than mild to moderate hepatosplenomegaly, no bulky disease or significant lymphadenopathy were found on CT scans of all patients. LDH and ? microglobulin were invariably elevated. In-situ hybridization for EBV-encoded early small RNA was positive on the neoplastic tissues in all patients. Five patients with no prior history of nasal NK/T cell lymphoma demonstrated the classic NK/T-cell lymphoma, nasal type phenotype (CD3-,CD4-,CD8-,CD56+) while one had peripheral T cell lymphoma phenotype with TCR gamma rearrangement. Interestingly, EBV anti-VCA IgM was not demonstrated in all patients, implying a lack of humoral response to acute EBV infection. High viral load by EBV DNA PCR was demonstrated in 1 patient. Median survival was 33 days from time of diagnosis and the causes of mortality included liver failure in 2 patients, neutropenic sepsis in 3 patients and severe bleeding complication after liver biopsy in 1. Four patients managed to receive chemotherapy. Two had upfront CHOP regime and two had immunosuppresion with weekly etoposide and daily prednisolone and cyclosporin prior to full dose chemotherapy. Although mortality was uniform, the 2 patients who received immunosuppression first had the longest survival. Liver function was a good surrogate of disease activity, usually showing a decline once steroid based chemotherapy was started, but typically rebound back between the 15th to 20th day of starting chemotherapy. Shortening the duration of chemotherapy however increased the risk of toxicities. Conclusions This disorder should always be suspected whenever a patient presents with haemophagocytic syndrome. As tumour masses indicative of lymphoma were not striking, bone marrow, skin or liver biopsy appear to be of great importance for its diagnosis. The high incidence of coagulopathy may preclude a diagnostic liver biopsy if skin and marrow biopsies are feasibly. Important pitfall in diagnosis is the lack of serological evidence. The NK cell phenotype seems to be more common compared to cases described in the literature. Reasons for the epidemiologic predisposition remain elusive. Immunosuppressinon may have a role in controlling the cytokine release, which

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Abstract: 575 Poster: 482

R-CHOP IS SUPERIOR OVER STANDARD CHOP AS INITIAL CHEMOTERAPY REGIMENT FOR PATIENTS WITH UNTREATED AGGRESSIVE NON-HODGKIN`S LYMPHOMA (SINGLE CENTER EXPERIENCE)

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Treatment of aggressive Non-Hodgkin lymphoma with standard CHOP regiment has yielded overall response rates of 80-90%, with complete response rates 45-55%, and long term 5-years survival is seen in 30-40% of patients. Attempts to improve these results by using more dose-intensive regimens have not resulted in a significant increase in the complete response rate, nor improved disease-free survival or overall survival. So, it is essential to developed new therapeutic approach for patients with aggressive-histology NHL. Rituxan is a chimeric murine/human monoclonal antibody that reacts specifically with B-cell antigen CD20 and affects both complement-mediated and antibody-dependent cell mediated lysis of CD20+ cells, induces apoptosis in vitro and sensitizes drug-resistant human B-cell lymphoma cell lines to the cytotoxic effect of some chemotherapeutic agents. In this study we evaluate results of treatment with R-CHOP in comparison with standard CHOP as initial treatment for patients with aggressive NHL. This study comprises 123 patients with histopathology diagnosis of aggressive B-cell Non-Hodgkin`s lymphoma treated at the Department of Hematology in the period 1989-2003, which gave us the observation period of 6 to 183 months. This study consisted of two treatment groups; one comprises 28 patients initially treated with R-CHOP regimen with Rituxan 375mg/m2 and six cycles of CHOP given 21 days in 26 patient and 8 cycles in two patients. The other group comprises 95 patients initially treated with standard CHOP regiment. There were no significant differences in sex, age, prognostic groups of patients according to the IPI. Most of the patients were in the advanced clinical stage at the disease on the initial presentation of the disease, 24% of the patients in the third stage and 43% in the fourth stage. B symptoms were noted in 44% of the patients. Bone marrow infiltration was found in 29%. After initial chemotherapy complete remission was achieved in 60%, partial response in 4% and there was no response in 32% with early deaths in 4% in group treated with standard CHOP regiment. In comparison, group of patients treated with R-CHOP achieved 75% complete remission, 11% partial response and 14% did not responded. Although the follow-up in group of

patient treated with R-CHOP is still, there is significant improvement in event-free survival and overall survival. Our study confirmed that the addition of monoclonal antibody rituximab to CHOP marked a major advance in the treatment of aggressive lymphoma and should be standard initial treatment for previously untreated diffuse large B-cell lymphoma.

Abstract: 576 Poster: 483

THE RESOLUTION OF PANCYTOPENIA AFTER RCHOP IN A CD20(+) DIFFUSE LARGE B CELL LYMPHOMA PATIENT WHO PRESENTED WITH ISOLATED BONE MARROW INVOLVEMENT

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Background: Diffuse large B cell lymphoma (DLBCL) is characterized by the presence of large cells, exhibiting a mature B cell phenotype. Presentation with isolated bone marrow disease is quite rare in this lymphoma. Clinical experience with the use of rituximab (R) in neutropenic and thrombocytopenic lymphoma patients is limited. Here, we present our experience with the use of R-CHOP in a CD20(+) DLBCL patient who presented with isolated bone marrow and leukemic involvement. Case Report: Our patient was a 46-year-old female who was admitted to our department in December 2004 with fatigue, anorexia, and night sweats. Her hemoglobin was 6.2 g/dl; hematocrit, 16.7%; leucocytes, 2000/mm3 (with 1% metamyelocytes, 2% stabs, 22% granulocytes, 60% lymphocytes, 6% monocytes, and 9% DLBCL cells); and, platelets, 17000/mm3. She had no peripheral lympadenopathy, no hepatosplenomegaly. Thorax and abdominal CT showed no splenic or lymph node enlargement. The diagnosis was reached by the histopathologic examination of the bone marrow biopsy specimen which was hypercellular with diffuse involvement by CD20(+) DLBCL cells. Initially, she was administered CHOP (cyclophosphamide, adriamycin, vincristine, prednisone) regimen. After chemotherapy, she was given erythrocyte and platelet transfusions as needed. Three weeks after the administration of CHOP, her hemoglobin was 6.3 g/dl; hematokrit, 18%; leucocytes, 1300/mm3 (with 600/mm3 neutrophils); and platelets, 25000/mm3. The patient`s systemic symptoms became worse; and she was decided to be given R-CHOP despite her neutropenia and thrombocytopenia. She went on to be supported by platelet transfusions; however, she became refractory to them. Considering the development of platelet alloantibodies, she was given intravenous immunoglobulin and HLA-compatible platelets. In addition, she was given broad-spectrum antibiotics for febrile neutropenia. Four weeks after the administration of first R-CHOP, her hemoglobin was 8.1 g/dl; hematocrit, 22.8%; leucocytes, 2400/mm3 (with 900/mm3 neutrophils); and platelets, 158000/mm3. The patient has now completed 6 cycles of R-CHOP; and her final hemoglobin is 12.8 g/dl; hematocrit, 39%; leucocytes, 3500/mm3 (with 2300/mm3 neutrophils); platelets, 216000/mm3. The bone marrow biopsy after 3 cycles of chemotherapy was normocellular with no lymphoma cells. Conclusions: The use of R might be feared in patients with neutropenia and/or thrombocytopenia. Contrarily, its use might be curative in cytopenic patients in whom the cause of cytopenia is involvement of the bone marrow. However, regular blood counts should be performed during therapy and transfusion support should be readily available.

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DETERMINING THE BONE MARROW INVOLVEMENT IN PATIENTS WITH B CELL NON-HODGKIN`S LYMPHOMA WITH PCR

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Bone marrow involvement in NHL represents its clinical stage as IV and in routine evaluation it is demonstrated by trephine biopsy. However demonstrating this involvement is sometimes difficult in lymphoma which has focal or minimal involvement. Clonality shows malign progression. Immunoglobulin Heavy chain gene rearragement (I g H GR) occurs during B lymphocyte maturation and if malign progression occurs it will arise from a single cell, as a result malignancy will

demonstrate same Ig H rearrangement. It is possible to show clonality by Ig H gene rearengement by PCR. The aim of this study was to show Ig H gene rearrangement using PCR in bone marrow aspiration specimens in B-cell NHL patients before chemotherapy and at the time of remission and compare this results with threphine biopsy and clinical status. 38 NHL patients [22 Diffuse Large B-cell Lymphoma, 5 Follicular Lymphoma, 4 Small Lymphocytic Lymphoma, 3 Marginal Zone Lymphoma, 1 Precursor B lymphoblastic Lymphoma, 3 Burkitt`s Lymphoma] were included in the study [25 male, 13 female, median age was 55 (range 17-75)years]. Bone marrow aspiration and trephine biopsies were performed in 38 patients at the initial clinical staging period and in 16 patients at the time of remission determination. Pathological evaluation was done according to WHO classification. After DNA extraction, semi-nested PCR was performed for Ig H-GR. PCR products were run on polyacrylamide gel electrophoresis (PAGE). For the first specimens, pathology was found out 11 positive cases, but PAGE revealed 8 positive (monoclonal), [3 negative (polyclonal)] cases out of them. Within the 27 pathology negative cases PAGE revealed 7 monoclonal, one biclonal case and 19 negative cases. When compared with pathology, for the initial staging procedure positive concordance rate was (pathology positive, monoclonality positive) 73 % (8/11) and negative concordance rate (pathology negative, monoclonality negative) was 70 % (19/27). For second specimens, pathology reported one positive case but PAGE revealed 8 monoclonal cases. Positive concordance rate of 100 % (1/1), negative concordance rate of 47 % (7/15) was found in these patients. When we followed the clinical status of patients who had negative concordance we observed that 3 patients relapsed earlier. The other two patients were diagnosed as low grade NHL, positive concordance was found their first specimens but their second specimens demonstrated negative concordance which we hoped to find involvement. Positivity with PCR in these five patients may demonstrate minimal residuel disease. According to our results we can predict early relapse or we can detect minimal residual disease by Ig H with PCR, this will lead us to arrange high dose chemotherapy and/or autologous transplantation especially in patients with high grade NHL.

