prothrombotic findings (high MA and increased G parameter). 6 patients underwent renal biopsies with one bleeding complication. This patient had a normal SBT and CPA at the time. *Conclusions.* In this pilot study we found that prolonged SBT were not predicted by serum creatinine or calculated GFR. Within the limitations of this study, an alternative *in vitro* test to replicate the SBT has not been identified.

Table 1. Comparison of assays.

SBT		PFA-100		WBPA		CPA		TEG
Time	n	Not done	Abnormal	Pt on clopidogrel	Abnormal	Not done	Abnormal	Abnorm
<7min	12	1	3/11	0	7/12	5	5/7	6/12
≥7min	30	1	17/29	4	24/26	9	15/21	12/30
<8min	16	1	6/15	1	10/15	5	8/11	8/16
≥8min	26	1	12/25	3	21/23	9	12/17	10/26
<9min	20	2	9/18	1	14/19	6	10/14	9/20
≥9min	22	0	11/22	3	17/19	8	10/14	10/22
≥15min	10	0	6/10	0	8/10	5	5/5	4/10

0425

ANALYSIS OF CLINICAL AND BIOLOGICAL FACTORS ASSOCIATED TO EXCESSIVE BLEEDING IN CARDIAC SURGERY

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Background. Bleeding is the most frequent and important complication associated to cardiopulmonary bypass (CPB) in cardiac surgery. The knowledge of physiopathological aspects related to the own CPB and the use of certain measures (less deep hypotherm, drugs like aprotinin, and better control of the intraoperative anticoagulation, among others) have significantly reduced this hemorrhagic risk. Excessive postsurgery bleeding (EPSB) takes place when the hemorrhage volume is superior to 1 liter in the first 24 hours after surgery. *Aims.* We have analysed what clinical and biological factors are associated to EPSB after cardiac surgery with CPB. *Methods.* We studied 26 patients undergoing cardiac surgery with CPB (15 men and 11 women; median age 67 years, range 40-85), in whom tranexamic acid was not administered during the intervention. Twelve coronary artery bypass operations, 10 valve replacements, and 4 mixed surgeries, were included. Those patients with EPSB were grouped as opposed to those who did not have EPSB, and differences between both groups in relation to physical factors (corporal temperature, haemodynamic indexes), biochemical (BUN, creatinine, CK-MB, CK-NAC, lactic acid, soluble TNF receptor, interleukin-6, complement system and leptin included) and hemogram findings, hemostatic parameters, transfusional requirements and used drugs, were analysed. Data were recorded at four moments: preoperative, arrival at the intensive care unit, after 4 hours of arrival and after 24 hours. The different used statistical tests are explained. *Results.* EPSB was observed in 13 patients (50%). In the preoperative moment, there were no differences between both groups, except for a lower plasma concentration of PAI-1 in the group of patients who showed EPSB. In the moment of arrival at the intensive care unit, those patients who made EPSB presented lower levels of C1q, C1 inhibitor, C7, Factor B of the complement, PAI-1, PT, and leptin, and a lower corporal temperature. After 4 hours of arrival, the patients with EPSB presented lower levels of C1q, C1 inhibitor, C3, C7, Factor B, leptin, PT and fibrinogen. Finally, after 24 hours of arrival at the intensive care unit, the values of C1q, C4 and leptin, were significantly lower in the EPSB-group. We did not find differences in the following factors and parameters: lactic acid, interleukin-6, soluble TNF receptor, APTT, antithrombin, d-dimer, tPA, BUN, creatinine, leukocytes, platelets, CK-NAC and CK-MB, administered dose of dobutamine and noradrenaline, and haemodynamic indexes (cardiac index and systemic vascular resistance index). *Conclusions.* In our experience, several biochemical and hemostatic parameters could serve as predicting factors of EPSB in patients undergoing cardiac surgery. Specifically, some factors of the complement system and leptin (obesity-related protein) seem to play an important role. Our work supports that the activation of the complement system caused by the CPB, could play an important role in the postsurgery hemorrhage.

