemia Vera (PV) and Essential Thrombocythaemia (ET) may turn into an aggressive phenotype due to progression to Myelofibrosis (MF) or Acute Myeloid Leukaemia (AML). These patients may eventually become eligible to allogeneic hematopoietic stem cell transplantation (alloHSCT).
Patients: We analyzed 250 patients (male/female 137/113) with an initial diagnosis of PV (n=120) or ET (n=130) who underwent alloHSCT due to progression to MF (n=193) or AML (n=57) and were reported to EBMT registry between year 1994 and 2010. The median age was 56 years (range, 22-75). Of these 250 transplants, 80 were performed after a standard myeloablative and 170 after a reduced intensity conditioning regimen. Donors were HLA related matched (n=115) or mismatched (n=2), or unrelated matched (n=124) or mismatched (n=9). At transplant, 137 (55%) patients had a relapsed/progressive disease, 65 were untreated, 23 were reported as being in CR while the haematologic status was unknown for 25 patients. GVHD prophylaxis was based on Cyclosporine A in 179 cases (72%) either alone (3%) or combined with Methotrexate (34%) or Mycophenolate (35%). A T cell depletion was performed in vivo with ATG (n= 134, 54%) or Alemtuzumab (n= 25, 10%) or ex vivo (n=7, 2.8%).
Results: With a median follow-up of 13 months (range, 1-123), 3 years overall survival (OS), cumulative incidence of relapse/progression (CIR) and transplant related mortality (TRM) were 55% and 32% and 28%, respectively. Acute GvHD grade II-IV was seen in 27% and extensive chronic GvHD in 18% of the patients. When considering factors influencing the clinical outcome after transplant, older age (> 55 years), diagnosis at transplant (AML vs MF) and donor type (mismatched vs unrelated vs related) proved to be associated with a significantly worse outcome (Table 1). Other factors including initial diagnosis (PV/ET), time from initial diagnosis to transplant (> vs < 10 years), JAK2V617F mutation, patient/donor CMV status, disease status at transplant, intensity of the conditioning regimen, stem cell source and T cell depletion had no impact on clinical outcome.
Conclusions: AlloHSCT confirms its curative potential for end-stage PV/ET patients progressing to MF or AML. Relapse and transplant related mortality remain unsolved problems for which innovative treatment approaches are urgently needed.

Table 1
Main clinical outcomes evaluated at 36 months after transplant

Variable	N	CIR (%)	p	TRM (%)	p	OS (%)	p
	250	32		28		55	
Age							
< 55	114	27	ref	20	ref	65	ref
> 55	136	39	0.047	35	0.032	47	0.015
Diagnosis at transplant							
AML	57	53	ref	29	ref	28	ref
MF	193	28	0.001	27	0.045	62	<0.001
Donor type							
Related	115	35	ref	18	ref	65	ref
Unrelated	124	30	0.562	34	0.034	50	0.085
Mismatched	11	35	0.775	49	0.343	30	0.390

P1148
Improved outcome of transplant in patients with CML
A.H. Elmaagacli, M. Koldehoff, N.K. Steckel, M. Ditschkowski, T. Gromke, M. Hlinka, R. Trenschel, H. Ottinger, D.W. Beelen
University Hospital of Essen (Essen, DE)

We have evaluated the outcome of 185 patients who received an allogeneic transplant for CML since 2002 in our centre. 124 patients of these pts (67%) were transplanted in 1st CP of CML from a HLA ident. URD (n=70) or SIB donor (n=54). All pts failed or did not tolerate treatment with a tyrosine kinase inhibitor (TKI). Pts transplanted from a SIB donor had a 5-year estimate for OS of 87% (median age 40, pre-transplant EBMT score at median 2) and pts transplanted from an URD had a 5-year estimate for OS of 80% (median age 40 years,EBMT score at median 3). All pts received a myeloablative conditioning regimen including TBI.
The incidence of acute GVHD grade 2-4 was 70.2% for pt transplanted in 1stCP from URD. Further, 77% of these pts developed a chronic GVHD. Haematological relapse occurred in 11 pts from which all except one could be successfully treated with DLI, interferon or TKI. The majority of patients (74.5%) who were transplanted from HLA ident. SIB donor received a graft with highly enriched CD34+ cells without any posttransplant immunosuppression but with a programmed T cell add-back as adoptive DLI. Acute GVHD grade 2-4 occurred in 30.1% of pts transplanted from a HLA-ident.SIB donor and 38.2 % of these pts developed a chronic GVHD. 38 of 42 pts transplanted with CD34+ stem cells received adoptive DLI with or without TKI or/and IFN alfa due to the occurrence or persistence of molecular relapse. Only 5 of these pts developed a haematological relapse from whom 3 pts were retransplanted from an alternative donor.
Further, we evaluated 61 pts who were transplanted for CML in more advanced disease phase with various donor types with an EBMT score at median of 5 (range 2-7). From these pts 55.7% (n=34) were transplanted in second or third chronic phase, 23%