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CA 125 LEVELS IN PATIENTS WITH NON-HODGKIN`S LYMPHOMA AND OTHER HEMATOLOGIC MALIGNANCIES

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Cancer antigen (CA 125) is a glycoprotein commonly used as a tumor marker. In this study, CA 125 levels were measured in 149 patients and 26 healthy control subjects. The study group included 69 non-Hodgkin lymphomas (NHL), 25 Hodgkin disease (HD), 20 acute myelocytic leukemia (AML), 14 chronic lymphocytic leukemia (CLL), 12 chronic myelocytic leukemia (CML), and nine multiple myeloma (MM) patients. CA 125 was elevated in 37 of the patients and in none of the control subjects. Average CA 125 level in NHL patients was significantly higher than the controls (56.2 +/- 9.2 U/ml, 7.99 +/- 1.05 U/ml respectively) ($P < 0.05$). CA 125 levels were significantly higher in NHL patients with abdominal involvement (113.6 +/- 23.4 U/ml), with B-symptoms (72.3 +/- 13.2 U/ml), higher stage of the disease (stages III and IV -75.3 +/- 14.9 U/ml), bulky disease (99.9 +/- 30.4 U/ml) and in those with serosal involvement (103.1 +/- 18.5 U/ml) ($P < 0.05$ for all). CA 125 levels were also elevated in seven patients with HD and in a patient with CLL with pleural effusion. In conclusion, for patients with NHL, high levels of CA 125 were associated with B-symp-toms, advanced stage, bulky disease, abdominal, and serosal involvement. Therefore, CA 125 might be used as a marker to predict prognosis and to detect advanced disease in NHL.

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THE RELATION OF LYMPHOMA AND HEPATITIS B VIRUS/HEPATITIS C VIRUS INFECTIONS

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Hepatitis B virus (HBV) and hepatitis C virus (HCV) are both hepatotropic and lymphotropic viruses. Infections with these viruses induce chronic antigenicity and clonal expression of ma-

lign B cell neoplasies. Besides, these viruses can proliferate in lymphatic structures and bone marrow. However, the relationship between lymphomas and HBV/HCV infections is not clear. Although in studies from Italy and Japan, a correlation between HBV/HCV and lymphoma is reported, this observation is not confirmed by other studies. In our region of East Black Sea, Turkey (the city of Trabzon), we intended to demonstrate relation of lymphoma and HBV/HCV with a case controlled study. For this aim, 109 patients diagnosed with lymphoma between 2002-2005 in Black Sea Technical University Hospital were investigated. 71 pts were high, 38 were low grade lymphomas. HBsAg and anti-HCV Ab were screened. Control group consisted of the patients from other departments with diagnosis other than lymphoma. 523 patients were enrolled as control. HBsAg was %3.7 and anti-HCV Ab % 2.8 in lymphoma patients, compared with control of % 5.3, % 5.1 respectively. There was no statistical difference between two groups (p> 0.05 OR: 0.69, OR: 0.53 respectively). These findings suggest us that the incidence of HBV and HCV infections in lymphoma patients was not different from that of non-lymphoma patients, therefore a relation could not be established between lymphoma and HBV/HCV infections in our region

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Abstract: 580 Poster: 487

TREATMENT OF PAEDIATRIC NON-HODGKIN`S LYMPHOMA: A REPORT OF THE HONG KONG PAEDIATRIC HAEMATOLOGY & ONCOLOGY STUDY GROUP

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Background: A territory-wide treatment protocol for paediatric non-Hodgkin lymphoma, adopted by the five paediatric oncology centres, has been implemented in Hong Kong since 1995. Aim: The results of the treatment for children diagnosed with non-Hodgkin lymphoma between 1995 and 2002 are now reported. Methods: All children were stratified according to histology and clinical groups with treatment regimens adopted from the United Kingdom Children`s Cancer Study Group. Children with anaplastic large cell lymphoma were subsequently treated on a separate protocol after 2000. Children with lymphoblastic lymphoma were treated with an acute lymphoblastic leukaemia protocol based on the HKALL regimen of the same period. Patients were excluded from analysis if prior treatment had been given, or if the disease was secondary to immunosuppression. Survival analysis was calculated at December 2004. Results: 75 children, 58 boys and 17 girls of mean age 8.8 (1.2-17.7) years, were eligible for analysis. The disease was classified as lymphoblastic (n=23), mature B-cell (n=23), large cell, either anaplastic or diffuse B-cell (n=22), and others, mostly of mature T/NK-cell (n=7). With a median follow-up of 4.1 years, the overall survival and event-free survival rates were 75 ¡Ó 5% and 72.6 ¡Ó 5%, respectively. The event-free survival rates were 78.3%, 91.3%, 68.2%, and 14.3% for the four histological groups, respectively. 18 children died either of recurrent/refractory disease (n=12) or treatment-related toxicities (n=6). Conclusions: Children with non-Hodgkin lymphoma fared treatment well with histology- and risk-stratified regimens. Most treatment failures were associated with large cell lymphomas and mature T/NK-cell histology, for which innovative treatment regimens are needed.

Abstract: 581 Poster: 488

HEPATITIS C VIRUS POSITIVITY IN PATIENTS WITH NEOPLASTIC LYMPHOPROLIFERATIVE DISORDERS

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Several studies have suggested that infection with hepatitis C virus (HCV), that is a hepatotropic and neoplastic virus, has a role in the etiology of neoplastic lymphoproliferative disorders. The results of less number of studies, however, failed to establish such an association in the etiology of these disorders. In this study, hepatitis C virus (HCV) antibodies were searched in 116 patients with lymphoproliferative disorders (LPD) by a third-gen-eration macro ELISA technique. 52 of the patients had been suffering from non-Hodgkin`s lymphoma (NHL), 38 from Hodgkin`s disease (HD), 15 from chronic lymphositic leukemia (CLL), 6 from Waldenstrom macroglobulinemia (WM) and 5 from multiple myeloma (MM). Voluntary blood donors were taken as a control group. The results showed that anti-HCV positivity in all cases was significantly higher than the

control group (8.6 % vs 0.8 %). The rates of anti-HCV positivity were 33.3 %, 5.7 %, 7.8 %, 6.6 % and 20 % respectively in WM, NHL, HD, CLL and MM cases. In conclusion, the findings of our study demonstrate the probable role of HCV infection in the development of neoplastic LPD in our region.

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MYELOID BLASTIC ANTIGEN NK-CELL AND CD4+/ LYMPHOMA: CD56+ POSITIVE HEMATODERMIC NEOPLASM WITH T(6;14) (P11;P10) IN THE SKIN INFILTRATES

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Background: Natural Killer (NK)-cell leukemia/lym-phoma is a rare entity that has been defined only in recent years. The new WHO classification divides NK- cell lymphomas into three different entities: blastic NK-cell lymphoma, NK/T cell lymphoma, nasal type and NK-cell leukemia. The blastic NK cell lymphoma which was not recognized in the REAL classification, is composed of cells with a lymphoblast-like morphology and NK-cell phenotype. We describe an unusual and rare case of myeloid antigen positive Blastic NK-cell lymphoma initially presenting with skin involvement and without classical symptomatology of acute leukemia. Case presentation: A 48 year old woman was admitted to the hospital because of progressive skin lesions on her trunk, face and upper extremities without constitutional symptoms for 4 months. Physical examination showed subcutaneous nodules of varying sizes on her trunk, upper extremities with the largest nodule being 3x4.5 cm in diamater on the face. It was a painless protruding reddish-purple nodul. Peripheral lymph nodes and hepatosplenomegaly were not detected. Hematologic findings were: hemoglobin, 14.7 g/dl; hematocrit, 44.2%, MCV, 87.5 fl; WBC, 7.7 X 109/l with 34 % polymorphonuclear cells; 49 % lymphocytes, 4 % atypical lymphocytes, 4 % eosinophil, 8 % monocytes, 1% basophil and platelets 229x109/l. The skin biopsy specimen showed extensive tumoral infiltration involving the upper and lower dermis and extending to the subcutaneous adipose tissue. The infiltration showed a diffuse pattern. The tumor cells were pleomorphic, with most cells showing vesicular nuclei with scant eosinophilic cytoplasm. Immunohistochemistry of the skin biopsy specimen was negative for CD3, CD20, CD5, CD10, CD79a, CD45Ro, CD30, siklin D1, EMA, NSE, sitokeratin, lambda, kappa, CD21 and positive for bcl 2. Bone marrow smear showed that 72% of marrow cells were abnormal blast cells which were negative for all cytochemistry staining. They did not show typically lymphoblast, myeloblast morphology. There were granules within the cytoplasm of the cells and the cells resembled monoblasts. Flow cytometric analysis of the bone marrow specimen were as follows; CD56:95.3%, CD4: 81.3%, and CD7: 77.3%, CD13: 53.1%, HLA-DR: 95.5%. CD3, CD5, CD8, CD19, CD20, CD10, CD15 were negative. Cytogenetic analysis showed t(6;14) (P11;P10) in the tumoral tissue culture of skin infiltrates. The patient recieved 6 cycles of chemotherapy with an NHL regimen (CHOP chemotherapy regimen). As a result, she had a complete resolution of her skin lesions. A second marrow aspiration after chemotherapy was found to be negative for leukemic cells. However, the patient died due to hepatic insufficiency seven months after the initial presentation. Conclusion: Although, blastic NK-cell leukemia and myeloid precursor NK-cell leukemia are identified as different entities, hybrid forms such as myeloid antigen positive blastic NK-cell lymphoma/leukemia can also be seen as in our case.

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INCIDENCE AND PROGNOSTIC SIGNIFICANCE OF BCL2/JH GENE REARRANGEMENT IN FOLLICULAR LYMPHOMAS IN SERBIA

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Introduction: Follicular nonHodgkin lymphomas (NHL) are characterized by translocation t(14;18)(q32;q21) which joints the bcl2 gene located on chromosome 18q21 with immunoglobulin heavy chain locus on chromosome 14q32. Bcl2/JH gene rearrangement leads to deregulated expression of bcl2 protein known to be a potent

apoptosis inhibitor. There is marked geographic variation in the incidence of t(14;18) in follicular lymphoma, from relatively low rate among Asian studies, and a high rate in patients from United States. Methods: We investigated the presence of bcl2/JH gene rearrangement using polymerase chain reaction in 107 patients with follicular NHL in Serbia. DNA was isolated from paraffin embedded lymphoid tissue of patients with follicular lymphomas. Three breakpoint regions, MBR (major breakpoint region), 5`MBR and mcr (minor breakpoint region) were analyzed. Results: Bcl2/JH gene rearrangement was found in 87 cases (81,3%), while 20 patients (18,7%) were negative for t(14;18). Median age of patient was 58±14 years, M/F=60/47. A majority of patients (88,9%) were in advantage (III-IV) stage of disease, and B symptoms were present in 48,5%. Patients were treated with chemotherapy plus radiotherapy in some cases. Five year overall survival (OS) rate was 60% in patients with bcl2/JH gene rearrangement, and 53% in patients who were t(14;18) negative. There was no correlation between presence of bcl2/JH gene rearrangement and clinical outcome of disease. Conclusions: Bcl2/JH gene rearrangement is a highly specific molecular marker of follicular lymphomas which is useful for diagnosis and monitoring of minimal residual disease. Presence of Bcl2/JH gene rearrangement in tumor tissue is not a prognostic factor in follicular lymphoma patients.