0426

SUBJECTIVE TRAINING EFFECTS ON ADULT PATIENTS WITH HAEMOPHILIA ATTENDING A SPORTS THERAPY PROGRAMME

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Background. Only since some years sport activities have been recommended for haemophilia patients. Still now the importance of sports therapy as an integral element in haemophilia treatment has not yet been widely recognized. In the frame of the Haemophilia & Exercise Project (HEP) the success of a two years sports specific therapy was evaluated objectively in terms of isometric muscular strength and proprioception and subjectively in terms of the WOMAC questionnaire and the orthopaedic joint score. Subjectively perceived training effects were tested with the a newly developed sport-specific questionnaire (HEP-Test). In addition quality of life was tested with the SF-36 and the haemophilia-specific quality of life questionnaire (Haem-A-QoL). *Aims.* Assessment of subjective training effects of a sports therapy programme for adult patients with haemophilia in terms of bodily condition and quality of life. *Methods.* Based on the contents of the training programme a sport-specific questionnaire (HEP-Test) was developed consisting of 33 items pertaining to 6 dimensions (physical status, mobility, strength & coordination, endurance, body perception, general questions). HEP-Test was pilot tested in 23 German adult haemophilia patients and tested for it's feasibility in terms of acceptance, comprehensibility and relevance. Data were psychometrically analysed in terms of reliability and validity (criterion, convergent, discriminant). Correlation of the HEP-Test with subjective and objective measures were performed. *Results.* From the 23 enrolled patients 87% were severely affected by haemophilia. In 8.7% inhibitors occurred and half of the patients received prophylactic treatment (52.2%). 47.8% of the patients reported target joints. Viral infections were found in 65.2% of the patients (hepatitis C) and in 21.7% for HIV. Concerning the newly developed HEP-Test the mean completion time was 13 minutes; the questionnaire was well accepted and patients found it related to physical activities. Feasibility testing led to the omission of 9 items and suggestions for rewording of some items were given by patients. Psychometric testing revealed excellent characteristics for reliability (Cronbach's α ranging from .82-.90). Validity testing showed high correlation between scales of HEP-Test, SF-36 and WOMAC. Acceptable to high correlation were found with the orthopaedic joint score and the isometric muscular strength test. Discriminant validity testing revealed significant differences for clinical subgroups. *Conclusions.* HEP-Test is a short questionnaire assessing subjective training effects. HEP-Test was well-accepted by patients and showed quite satisfactory psychometric characteristics. Subjective training effects can be measured with the HEP-Test and should be combined with objective assessments in order to reveal aspects, which can not be measured objectively such as body perception.

0427

THE USE OF FEIBA AND NOVOSEVEN FOR TREATMENT OF BLEEDING EPISODES IN PATIENTS WITH HEMOPHILIA A AND FACTOR VIII INHIBITOR: A SINGLE CENTRE EXPERIENCE

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Background. Factor VIII replacement is impossible in hemophiliacs with high titre inhibitor, so FEIBA© and NovoSeven® are the main possibility in treatment of bleeding. *Aims.* Evaluate efficacy and consumption of the products in treatment of bleeding episode in hemophiliacs with factor VIII inhibitor. *Methods.* We used data accumulated in our hemophilia centre in the course of 6 years between 2000 and 2005. Five hemophiliacs with factor VIII inhibitor were treated on demand with FEIBA© (dose 42-79 U/kg 8-12 h) or with NovoSeven® (dose 80-210 µg/kg à 2 h). For efficacy we used evaluation criteria: excellent: bleeding stops within 8 hours from start of treatment, efficient: bleeding stops more than 8 hours following start of treatment, partially efficient: bleeding stops but recurring within 48 hours following stop of bleeding, inefficient: no stop of bleeding after 48 hours of treatment or need for another treatment. *Results.* Patients had 124 bleeding episodes, included 99 spontaneous bleeding episodes (88 hemarthroses, 6 muscle bleedings and 5 other sites bleedings) and 17 traumatic bleedings (9 hemarthroses, one muscle bleeding, 2 other sites bleedings and 5 multiple sites

bleedings) and 8 re-bleeding episodes. Bleeding episodes were treated mostly with NovoSeven® (78) and with FEIBA© (45). We evaluated all episodes (except the re-bleeding episodes) treated with NovoSeven® (71) or with FEIBA© (44). Median total dose per episode was 352 µg/kg and 190 U/kg, dose per infusion was 112 µg/kg and 60 U/kg. In episodes with re-bleeding treated with NovoSeven® (6) median total dose per episode was 382 µg/kg, dose per infusion was 110 µg/kg. Using FEIBA© one episode with re-bleeding had occurred total dose 93 U/kg, 47 U/kg per infusion (dosage was lower than average). The efficacy of NovoSeven® and FEIBA© was excellent in 70% and 47,7% of the episodes, efficient in 21,4% and 47,7%, partially efficient in 8,6% and 2,3%, inefficient in 0 and 2,3%. Separately we evaluated spontaneous hemartroses. NovoSeven® was used in 54 episodes and FEIBA© in 34 episodes. Median total dose per episode was 352 µg/kg and 187 U/kg, dose per infusion was 112 µg/kg and 60 U/kg. In episodes with re-bleeding treated with NovoSeven® (5) median total dose per episode was 368 µg/kg, dose per infusion was 112 µg/kg. Using FEIBA© only one episodes was with re-bleeding it had been mentioned above. The efficacy of NovoSeven® and FEIBA© was excellent in 70,4% and 47,1% of the episodes, efficient in 20,4% and 50%, partially efficient in 9,2% and 2,9%. Median (mean) interval between start of bleeding and start of treatment in spontaneous hemartroses treated with NovoSeven® without re-bleeding was 2,4 h (3,9 h), with re-bleeding was 2,5 (2,7 h). *Conclusion.* In our experience treatment with NovoSeven® stopped bleeding earlier than with FEIBA©, however about 9% of the episodes were with re-bleeding although the dosage used in these episodes and intervals to start of treatment were on the same level as in episodes without re-bleeding. The question is why any bleedings treated in the same way were recurring and the other not.