Abstract: 584 Poster: 491

HHV-8 NEGATIVE PRIMARY EFFUSION LYMPHOMA IN A HIV NEGATIVE PATIENT

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Background- Primary effusion lymphoma (PEL) is a distinct clinicopathologic entity that occurs predominantly in immunosuppressed patients infected with human herpesvirus 8 (HHV-8), also known as Kaposi`s sarcoma-associated herpesvirus. Aim- It most frequently occurs in human immunodeficiency virus (HIV)-positive individuals as lymphomatous effusions in the serous cavities without a detectable solid tumor mass. Result- We describe here that a 89-year-old male, who was HIV, HHV8, EBV and HCV-negative. He was admitted to the hospital with dyspnea and malaise. There was no hepatosplenomegaly or lymphadenopathy. Chest radiography and computed tomography revealed right pleural effusion, but there was no evidence of tumor mass or lymph node enlargement.. Cytologic analysis of the pleural effusion revealed a high grade lymphoma with round nuclei, prominent nucleoli and abundant cytoplasm with immunophenotypes positive for CD45, CD30, CD38, and CD71 but negative for CD3, CD19, CD20, CD22, CD79a and surface and cytoplasmic immunoglobulin. Chemotherapy was not applied considering the patient`s age and general condition. Effusion resolved spontaneously. One year after diagnosis, a new pleural effüsion developed at the left side. Thorasentesis was performed, again and pleural effusion was examined, revealing cells just similar to those examined 1 year ago. Pleural needle biopsy showed some chronic inflamatory changes but no malignant cell or tuberculosis lesion was detected. Pleurodesis was performed after complete drainage of the fluid. Chest tomography was still normal. Conclusion- A firm diagnosis of PEL can be established by the examination of cells from the lymphomatous effusion by a combination of cytology, immunophenotypic analysis with the exclusion of tumor mass. Medical literature shows that this lymphoma has a very poor prognosis; this case-report suggests, as already proposed by some authors, that PEL, in HIV, HHV8, EBV and HCV-negative patients, is a distinct clinical entity, with a different clinical behaviour.

Abstract: 585 Poster: 492

SECONDARY AMY LOIDOSIS CAUSING NEPHROTIC SYNDROME IN A PATIENT WITH NONHODGKIN`S LYMPHOMA: QUITE A RARE DIAGNOSIS

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Background: Amyloid-associated protein (AA)-type systemic amyloidosis is quite a rare complication of nonHodgkin`s lymphoma (NHL). Here, we present our patient diagnosed with NHL in June 2004 who developed nephrotic syndrome after 4 cycles of chemotherapy, and diagnosed to have AA-type systemic amyloidosis by rectal

biopsy. Case Report: A 78-year-old male was referred to our department in June 2004 with peripheral lymphadenopathy. On physical examination, he was pale; and, he had bilateral cervical, axillary and inguinal lymphadenopathies. His laboratory data revealed: hemoglobin, 11 g/ dl; leucocytes, 8600/mm3; platelets, 222000/mm3; ESR, 40 mm/hr; urea, 50 mg/dl; creatinine, 1 mg/dl; albumin, 3.6 g/dl; LDH, 278 U/L; b2-microglobulin, 8575 ng/ml. Urinalysis was normal. There were multiple axillary and mediastinal lymphadenopathies on thorax CT; and, abdominopelvic CT showed multiple retroperitoneal and mesenteric lymphadenopathies. The histopathologic examination of an excisional lymph node biopsy revealed nodal marginal zone B-cell lymphoma. Being diagnosed with stage IIIA NHL, the patient was administered 4 cycles of COP with which he obtained partial remission of his disease. When he came for the fifth cycle, he had pretibial edema and sensorimotor polyneuropathy. Laboratory data were as follows: hemoglobin, 11.3 g/dl; leucocytes, 10200/mm3; platelets, 744000/mm3; ESR, 110 mm/hr; urea, 59 mg/dl; creatinine, 1.4 mg/dl; total protein, 5 g/dl; albumin, 1.6 g/dl. HBsAg, antiHBs, antiHCV, and antiHIV were negative. Creatinine clearance was 73 ml/min and 24-hour protein excretion was 5 gr. Rectal biopsy demonstrated Congo red-positive AA-type amyloid deposition. The patient was given CP and discharged with colchicine. During his follow-up in March 2005, urea was 209 mg/dl; creatinine, 7.9 mg/dl; total protein, 4.9 mg/ dl; and albumin 2.5 g/dl. Creatinine clearance was 4.8 ml/min and daily protein excretion was 7.5 g. The patient was put on hemodialysis programme. He is still undergoing hemodialysis three times weekly and is not under any chemotherapy. Conclusion: A few cases of nephrotic syndrome in NHL patients due to glomerulonephritis have been reported. To our knowledge, our patient was the first who developed nephrotic syndrome due to AA-type amyloidosis while under therapy for his NHL.

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TOXICITY OF FLUDARABINE, CYCLOFOSFAMIDE AND MITOXANTRONE (FMC) REGIME IN RELAPSED OR REFRACTORY INDOLENT LMNH

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Background: The indolent non-Hodgkin`s lymphomas (LMNH) are usually chemosensitive at diagnosis but become progressively refractory to further therapies. Aims: The aim of the study was to evaluate toxicity of a combination of Fludarabine, Cyclophosphamide and Mitoxantrone (FMC) in patients (pts) with relapsed or refractory indolent LMNH. Methods: Twenty eighth 28 pts received FMC (Fludarabine 25 mg/m2, days 1 to 3, Cyclofosfamide 300 mg/m2, days 1 to 3 and mitoxantrone 10 mg/m2, day 1, delivered every four weeks. 11 (39,28%) females and 17 (60,72%) males (median age 58, ranging from 41 to 71 years) was treated with the FMC salvage regimen. There are 15 pts with LLC/B-lym-phocytic lymphoma, 9 with follicular lymphoma and 2 with mantle cell lymphoma. All pts has previously treated with two to five prior regimes (median three); fifteen were pretreated with anthracyclines, and five received purine analogous. Results: At diagnosis four pts were in stage I-II and twenty four in stage III-IV, whereas by the time of FMC treatment all pts are in stage III-IV. Only six patients had B symptoms at this time. When starting FMC, no pts were considered low risk according to IPI, eighteen pts were intermediate and ten were high risk. Minimum four cycles were planned in each pts and prophylaxis with Cotrimoxazol was given as recommended. In a total of 88 cycles delivered to the pts (since five pts progressed during therapy). The major toxicity observed was mielossupression. Seventy-one per cent of pts experienced granulocytopenia and seven pts (25%) needed G-CSF during treatment. Despite growth-factor support, neutropenia (<500 neutrophils/μl) was severe in three. Although twenty eighth febrile neutropenic episodes were reported only nine was infectious documented episodes. Anemia (<10g/dl) and thrombocytopenia (<100 000/μl) were observed in seven and nine pts, respectively but only four needed erythrocyte transfusions. No pt died during therapy. Of twenty seven pts evaluable for response, 15 pts (53,57%) entered a complete and seven pts (25,9%) a partial remission with a response rate of 79,47%. Another five pts progressed and lately died after failing one or two more chemotherapy regimens. With a median follow-up of 16 months, 11 pts have progressed, with a 24-month fail-ure-free survival of 74,07%. Conclusion: The FMC salvage regimen has an acceptable toxicity in heavily pretreated, intermediate and high-risk pts with indolent lymphoma. It allows a high rate of remissions but the progression is the rule. This regimen should be compared in efficacy and tolerability

with other conventional regimens or if addition of anti-B cell monoclonal antibodies is benefic

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PROGNOSIS AND SURVIVAL OF CHILDHOOD NON HODGKIN`S LYMPHOMA (NHL): A 12-YEAR EXPERIENCE

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The prognosis and survival of childhood NHL have improved drammatically during the last decades. Aim of our study was to perform a retrospective analysis regarding the clinical characteristics, outcome and survival of children with NHL who were treated according to LSA2-L2 and NHL BFM 90 protocol in a single Pediatric Oncology institution. Material of our study were 31 children aged between 2 and 15 years with NHL. Patient`s demographic data (age, sex), clinical characteristics, stage according to Murphy`s classification and histologic type of NHL (lymphoblastic, undifferentiated, anaplastic) were registered at diagnosis. Results: The median age of patients was 7.7(±3.1) years and the male/female ratio was 2.1. Of the 31 evaluated patients, 4 (12.9%) had stage I, 14 (45.2%) stage II, 9 (29%) stage III and 4 (12.9%) stage IV disease. Patients with B-cell lymphoblastic NHL constituted 35.5%, T-cell lymphoblastic NHL 32.3%, undifferentiated (Burkitt/non Burkitt) 25.8% and anaplastic large cell lymphoma 6.5%. The 5-year overall survival (OS) and event free survival (EFS) rates were 83.67% and 80.65% respectively. There was a significantly better outcome and survival for children classified as stage I/II (94.44%) in comparison to those classified as stage III/IV (61.54%) ($p<0.05$). No statistical difference was observed between histologic type of NHL (lymphoblastic/ undifferentiated/ anaplastic), age (<5/>5 years) of patients and LDH levels (<500/>500 U/L) at diagnosis and EFS. Conclusions: our data demonstrate that with modern intensive chemotherapy protocols, more than 80% of NHL patients will achieve long-lasting first remission and survival. Moreover, the stage of disease at diagnosis represents the only variable adversely associated with EFS.

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FACTORS THAT DETERMINES PROGNOSIS IN NHL AND EFFECT OF CHEMOTHERAPY ON OVERALL SURVIVAL AND DISEASE FREE SURVIVAL: A RETROSPECTIVE STUDY

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Non-Hodgkin lymphoma (NHL) is a non-specific term that consists of several lymphoproliferative malignant diseases with different clinical and histological manifestations. Prevalence rises with age and is about 50% higher in men than women. Combination chemotherapy remains the standard therapy, but relapse with the development of drug resistance continues to be a difficulty. Introduction of new therapeutic regimens, offers promise for indolent lymphomas and advances in cytotoxic chemotherapy have led to a better long-term survival prospects for aggressive lymphomas. The aim of our study was to evaluate the factors that effects to prognosis in NHL patients and effects of chemotherapy on overall survival (OS) and disease free survival (DFS). In this study we retrospectively evaluated 61 NHL patients who have been treated in Hematology Department of Hacettepe University during the time period between January 2002 and August 2004. Thirty seven (60.7%) patients were male and 24 (39.3%) were female. Mean age was 54,7±14,6 years and median was 53. Twenty patients (32.7%) had diffuse large B-cell, 9 (14.8%) had anaplastic large T-cell, 7 (11.4%) had small lymphocytic B-cell, 6 (9.8%) had Mantle cell, 5 (8.3%) had follicular, 3 (4.9%) had lymphocytic lymphoma, and 11 (18.1%) had other subtypes. As a first line treatment 51 patients (83.6%) received CHOP, 7 patients (11.4%) received FMD, 3 patients (4.9%) received other chemotherapy protocols (DHAP, CNOP, COP). Thirteen patients (21.3%) received Rituximab either with or after CHOP. Although stage of the patients did not related with OS and DFS, higher grade and International Prognostic Index (IPI) levels are found to be an independent prognostic factor that predicts OS (p=0,013 and p=0,006 respectively). Grade and IPI levels have not been found to be a prognostic factor that predicts DFS (p=0,068 and p=0,21 respectively). According to clinical and laboratory parameters, only age and bulky disease are found to be an independent risk

factor that predicts OS (p=0,048 and p=0,006). We have found no difference according to CHOP or CHOP + Rituximab in respect to OS or DFS. Our results illustrated that IPI scores, age and bulky disease are good predictives of overall survival. Using only the stage and/or grade of the disease in clinical practice for assessing the prognosis led inappropriate outcomes. Stage and grade of the disease could offer a significant result only evaluated with other prognostic markers.

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TREATMENT OF EXTRANODAL NON-HODGKIN`S LYMPHOMA

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Background: Extranodal involvement is seen in 2530% of patients with non-Hodgkin`s lymphoma (NHL). CHOP/CHOP-like therapies are the first-line therapies for NHL. Aim: To evaluate the effectiveness of CHOP-therapy in the treatment of extranodal NHL. Methods: Thirty-six newly diagnosed patients (18 male, mean age 59 years) were treated with CHOP therapy. The most common type of NHL is diffuse large B cell (55%). Extranodal involvements of bone marrow (33%), gastrointestinal system (28%), and Waldayer`s ring (19%) were detected. According to REAL classification and Ann-Arbor staging, 78% and 75% of the patients were aggressive and Stage-III-IV, respectively. The treatment consisted of 6 cycles of CHOP therapy given 21 days interval. Radiotherapy was added to therapy in 36% of the patients. Results: The rates of complete remission (CR) and relaps were 69.4% and 30.5%. Five (14%) patients died from the progression, so this treatment was not finished. Follow-up in 80 months of treatment, 58% of patients were alive. Median and mean survivals were 60 and 48.5 months. Mean survival of the patients with CR was 61 months. Mean and median survivals of the patients without CR were 14 and 21 months. According to Kaplan-Meier analysis these durations were statistically significant (p<0.0001). Survival rates were different between in the patients with indolent and aggressive, treated with CHOP therapy and CHOP+radiotherapy (p>0.05). Interestingly, in the patients with stage III-IV (60 and 48 months), median and mean survivals were longer than in those with stage I-II (32 and 35 months), but there were not statistically different (p>0.05). While WHO hematological toxicities grade I-II and III-IV were seen in 8% and 25% of the patients, rate of neurotoxicity was 8%. After relaps, 10 patients were treated with radiotherapy, R-CHOP, R-ESHAP, ESHAP, DHAP and ICE therapies. Autologous peripheral stem cell transplantation (APSCT) was performed in 7 patients. While complete and partial remissions were obtained in 4 of these patients. Conclusion: CHOP therapy is effective in the treatment of extranodal NHL. But combination therapy with rituximab and APSCT should be performed when relaps and refractory to therapy occur.

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OUTCOME OF RADIATION TREATMENT OF MALTOMA LOCATED IN PAROTID GLAND: SINGLE CENTER EXPERIENCE

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Aim: Maltoma primarily located in parotid gland is very rare entity and responded very well to low dose radiotherapy. Although there has not been standardized treatment modality for this unique entity, surgical approaches and/or radiotherapy could be curative. In this study, we have evaluated the results of 4 cases of primary parotid maltoma treated with radiotherapy in our center. Material-Method: Four cases were admitted to our center with the symptoms and signs of swelling in parotid gland region. Surgical excision and histopathological examination provided the diagnosis of primary parotid gland, and systemic screening showed no organ infiltration. All of cases were treated with fractionated radiotherapy 1.8 Gy daily doses, as the total dose of 36 Gy to involved field. Only one patient was given amifostine profilactically because of bilateral parotid gland infiltration to prevent side effects of radiation treatment. Results: All patients are women with the mean age of 47 (between 31and 60) years. Serological evaluation for helicobacter pylori and HIV was performed in 3 patients and there was no positivity. Mean pre-diagnostic symptomatic duration was 2.5 years (min 1and max 3 years). There was left parotid infiltration in three patients, and bilateral infiltration in one patient. Three patients were accepted as Stage IE and one patient in Stage IIE according to Ann Arbor classi-

fication. There was no lymphadenopathy in patient with bilateral involvement. Complete remission was obtained in all patients confirmed by all radiological and biochemical parameters. All patients have been still in remission after 15 months of follow-up without any grade 3-4 late toxicity of radiotherapy. Conclusion: Radiation therapy can be evaluated as the efficient and tolerable treatment modality in primary parotid maltomas.

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MOLECULAR STUDIES IN THE DIAGNOSIS OF T-CELL LARGE GRANULAR LYMPHOCYTE LEUKEMIA IN A NEUTROPENIC PATIENT WITH DRY TAP AND NEGATIVE FLOWCYTOMETRIC STUDIES

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Large granular lymphocyte(LGL) leukemia is clonal but heterogeneous disorder of mature lymphocyte with characteristic morphology, multiple autoimmune disorders and usually runs an indolent clinical course. Most cases exhibit a T-cell phenotype of CD3, CD8 and CD57 positivity, while the minority exhibit a CD2, CD56 and CD16 positive NK-cell phenotype. Peripheral blood (PB) and bone marrow (BM) are occupied by mature large granular lymphocytes with abundant azurophilic granules. Neutropenia is most common, although mild to moderate anemia and thrombocytopenia is not an infrequent finding. Organomegaly involving the spleen (20%-50%) and liver (10%-20%) is typical, while lymhadenopathy and skin involvement are uncharacteristic. In this report we describe an unusual patient with severe rheumatoid arthritis and neutropenia who has a clonal T-cell proliferation with a chronic, indolent clinical course and atypical lymphocytes lacking the classical LGL morphology (absence of azurophilic granules). BM aspirate yielded a dry tap and a multicolor flocytometric immunophenotyping on peripheral blood cells was negative. The diagnosis was however confirmed by molecular analysis of the TCR gene on PB cells. The patient an 81-year-old white woman with long standing severe rheumatoid arthritis was referred for evaluation of severe neutropenia. On presentation the patient was neither anemic nor thrombocytopenic and there was no history of sepsis. Abdominal ultrasound showed no organomegaly and there was no lymphadenopathy. Her Hb was 14.5 WBC 1.5 Pl. 158 and a differential showed 31.3% neutrophils and 43.8% lymphocytes. Her absolute neutrophil count was 0.5 and lymphocyte count was 0.7. A BM aspirate was a dry tap and a BM biopsy showed discrete clusters of CD57+ lymphoid precursor cells that appeared to be increased. CD3+ scattered and focally clustered small lymphocytes were present but they did not appear to be increased. BM also showed mild reticulin fibrosis. Her ESR was modestly raised at 64, rheumatoid factor was markedly raised at 1950 (normal 0-19), ANA was positive (1:320) and DNA was raised to 227.0 (normal <68.6). No diagnostic abnormality was noted in multicolor flocytometric immunophenotyping analysis of the PB. BM and PB of patients with T-LGL are occupied by mature large granular lymphocytes with abundant azurophilic granules. The diagnosis is usually confirmed by characteristic immunophenotype on PB or BM cells and finding a clonal TCR gene rearrangement. In this case immunophenotyping of PB was negative and the lymphocytes present in the PB did not have classical LGL morphology including absence of azurophilic granules. Although the bone marrow biopsy showed the presence of discrete clusters of lymphoid precursor cells some showing CD3 and CD57 positivity raising the possibility of T-LGL. However, it was the molecular analysis that showed clonal proliferations of T cell and established the diagnosis. This case demonstrates the increased sensitivity of molecular studies and should be undertaken when a definitive diagnosis of T-LGL becomes questionable.

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SPLENIC LYMPHOMA WITH VILLOUS LYMPHOCYTES AND HEPATIC CIRRHOSIS DUE TO HEPATITIS C INFECTION

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Splenic marginal zone lymphoma (SMZL) is a B cell neoplasm that involves the spleen and various organs. Splenic lymphoma with villous lymphocytes (SLVL) has the same pathologic basis with SMZL but has different expression of circulating cells. Patients usually present with moderate to massive splenomegaly. Hepatomegaly can be

present, lymphadenopathy is rare. Moderate anemia is frequent (%64), thrombocytopenia and neutropenia can be see due to splenic squestration and bone marrow infiltration but are rarely serious. B lymphocytes with pale cytoplasm, irregular cytoplasmic border and villous projections can be seen in peripheral blood smear. Immunophenotyping shows pozitivity for CD20, CD45,CD79a, PAX5/BSAP, IgM and bcl and negativity for CD43, CD23, CD10, bcl6, cyclin D1. T cell antigens are negative. Differential diagnosis should be made between SLVL and hairy cell leukemia, B-cell chronic lymphocytic leukemia and mantle cell lymphoma. Treatment strategies include splenic irradiation, splenectomy, chemoterapy with alkylating agents and purine analogues, complete remissions are reported with fludarabine. There is a high prevalance of HCV infection SMZLs`. HCV antigen may be providing a stimulus for clonal B-cell expansion. There are studies showing the benefit of antiviral treatment with ınterferon and ribavirin in HCV infected SMZL and SLVL. Here we report SLVL in a patient with HCV associated cirrhosis A 61 year old male patient admitted to the hospital with abdominal pain and distention. On physical exsamination spleen was palpable 18 cm below the left costal margin. Complet blood count showed mild anemia (hemoglobine 11gr/dl) and thrombocytopenia (84 400 /mm3). White blood cell count was 7230/uL. Peripheral blood smear showed a differential count of 85% lymphocytes most of which had villous cytoplasmic projections. Pozitivity for Anti HCV antibody was observed and HCV RNA was also pozitive with 500.000 copies. Serology for hepatitis B was negative. His abdominal computed tomography revealed 265 mm spleen, multiple intraabdominal lymphadenopathy, heterogenity of hepatic paranchyma and enlargement of portal vein. Serum cryoglobulin was negative. On bone marrow biopsy -which was done because of marked lymphocytosis- 37% mature lymphoctes some having villous projections was seen. We observed CD19, CD20, CD22, CD23, CD45 pozitivity and CD5, CD11c, CD103, CD25 negativity on immunophenotyping of bone marrow. TRAP (Tartrate-resistant acid phosphatase) stain which was done in order to make differential diagnosis with hairy cell leukemia showed negative staining. With all these data we diagnosed the patient as SLVL. Treatment with pegilated interferon and ribavirin had been initiated. His abdominal pain due to massive enlarged spleen is to get better and peripheral lymphocytosis is disappeared. Patient is still on follow up.