0428

ORTHOPAEDIC STATUS OF PERSONS WITH HAEMOPHILIA IN A DEVELOPING COUNTRY

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Background. The medical approach of haemophilia, prototype of rare diseases, can be considered a hallmark for the quality of sanitary system in a country. As joints are target sites of bleeding, the orthopaedic status of persons with haemophilia (PWH) is accepted as reliable clinical reflection of diagnostic and therapeutic performances in this disease. *Aims.* We sought to perform a cross-sectional analysis of joint status in terms of physical and functional assessment of haemophiliacs. *Methods.* The study was conducted on 93 patients (77 with haemophilia A and 16 with haemophilia B) consecutively enrolled: 31.18% children and 68.81% adolescents and young adults; 92.47% with a rest-activity <1%. Number of total bleeds and joint bleeding events/ patient/ year, number of patients with target joints and number of target joints/patient, clinical score/joint, global clinical joint score and motor performance as well were analysed. For arthropathy assessment Petrini scale in children and Gilbert scale in adults were used. *Results.* 15.65 bleeds /patient/ year and 11.44 joint bleeds/patient/ year in children, vs. 25.34 and 20.28 respectively in adults were found. Only 27.5% of children, and 9.37% of adults were spared of joint bleeding. More than 50% of adolescents had target joints, 31.17% of them with more than one affected joint. The global joint score was 22.96±21.11 in children and 38.38±20.79 in adults; 23% of patients presented chronic pain, and 75.86% vs. 100% (children vs. adults) live with the burden of functional deficit. *Conclusions.* The deleterious impact of inadequate substitution in haemophilia is evident, not only on joint status, but on quality of life as well. This situation imposes an urgent improvement of the therapy, a costly action, but certainly a cost-efficient one from the point of view of medical economics.

0429

SERUM VASCULAR ENDOTHELIAL GROWTH FACTOR AND THROMBIN-ACTIVATABLE FIBRINOLYSIS INHIBITOR ANTIGEN IN CHILDREN WITH DISSEMINATED INTRAVASCULAR COAGULOPATHY

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Background. Disseminated intravascular coagulopathy (DIC) is a syndrome characterized by systemic intravascular activation of coagulation resulting in depletion of platelets and coagulation factors. Hypercoagulability and hyperfibrinolysis were both thought to be important mechanisms of DIC. Vascular endothelial growth factor (VEGF) is one of the potent angiogenic polypeptides produced by multiple tissues. High amount of VEGF is stored within circulating platelets and is subsequently released during platelet aggregation. When chronic stimulation of VEGF continues vascular hyperpermeability and thrombosis may be induced. We speculated that extremely high value of VEGF in serum of the patients with DIC might be caused via VEGF release in activated platelets. Thrombin-activatable fibrinolysis inhibitor (TAFI) is considered as a modulator of fibrinolysis and therefore it might play an important role in the pathogenesis of DIC. We planned to evaluate the predictive value of serum VEGF and TAFI for the determination of DIC. *Aim.* To evaluate clinical and laboratory findings of 40 consecutive children in a single center, diagnosed as DIC according to ISTH criteria and compare serum VEGF, TAFI levels of these patients with 40 healthy objects to clarify their roles in the pathogenesis of DIC. *Methods.* Forty patients who experienced DIC in our department (Pediatric Hematology Unit of Hacettepe University, Ankara) between December 2003- May 2005 were examined. At the time of diagnosis hemostatic datas of patients with DIC were noted, serum sample of patients with DIC was collected and stored at -80 0 C. *Results.* The underlying diseases of the patients were congenital heart disease (7 patients), chronic renal failure (5 patients), malignancy (3 patients), metabolic disease (3 patients) and collagen tissue disease (2 patients) Twenty four patients had infection, which 17 of them were documented. Mean acute quantitative CRP level was 6, 0±6, 2. At the time of diagnosis median WBC count was 7050/mm^3 (600-154000), platelet count was 70.000/mm^3 (3000-624000) and hemoglobin level was 9,5 gr/dl (5,8-16,3). Low level of protein C and S levels were detected in 13 (32.5%) and 9 (22.5%) patients respectively. Fibrinogen levels were decreased only in six of patients. Majority of patients (37 (92.5%)) had prolonged prothrombin time over 6 seconds. D-dimer levels over 2 g/dL in were detected in 36 (90%) patients. No significant difference were observed in the VEGF levels between study group (320,25±327,33 pq/ml) and healthy controls (514,51±679,19) (p=0.603). There were significant difference in serum TAFI Ag levels between control group (88,9±16,9%) and in patients with DIC (82,3±14,3%) (p=0,007). *Conclusions.* We could not show a correlation between the platelet count and VEGF levels. High value of VEGF in serum of the patients may be overt after the disease progression and serial analysis might be helpful. On the other hand TAFI Ag levels were significantly low in patients with DIC. As it has been suggested that TAFI Ag is mainly under genetic control, further combined approach measuring TAFI levels and TAFI gene polymorphism will be needed.

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