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UNUSUAL PRESENTATION OF NON HODGKIN`S LYMPHOMA IN CHILDHOOD

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Background: Non Hodgkin`s lymphomas (NHL) are heterogeneous group of lymphoproliferative diseases with wide histological diversity and different symptoms as a result of primary localization and spreading. Aim: to present cases with unusual primary sites of presentation of NHL. Methods and results: During the last 10 years were diagnosed 48 new cases with malignant lymphomas. 58% of all patients are still in complete remission (duration of remission from 6 months to 10 years).25% of 48 patients had died during the treatment and 14% are lost from evidence. First patient with unusual presentation of NHL is 12 years old boy with swelling in infraorbital region with mild pain and eye irritation. The main preoperative investigations have shown tumor in the region of sacus lacrimalis without local or distant spreading. Surgical treatment was done with complete resection of tumor and histological analysis confirmed lymphoblastic malignant lymphoma. The patient was treated according to LsA2L2 protocol and he is in complete remission 9 years. He has prolapsus valvulae mitralis without myocardiopathy and one transitory episode of thyroid dysfunction. The second patient is 4, 5 years old boy with acute dispnoa, cyanosis and anxiety. Bronchoscopy was immediately performed and shown present of soft tumor mass in the region of carina. Because of danger of suffocation we must aspirated and the material was necrotic tissue without possibility to get more information about histology of the tumor. CT of the chest didn`t show a significant tumor mass in the carina region. Two days later, the second bronchoscopy was done because of the same symptoms of suffocation. There was performed biopsy of the tumor mass in the right intrabronhal part under carina with histology of anaplastic large cell lymphoma. The boy was treated according ALCL protocol. During and after treatment the control bronchoscopy shown small (1-2 mm) residual tumor, like a pearl in the entry part of right bronchus without any progression during one year. The third patient is 3 years old boy with severe abdominal pain and vomiting without regular stool during the last three days. After some necessary investigations the patient was

urgent operated as acute abdomen. There was find ileocoecal invagination as a result of tumor in the wall of ileum (2x1 cm). Histology of the tumor confirmed lymphoblastic lymphoma without any distant spreading. He was treated according LsA2L2 protocol and he is in complete remission 9 years. Conclusion: presentation symptoms of NHL depended from primary site of lymphoma. There are some suppressing situations when primary site of NHL is so unusual that made confusion and delayed diagnosis.

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CD 20 POSITIVE DIFFUSE LARGE B-CELL CUTANEOUS LYMPHOMA; REPORT OF THE TWO CASES AND REWIEV OF THE LITERATURES

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Cutaneous B cell lymphomas (CBCL) are less common than cutaneous T cell lymphomas and characterized by monoclonal proliferation of B lymphocytes. There is usually a single nodule or cluster of lesions most often trunk, head and neck region. Lesions can be solitary or disseminated. While the peak age of onset is in the sixth decade, the range is broad. Diffuse large B cell lymphomas tend to widespread centrifugally and have a slow progression. The local cutaneous lesions should be irradiated. Systemic or disseminate disease requires multiple-drug chemotherapy including antracyclins. The monoclonal antibody rituximab is monoclonal antibody directed against CD20 and has been employed both systemically and intralesionally to treat CD20 positive B cell lymphomas. We describe here 2 cases of cutaneous diffuse large B cell lymphoma. First case, 76- year-old man was admitted to our hospital with diffuse masses on his trunk since 3 months. His general examination, past medical history was unremarkable. There were a lot of red-brown nodules on his trunk. His CT and bone marrow biopsy examination revealed that there was no further lymphoma infiltration. The second patient, 55 year-old man had a red nodule on the nasal dorsum for one year. Submandibular and submental lymphadenopathies had seen with CT. There was no bone marrow infiltration and accepted as stage IIA cutaneous lymphoma. Both of the patients were CD 20 positive diffuse large cutaneous B cell lymphoma on pathological examination. First case treated with rituximab and 6 cycles of CEOP and the second one by local RT and 4 cycles of CEOP. Two patients who have been followed up with complete remission for more than 1 year, showed no evidence of recurrence.

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RETROSPECTIVE ANALYSES OF RESULTS OF SHORTTERM LOW DOSE INTERFERON-ALFA 2B COMBINED WITH PUVA IN THE TREATMENT OF EARLY STAGE MYCOSIS FUNGOIDES REFRACTORY TO PUVA

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Background and aim: Early stage mycosis fungoides (MF) can be treated but not cured alone by oral photo-chemotherapy (Psorolen and UVA-PUVA). There have been some studies showing the effectiveness of combination of interferon (IFN) with PUVA compared to PUVA alone in refractory disease. In this study, we aimed to evaluate retrospectively patients with early stage MF treated with IFN+PUVA in Hematology and Dermatology Departments of Ege University Hospital Material and methods: Six patients were involved into this study with the diagnosis of early stage (Ia-IIa) MF between June 2003 and May 2005. IFN combined with PUVA was started and followed by indefinite PUVA maintenance in complete responding patients. Clinical assessment was performed at baseline and at the end of the 4-weeks treatment period. Response criteria to treatment were defined as follows: complete clinical response (CR) with no signs of active disease and disappearance of all lesions, partial response (PR) with reduction of lesions more than 50% compared to starting. In all patients, biopsy specimen was obtained before therapy for routine histopathological examination and immunohistochemical analysis. At the end of therapy a second biopsy was performed for all patients who achieved CR. Biopsies were obtained from the zone of cleared lesion adjacent to a pretreatment biopsy site. Patients achieving CR were followed up by monthly intervals until relapse. Interferon-alfa2b was administered at a dose of 3 MU three times a week and PUVA was applied 3 times a

week. Results: There were 4 female and 2 male patients, aged of mean 54.3 years (3275 years). Four patients were at stage Ia, one patient at Ib and one patient at stage IIa according to TNM staging. Four of 6 patients (%66) achieved CR and 2 of 6 (%33) achieved PR. It has not been detected any grade 3-4 side effects due to IFN. No progression has been observed during the treatment. All patients have been under treatment as planned. Conclusion: Low doses of IFN-alfa2b plus PUVA has been found to be successful in achieving excellent clinical responses in patients with early stage MF. This treatment modality has been tolerated very well.

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THE DIAGNOSIS OF NON HODGKIN`S LYMPHOMA IN EPIDERMODYSPLASIA VERRUCIFORMIS PATIENT

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Epidermodysplasia verruciformis (EV) is a rare, multifactorial disorder. This disease contains genetic and immunologic components and accompanies infection with some specific Human Papilloma Virus (HPV) types. The patients may develop multiple in situ and/or invasive squamous cell carcinomas. The most of the patients have impaired cell-mediated immunity. Although EV accompanies frequently skin cancer and extracutanous squamous cell carcinoma, the association between EV and other cancers is not described. In this report, a case of EV with primary mediastinal large B cell lymphoma is presented. A 20-year-old man was seen in our outpatient clinic. He had red-brown macular lesions in sun exposed areas as face and neck for five years duration. EV was diagnosed by histopathologic examination of skin biopsy. One month later, he started to cough. The histological diagnosis of mediastinal mass measuring 6 cm in diameter was diffuse large B-cell lymphoma. B symptoms were absent. He was diagnosed to have stage IAX disease. R-CHOP chemotherapy (Rituximab plus CHOP) and involved field radiotherapy were administered. We have been following this case for 6 months and complete remission is achieved. EV accompanies infection with specific HPV types and is seen in immunosuppressive patients. Some of EV-specific HPVs, particularly HPV 5 and 8 have oncogenic properties. These may have also lymphogenic effect. Moreover the lymphomas are seen frequently in immunosuppressive patients. We conclude that EV may be a predisposition for lymphoma.

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NON-HODGKIN`S LYMPHOMA OF THE SINONASAL TRACT: A CASE COMPLICATED WITH PNEUMOCYSTIS CARINII PNEUMONIA

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Non-Hodgkin`s lymphomas (NHLs) of the sinonasal tract are uncommon. They can be hard to distinguish from other malignant neoplasms and nonneoplastic diseases originating from this site. The incidence of opportunistic infections like Pneumonocystis carinii pneumonia (PCP) is increasing in patients with malignancies. We report an 82 year old woman presented with nasal mass, rhinitis and difficulty in breathing. During the work up for diagnosis a mass filling the right maxillary sinus with bony erosion was detected. Biopsy was taken and diffuse large B cell lymphoma was diagnosed. Chemotherapy was performed with rituximab (375 mg/m(2) intravenous), followed by three courses of combination chemotherapy (cyclophosphamide, doxorubicin, vincristine, and prednisone [CHOP]. Involved field radiotherapy was given. During follow up fever with cough and right back pain manifested. Radiological examination (chest X ray and CT images) was performed. We detected incomplete consolidation in the lower lobe posterobasal segment of the right lung. We could not perform bronchoalveolar lavage because the patient`s general condition was bad and no consent form was signed by her family. Trimethoprim sulfamethoxazole was started. She clinically and radiologically recovered after 14 days of treatment. Sinonasal NHLs are heterogenous diseases that can be clinically aggressive. They usually manifest as a complication of human immunodeficiency virus. Although it is complicated with PCP we main-

tained complete remission in this case and she is still alive.

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MULTIPLE EXTRANODAL SITE INVOLVEMENT OF NON-HODGKIN`S LYMPHOMA: CASE REPORT

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BACKGROUND About one third of non Hodgkin`s lymphoma (NHL) cases occur at extranodal sites, but presentation without lymph node involvement is rare. Moreover, involvement of pancreas and terminal ileum in addition to primary parotid diffuse large cell NHL involvement has not been reported. CASE A 82 -year- old male presented with a painful, swollen, and erythematous five cm mass inferior to the left ear. Left parotidectomy and functional neck dissection was performed at otorhinolarygology unit of our hospital. Biopsy of the mass was reported as parotid NHL- diffuse large B cell (DLBC) type. Then the patient referred to hematology clinic and examination revealed left facial paralysis, no organomegaly. An abdominal computerized tomography was performed for staging the disease. It has shown a 4 cm nodular mass at the uncinate process of pancreas and a 2.5 cm thickened region at terminal part of ileum. Colonoscopy and biopsy was performed and the pathological diagnose was DLBC lymphoma. A percutaneous ultrasound guided tru cut biopsy was performed from the mass at pancreas. The same diagnosis confirmed again as DLBC lymphoma of pancreas. Upper gastrointestinal endoscopy and gastric biopsy was performed. Helicobacter pylori positivity was shown and eradication treatment was given. There was no B symptoms. Except high lactic dehydrogenase level routine biochemistry, hemogram, bone marrow examination, chest X ray were noncontributory. Anti-HCV revealed positive result. Final Ann Arbor staging was IV A with three extranodal sites. A CHOP (cyclophosphamide, adriablastina, vincristin, prednisolon) protocol combination with rituxumab treatment modality was planned for the patient. Six cycles of CHOP had been applied. The control compuratised tomography scan after 4 cycles showed a regression but not complete resolution. DISCUSSION Involvement of multiple noncontiguous extranodal sites at presentation without lymph node involvement is very rare. Primary parotid NHL representing 1 % of all lymphomas and 8.6 % of all untreated parotid neoplasms. Also primary pancreatic lymphoma is a rare form of extranodal lymphoma less than 0.5% of pancreatic tumors originating from the pancreatic parenchyma. Simultaneous involvement of parotid with pancreas and terminal ileum at presentation is unique in our report.

Abstract: 599 Poster: 506

AN UNUSUAL PRESENTATION OF A CASTLEMAN DISEASE PATIENT WITH MYELOFIBROSIS

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Castleman`s disease (CD), also known as angiofollicular lymph node hyperplasia, is a rare disorder with benign hyperplastic lymph nodes characterized histologically by follicular hyperplasia and capillary proliferation with endothelial hyperplasia. According to our knowledge bone marrow fibrosis in association with CD have not been described in earlier reports in the literature. Here we report a case of multicentric CD (MCD) presenting with bone marrow fibrosis. Case report: A 66 year old man initially visited our hospital for evaluation of fatigue, night sweeting and pruritis of 3 months duration. Physical examination on admission showed no abnormality except for bilaterally lower cervical < 1 cm lymph node hyperplasia and pretibial oedema. Laboratory tests disclosed hypoalbuminemia (2.9 g/dL) and a normochromic anemia with a Hb level of 10.4 g/dL. Serum immunoelectrophoresis showed high levels of serum polyclonal immunoglobulins (Ig G 5000 mg/dL, Ig A 432 mg/dL). Erythrocyte sedimentation rate, C reactive protein β2 microglobulin and interleukin-6 levels were all elevated (ESR 125 mm/h, CRP 38 mg/L, β2M 6.8 mg/L and IL-6 106 pg/mL). Two months later he revisited our hospital with direct antiglobulin test IgG positive haemolytic anemia, hepatosplenomegaly and multiple cervical, supraclavicular lymph node enlargement. For a pathological

diagnosis lymph node biopsy were carried out. Microscopic examination of the lymph node showed both typical features of hyaline vascular CD and plasma cell CD. After 2 courses of thalidomide-dexamethasone-rituximab therapy the patients symptoms disappeared, elevated laboratory values showed significant improvement and physical examination findings resolved completely. In earlier reports it has been indicated that corticosteroid therapy alone does not produce long term remission in patients with MCD. The optimal therapeutic approach to MCD is still unclear. Most of the cases are treated with combination chemotherapy or corticosteroids. A variety of therapies have been employed with various degrees of success. Dysregulated over production of IL-6 is generally thought to be responsible for the systemic manifestations MCD. Thalidomide may be beneficial in the treatment of MCD with selective inhibition of the production of IL-6. Rituximab has also been successfully used in combination chemotherapies of MCD. In our case we achieved favorable response with the combination chemotherapy of thalidomide-dexamethasone and rituximab.

Abstract: 600 Poster: 507

A CASE OF SPLENIC LYMPHOMA WITH VILLOUS LYMPHOCYTES AND COMPLICATED SEVERE AUTOIMMUNE HEMOLYTIC ANEMIA

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Splenic lymphoma with villous lymphocytes (SLVL) is an indolent hematological malignancy and a rare Blymphoproliferative disorder of the elderly which has been only recently defined. Clinical features are spleen enlargement of various degrees without lymphadenopathy and an indolent course, with a long survival, in most cases. Reaction for tartrate-resistant acid phosphatase is almost always negative. Characteristically, these cells are: CD 20+, CD 11c+/-, CD 5-, CD 23-, CD 25-, HLA DR+, CD10-, HC2-, FMC7+, CD19+,CD22+ and strongly positive surface Ig (SmIg). Differential diagnosis with other chronic lymphoproliferative disorders, particularly chronic lymphocytic leukemia, hairy cell leukemia, prolymphocytic leukemia, follicular and mantle-cell lymphoma in leukemic phase, is based on clinical and immunocytomorphologic criteria. We report on a case splenic lymphoma with circulating villous lymphocytes is complicated by intractable autoimmune hemolytic anemia, was studied by immunohistochemical and ultrastructural analyses. Our patient had undergone splenectomy for improvement of severe autoimmune hemolytic anemia and to rule out malignancy in the spleen. The histologic findings and clinical data were consistent with the features of splenic lymphoma with circulating villous lymphocytes. Our patient exhibited a relatively benign clinical course, and was being followed on an outpatient basis with no additional therapy.

Abstract: 601 Poster: 508

PRIMARY PANCREATIC NON-HODGKIN`S LYMPHOMA

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Diffuse large B cell non -Hodgkin s pancreatic lymphoma is a disease of very rare incidence whith only 0.7 % of malignant pancreatic tumours and 1% of all non-Hodgkin s lymphoma (NHL). The disease is usually manifested by a large tumours mass in pancreatic head spreading to nearby areas with or without infiltration in regional lymph nodes. Diagnosis is established on his-topathological examination of the tissue sample obtained during the operation. We present a female patient, 67 y, addmited because of abdominal pain and weight loss. The ultrasound showed pancreatic head tumour. There were no hepatosplenomegalia or enlarged lymph nodes. CT-scan showed three infitrations in pancreatic head and processus uncinatus of which the largest was 43x30 mm. Since the primary traetment was nonsurgical, a sample was obtained during the procedure. Histology and immunohistochemistry showed that it was a NHL large cells which were LCA +, EMA -, HLA-DR+, CD79alfa+,CD20+++, IgG+/-, bcl-6-/+. Immunochemotherapy was administred according to R-CHOP protocol(mabthera 600mg, ciklofosfamid 1200mg, onkovin 2mg, adriablastin 80mg i prednison 60 mg) in three-week intervals, the total of 8 cycles. The treatment lead to complete responce with the improvement of performan status and the total

remission of pancreatic tumour mass.The diffuse large B cell lymphoma is an aggressive but potentially curable disease. The best results are achived by immunochemotherapy with or without additional radiation therapy.

Abstract: 602 Poster: 509

THE RELAPSE OF NON-HODGKIN`S LYMPHOMA PRESENTED WITH LARGE RENAL MASS AND PULMONARY MULTIPLE NODULES MIMICKING RENAL CELL CARCINOMA

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Primary renal involvement of non-Hodgkin lymphomas is rare, secondary involvement is not common. In case of renal mass, other causes should also be considered. There are some cases reporting an association of renal cell carcinoma with lymphoma in literature. We report a case of relapsed non Hodgkin lymphoma with pulmonary nodular involvement. A 32-year-old woman was admitted in oncology department anterior mediastinal mass and vena cava superior syndrome. Tru-cut biopsy revealed primary mediastinal diffuse large B cell lymphoma. She received six cycles of CHOP chemotherapy regimen followed by involved field radiotherapy. The complete response was achieved. After six months, she complained abdominal pain. The computed tomography demonstrated a mass with 8 cm in diameter and multiple nodules in lung parenchyma. This picture mimicked renal cell carcinoma with pulmonary metastasis. The association between renal cell carcinoma and lymphomas was reported. Although renal involvement of non Hodgkin lymphoma is seen as %50 in autopsy series, antemortem diagnosis is uncommon. Moreover after treatment of lymphoma, risk of renal cancer is elevated. However biopsy was applied from renal mass and established relapse of diffuse large B cell lymphoma. The probability of extranodal relapse of thymic lymphoma should be kept in mind.

Abstract: 603 Poster: 510

HEMODIALYSIS SHORTENS THE LONG IN VITRO CLOSURE TIMES MEASURED BY PFA-100

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Background: In patients with end-stage renal disease (ESRD), hemorrhagic complications are one of the common encountered problems. Uremic patients show a bleeding diathesis that is mainly due to abnormalities of platelet function. There are several tests to detect and measure impairment of hemostasis in these patients but none of them appear to be ideal. In recent years, PFA-100 (platelet function analyzer) was introduced to measure primary, platelet dependent hemostasis. In this study, we evaluated the effect of hemodialysis procedure on platelet functions by using PFA-100 in patients with ESRD. Methods: The study was performed on 45 patients with ESRD undergoing regular hemodialysis, ages between 20-76 (median 54). Collagen/epinephrine (CEPI) and col-lagen/ADP (CADP) closure times were measured before and after the hemodialysis session, by using PFA. Results: CEPI was significantly shortened from 230±60 to 206±63 sec after hemodialysis, ($p<0.05$). The CADP also shortened by hemodialysis from 177±69 to 169±71 sec ($p>0.05$). CEPI closure times of 10 (26%) in 38 patients with long CT returned to normal after hemodialysis. CADP closure times of 9 (25%) in 36 patients with long CT returned to normal after hemodialysis. Conclusions: Our study confirm the existence of a dysfunction of primary hemostasis in patients with ESRD and hemodialysis has the ability to correct some part of hemostatic disturbances. As a sensitive, specific, reproducible, easy to perform and noninvasive test for platelet-related primary hemostasis, the PFA- 100 system may become an useful tool for an overall evaluation of primary hemostasis in patients with ESRD.

Abstract: 604 Poster: 511

DOES LEPTIN PLAY A ROLE IN IDIOPATHIC THROMBOCYTOPENIC PURPURA?

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Background:Idiopathic thrombocytopenic purpura (ITP) is an immune disorder characterized by accelerated platelet destruction. Aim: We wanted to evaluate serum leptin levels in ITP, in order to determine the role of leptin on the pathogenesis of ITP.Methods: Twenty-three untreated patients with chronic ITP were compared with 15 healthy people of similar age, sex and body mass index (BMI). Serum leptin levels were measured by immunoradiometric assay (IRMA). Results:We found that the mean serum leptin levels in patients with ITP (26.71 +/- 17.69 ng/mL) were significantly (P < 0.001) higher than that in healthy control volunteers (6.54 +/- 4.36 ng/mL). Serum leptin levels in patients with ITP were inversely related (P < 0.001) to the platelet counts. Conclusion: We conclude that these findings suggest that leptin might be an independent factor in the pathogenesis of ITP.

Abstract: 605 Poster: 512

LATE SIDE EFFECTS OF HIGH DOSE STEROID THERAPY ON SKELETAL SYSTEM IN CHILDREN WITH IDIOPATHIC THROMBOCYTOPENIC PURPURA

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Idiopathic thrombocytopenic purpura (ITP) is a common autoimmune disease of childhood. Corticosteroids have been widely used in ITP treatment for many years. In this study, we aimed to evaluate the late side effects of high dose corticosteroid therapy on bone metabolism in children with ITP. Twenty-eight children who treated with high dose methylprednisolone (30 mg/kg/day x 3 and 20 mg/kg/day x 4) because of acute ITP and suffered from no other systemic disorders were enrolled the study. During follow-up, new thrombocytopenia attacks were treated by steroid administrations (30 mg/kg/day) for two consecutive days. The evaluation was performed at least 6 months later from the first treatment. Twenty eight sex and age-matched children who had no acute or chronic disease effecting bone turnover formed the control group. Bone mineral density (BMD), urinary calcium creatinin ratio (Ca/Cr), urinary levels of deoxypyridinoline (DPD), serum levels of calcium (Ca), phosphate (P), parathyroid hormone (PTH), total alkaline phosphatase (T-ALP) and bone specific alkaline phosphatase (B-ALP) were measured in both groups. Magnetic resonance imaging (MRI) of the femoral head was revealed only in the study group. The mean levels of serum P, PTH, urinary DPD and Ca/Cr significantly increased in the study group. There was no significant difference between two groups in terms of serum Ca, T-ALP, B-ALP and BMD values. On the other hand, there was a statistically significant negative correlation between total steroid dose (TSD) and BMD values in the study group. Osteonecrosis (ON) was observed in 3 of 25 patients by MRI of the femoral head. All patients with ON had either BMD values lower than -1 SD or TSD higher than 1000 mg/kg. In conclusion, high dose corticosteroid therapy, especially in high cumulative doses, increases the bone resorption and may cause ON in children with ITP.

Abstract: 606 Poster: 513

TREATMENT OF CHRONIC REFRACTORY IDIOPATHIC THROMBOCYTOPENIC PURPURA WITH CYCLOSPORIN OR DAPSONE AS A SINGLE AGENT THERAPY

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Background:The persistence of thrombocytopenia for longer than 6 months characterize chronic immune thrombocytopenic purpura(ITP).Many patients will be resistant or dependent on high dose steroid therapy,requiring an additional treatemnt such as splenectomy,high dose intravenous gammaglobulin(IVIg),danazole or other immunosuppressive drugs. Aim:The aim of this study was to evaluate the efficacy and safety of cyclosporin and dapsone in chronic refractory ITP Method:This study was conducted in Departnmrt of Hematology,AIIMS,New Delhi,India between September 2004-May 2005.Diag-nosis of ITP was made according to the usual criteria. The inclusion criterias were failure of treatment with steroids,splenectomy,danazole or other immunomodulatory drugs.No specific therapy was to be given at least 2 week prior to trial.Secondary causes of thrombocytopenia were excluded.G6PD

was excluded in patients to receive dapsone therapy. Drugs and Doses:Cyclosporin was started at 5mg/kg/d in 2 divided doses for 1 week and than reduced to 3 mg/kg/d to maintain the serum level between 200-400ng/ml.Dapsone was started at 100mg/d in adult and 2mg/kg/d in children. Response criteria: Complete response(CR)-Platelets counts of 100,000/mm3 or more for atleast 2 months;a partial response(PR)-Platelets counts atleast double of initial levels and more than 50,000/mm3 for at least 2 months;no response included none of the above.In patients showing response to therapy,the drug was continued for 6 months and thereafter tapered off.If no response was seen at the end of 3 months the drug was stopped. Results:Twenty-eight patients were studied;with a median age of 13 years(4-60 years);Males-57.1%;Females-42.9%.Median duration of ITP was 2 months(6-500 months).Presenting features were:Skin bleed-100%;mucosal bleed-57.1%,hematuria-10.7%,gastrointestinal bleed-25%;pervaginal bleeding in 50% of females.Previous therapy:prednisolone in all with transient response in 3;IVIg in 8 with transient response in 2;splenectomy in 4 without response and danazole in 3 without response.Base line platelets counts were 20,000/ mm3(2,000-50,000/mm3).13 patients were received dapsone and 15 patients were received cyclosporin as sigle agent therapy. Dapsone:CR was attained in 3 and PR in 4 with overall response in 30.8%.Age was 11 years in1 and more than 18 years in 3 patients.Response started in 2nd month of therapy.Hemolysis due to dapsone was seen in one patients after 2 months and drug was stopped. Cyclosporin:CR was attained in 3 and PR in 4 with overall response in 46.7% of patients.In responders,age was less than 18 years in 3 and more than 18 years in 4.Response started in 2nd month of therapy.One patient with CR realpsed after 6 months while tappering the drug,developed intracranial bleed and expired.Another patient developed hypertension,which was controled with antihypertensives. Conclusion:Both cyclosporin and dapsone appears promising in chronic refractory ITP and merit further evaluation

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Abstract: 607 Poster: 514

EFFECTS OF VARIOUS THERAPEUTIC REGIMENS ON PLATELET FUNCTIONS IN PATIENTS WITH MYELOPROLIFERATIVE

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Platelet function abnormalities are common in patients with myeloproliferative disorders (MPD) and implicated in the pathogenesis of thromboembolic and hemorrhagic complications. In this study we performed platelet aggregation studies in 36 patients with newly diagnosed chronic myeloproliferative disorders: 23 with chronic myeloid leukemia (CML), 8 with polycthemia rubra vera (PCRV) and 5 with essential thrombocythemia. We investigated platelet functions by optical aggregometry and whole blood platelet lumiaggregometry (WBPA), using four agonists (ADP, arachidonic acid, ristocetin and collagen). Platelets were considered to be hyperactive if at least one result (impedance or release with one agonist) was above the reference range, and hyporactive if at least one result (impedance or release with one agonist) was below the reference range. Mixed hypo- and hyperactive platelets were considered present when at least one result (impedance or release) was below and above the reference range, respectively. WBPA studies showed that 13 patients had platelet hyperfunction, 13 patients had coexistence of hyper- and hypofunction and 9 patients had platelet hypofunction. 1 patient had a normal result. Optical aggregometry demonstrated that 15 patients had platelet hypofunction, 7 patients had platelet hyper- and hypofunction, 4 patients had platelet hyperfunction whilst 10 had normal results. Repeat platelet function studies were performed in 17 patients, following specific therapy regimes. By the luminesance method; 12 patients had hypoactive, 2 patients had hyperactive and 2 patients had mixed hypo- and hyperactive platelets while 1 patient had a normal result. By the optical method; 14 patients had mixed hypo- and hyperactive platelets, 2 patients had hyperactive platelets and 1 patient had hypoactive platelets (Table 1). In CML patients hypofunction, in PCRV and ET patients hyperfunction were the most common forms of platelet function abnormality. We also performed a direct comparison between the two methods we used and showed that the percentage of the luminescance method for in vitro detection of platelet function abnormality was higher than the optical method and there was a statistically significant difference between them ($p<0.05$). We conclude that; 1. Different platelet function defects are observed in most of patients with MPD 2. Patients with CML have platelet hypoaggregability while patients with PCRV and ET have platelet hyperaggregability. 3. Our observations highlight the need to use WBPA

to select patients for antiplatelet therapy in MPD. 4. Luminesance method appears to be more sensitive than optical method to evaluate platelet functions.

Abstract: 608 Poster: 515

2,3-DPG INHIBITS PAF INDUCED PLATELET AGGREGATION

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Introduction: 2,3-DPG is an important molecule, produced in significant quantities in the erythrocytes during glycolysis through Rappoport-Luebering shunt. Being very sensitive to the oxygen demands of the cell, one of its mandatory roles is the facilitation of oxygen liberation from haemoglobin. Purpose: To investigate the actions of 2,3-DPG on platelet aggregation. Materials-Methods: In the rich platelet plasma (RPR) of 28healthy volunteers were made: i) Platelet Aggregation (PA) measurements using Cronolog Co. Ca-500 aggregometer and Platelet Activating Factor (PAF) as platelet stimulator, ii) Measurements of platelet produced Thromboxane`s A2 (TXA2) using radioimmune assay (RIA) of Izotop Co. Ltd and ã-counter. Results: i) 2,3-DPG inhibits completely PA, ii) PA`s inhibition by 2,3-DPG is accompanied by a notable decrease of TXA2 levels in RPR. Conclusions: 2,3-DPG seems to inhibit PA by blocking the production of TXA2 - a main platelet stimulator - possibly acting in the arachidonic acid metabolism pathway and specially decreasing the functionality of the enzyme cycloxygenase.

Abstract: 609 Poster: 516

DISTRIBUTION OF PLATELET AGGREGATION TESTS RESULTS IN A REFERENCE LABORATORY

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Platelet aggregometry is a widely used test method for diagnosis of platelet function disorders. We have retrospectively evaluated platelet aggregation test results of patients who were examined due to mucocutaneous bleeding manifestations. During 2001 and 2005 617 patients were studied. Blood samples were drawn into 0.129 M 1:9 sodium citrate containing vacuum tubes. Platelet aggregation tests were studied within 2 hours of blood sampling using optical method (Chrono-Log 560-Ca Aggregometer, Havertown, PA). The following reagents in the specified final concentrations were used for aggregometry: ADP (2 and 10 μM), epinephrine (10 μM), collagen (2 μg/ml) and ristocetin (0.5 and 1.25 mg/ml) (Chrono-Par Reagents, Havertown, PA). von Willebrand factor antigen (vWF:Ag) (STA-Liatest vWF, Diagnostica Stago, Asniéres, France), ristocetin cofactor activity (RiCof:Act) (Ristocetin Cofactor Assay, Havertown, PA) levels, collagen/epinephrine (CEPI) and collagen/ADP (CADP) in vitro bleeding times (Dade Behring Marburg GmbH) had also been determined when indicated. The test results were normal in 383 patients (62%). Platelet secretion defect, von Willebrand disease, Glanzmann`s thrombasthenia and Bernard-Soulier disease were diagnosed in 113 (18,3%), 68 (11%), 48 (7,8%) and 7 (1,1%) cases, respectively. Secretion defects are the most common platelet function disorders encountered in clinical practice.

Abstract: 610 Poster: 517

VITAMIN C: ANTIPLATELET AND ANTICANCER FUNCTIONS

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Introduction: Natural killer cells (NK Cells-NKCs) are a subpopulation of lymphocytes that play an important role in the immune system. Membranic Platelet receptor GpIIb-IIIa contributes to platelet aggregation by binding fibrinogen. Vitamin C (Vit C) seems to have exceptional scientific interest on thromboembolic diseases and cancer. Purpose: The investigation of possible induction of func-

tionality of NK cells and inhibition of the expression of the platelet receptor GpIIb-IIIa by the use of Vit C. Materials and Methods: i) In 28 healthy volunteers, the cytotoxicity of NK cells after the use of Vit C was detected, with the methods of cytotoxicity assay and flow cytometry, ii) After the administration of Vit C in the isolated platelet rich plasma (PRP) of 28 healthy volunteers, the number of receptors GpIIb-IIIa per platelet was detected using monoclonal antibodies and the methodology of flow cytometry Results: i) The increase of cytotoxicity observed was 110%, 67%, and 282% in average in the ratios 12.5:1, 25:1, and 50:1 respectively, ii) The expression of the receptor GpIIb-IIIa was decreased about 98% compared with the healthy volunteers, after the use of Vit C. Conclusion: Vit C can be useful in therapy and prevention of cancer and thromboembolic diseases.

Abstract: 611 Poster: 518

IDIOPATHIC THROMBOCYTOPENIC PURPURA AND OPPORTUNISTIC INFECTIONS IN CHILDREN

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We`ve included the blood analyses of the opportunistic infections into the diagnostic program of children with ITP. We`ve observed 299 children with acute ITP. The research was being done during the first days after diagnostic of ITP. Among the observed children, 162 has achieved full clinic and laboratory remission due to basic therapy, and the opportunistic infections were revealed only in 24 of them (14,8%): CMV 6%, Epstein-Barr herpetovirus 3%, mycoplasma 2%, herpes simplex 1%. The combination of several of opportunistic infections was marked only in 3% of the patients. Most of these children had Ig G antibodies to CMV-infection in low titers. We`ve observed also 137 children with acute ITP, which didn`t achieve the remission. The course of ITP in these patients took the chronic condition, in spite of the received therapy. We`ve fixed 75 patients among them (54,7%) who had different opportunistic infections: CMV 15%, herpes simplex 3%, Epstein-Barr herpetovirus 2%, mycoplasma 1%. The combination of several of opportunistic infections was marked 10 times more often than in the patients of the first group (32%). More of the patients of the second group had Ig G antibodies to different opportunistic infection agents in high titers and Ig M antibodies in medium titers. So, we consider the presence of opportunistic infection agents in high titers in children with ITP to be one of the main factors of its chronic condition. Such patients need specific therapy together with the basic therapy in order to decrease the percent of chronic ITP in children.

Abstract: 612 Poster: 519

EFFECTS OF GLOUTATHIONE ON PLATELET ACTIVITY

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Introduction: Gloutathione (GSH) is a tri-peptide which plays an important role on the protection of protein thiolic groups against oxidosis. Membranic platelet receptor GpIIb-IIIa contributes to platelet aggregation (PA) by binding fibrinogen. Aim: To investigate the possible inhibition of: a) PA and b) the expression of GpIIb-IIIa ex vivo, through administration of GSH. Materials and Methods: 28 healthy volunteers participated in the study as blood donors. GSH was administered in their rich platelet plasma (PRP) in concentration 3×10-3Ì. PA trials to the PRP were implemented with epinephrine as stimulant. Same trials took place after administration of GSH in the PRP at the concentration of 3×10-3Ì. PA was calculated in a PICA Chronolog Co. aggregometer. GpIIb-IIIa receptors were measured by ADIAflo Platelet Occupancy kit, American Diagnostica Inc. and the flow cytometer Epics XL-MCL-Beckman Coulter Co. Results: After the administration of GSH: a) Inhibition of PA was provoked at 88% and b) The expression of the receptor GpIIb-IIIa decreased by 93%. Conclusions: GSH, known to be free oxygen radicals scavenger, is possible to act at the level of platelet receptors GpIIb-IIIa inhibiting their function and in this way averting the configuration of platelet clotting.

Abstract: 613 Poster: 520

NEONATAL ALLOIMMUNE THROMBOCYTOPENIA DUE TO HPA-1 INCOMPATIBILITY AND

PREVALENCE OF HPA-1 [PL(A)] IN OMANI POPULATION

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Background: Alloimmune mediated thrombocytopenia due to platelet destruction by antibodies to platelet specific antigens is seen in several clinical conditions like fetal or neonatal alloimmune thrombocytopenia [NAIT], posttransfusion purpura and refractoriness to platelet transfusions. These conditions require a detailed serological analysis to identify the antibodies directed at the various platelet specific antigens. Importantly, these methods require two crucial agents namely a well characterized typing sera and a panel of phenotyped donors, thereby restricting its use to a few specialized laboratories with adequate facilities. Aims: Genotyping of the common human platelet alloantigens [HPA] of the parents with children who develop NAIT in the offsprings to ascertain the probable cause for the relevant incompatibility. Methods:We recently investigated a lady, FAM, a 30 year old, who presented with 30 weeks amenorrhea, G4PA1, with a history of 2 having delivered two children with the characteristic presentation of NAIT. Genotyping of the common HPA epitopes (HPA-1,2,3,4,&5) was carried out by sequencing the relevent genomic region using standard techniques.[ABI Prism Automatic Sequencer]HPA-1 polymorphism was also studied in 60 normal healthy male and female Omani blood donors to ascertain the frequency of the HPA-1 epitopes in the general Omani population (Table 1). Results: She was demonstrated to be homozygous for HPA-1b (Fig.1), whereas her husband and both children were heterozygous. There was no demonstrable incompatibility in the HPA-2,3,4,&5 amongst the parent (Data not shown). Homozygosity for HPA-1a was seen in 89.3% whereas hetrozygosity for HPA-1a/1b was seen in 10.7% in the general population. Summary/Conclusions:We present here for the first time the prevalence of HPA-1 in ethnic Omani Arab population and compare it with the available data in the various population groups. Surprisingly, the HPA-1 genotyping data from the Omani population is intermediate to the Asian and Caucasian populations, and quite contrarary to the only study reported from the Saudi Population.

Abstract: 614 Poster: 521

RESULTS OF SPLENECTOMY IN OUR PATIENTS WITH CHRONIC ITP

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Immune thrombocytopenic purpura (ITP) is an autoimmune disease with an acute or chronic course and that can lead to life-threatening bleeding episodes. 70-80% of childhood ITP results in complete remission either spontaneously or by short term therapies. Splenectomy is an important choice of treatment in cases of chronic ITP unresponsive to chemotheurapeutics. 27 patients, 14 male (52%) and 13 female (48%), diagnosed as chronic ITP and splenectomized between the period January 1995 and July 2004 in our pediatric Hematology and Oncology department were assessed. Splenectomy was carried out in patients with recurrent severe trombocytopenia despite various chemotheurapeutic regimens. The age at diagnosis was 2.2-14.2 (Median age: 6 years). Trombocyte values before splenectomy, without treatment were 2000-26000 /mm3 (median 11000/mm3) In order to increase the thrombocyte counts before splenectomy; high dose methyl prednisolone (HDMP) was administered to 8 patients at the dose of 30 mg/kg/day for 3 days. 10 patients were treated with oral dexamethazone at the dose of 16 mg/m2/day for 4 days, 4 patients received intravenous immunglobulin (IVIG) 1 gr/kg/day for 3 days and 2 of them received IVIG + HDMP. We aimed to reach trombocyte counts over 50000/mm3 to carry out splenectomy. The age of splenectomized patients ranged between 4.5-14.8 years (median 8 years). We did not observe bleeding, adhesion ileus or sepsis in any of the patients after splenectomy. Trombocyte counts after splenectomy ranged between 114000-1118000/mm3 (median 461000/mm3). There was complete remission in 18 (67%), (thrombocyte count higher than 150000/ mm3) and partial remission (trombocyte count 50000-150000/mm3) in 7 (25%) of the patients 6 months after splenectomy. 2 patients (8%) did not respond to splenec-

tomy (thrombocyte count /20000/mm3). As a result, splenectomy is an effective choice of treatment in cases of severe trombocytopenia which does not respond to various chemotheurapeutic alternatives.

Abstract: 615 Poster: 522

THE EFFICACY OF TREATMENTS OF IMMUNOLOGIC THROMBOCYTOPENIC PURPURA

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Background Immunologic thrombocytopenic purpura is pathology with various ethiologic factors. It may be an acute form or may go on to a chronic one. The treatment of it depends on immunologic mechanism of the disease. There are proved many different treatments for it. Aims To study the efficacy of the fist line treatments of PTI Methods We studied patients diagnosed for the first time with PTI. After the diagnosis they followed the protocol: a. The first group were treated with oral Prednison for at least three weeks. b. The second group were treated with venous Prednisolon. c. The third group were treated with intravenous Dexamethasone with dose 40 mg/day for 4 days. It was evaluated platelets count, before the beginning of treatment and during of it. It was evaluated platelets count one and two weeks after the treatment. It was considered Complete Remission platelets count >= 150,000. It was considered Partial Remission platelets count >= 100,000. It was considered failed treatment platelets count < 100,000. The period >=3 months from the beginning of treatment with failed result it was considered for a chronic PTI. The Progressive Rate of disease was considered the percentage of patient that was transformed on chronic PTI. The patients were controlled for liver damage. Results 53 patients with mean age 35.18 years were treated with oral Prednisolon. After treatment the Complete Remission was resulted for 20 patients (37.73 %). Partial Remission was resulted for 12 patients (22.64 %). Were failed 21 cases (39.62 %). Progressive Rate was 69.81 % (37 patients). 23 patients with mean age 38.78 years were treated with Prednisolon. Complete Remission was resulted for 9 patients (39.13 %). Partial Remission resulted for 4 patients (17.39 %). Were failed 10 cases (43.47 %). Progressive Rate was 73.91 %. 20 patients with mean age 33.1 years were treated with Dexamethasone. Complete Remission resulted for 14 cases (70 %). Partial Remission resulted for 2 cases (10 %). Were failed 4 cases (20 %). Progressive Rate was 35 %. Conclusions: Dexamethasone with high dose is the best first line treatment for PTI. Progressive Rate is visible lower in patients treated with Dexamethasone.

Abstract: 616 Poster: 523

THE ROLE OF GAMMA-GLUTAMYLTRANSFERASE (GGT) ACTIVITY ON EARLY PLATELET APOPTOTIC PROCESS

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Background: Exposure of living cells to increased reactive oxygen species (ROS) can induce cell injury. However, basal production of ROS can regulate cellular functions such as proliferation, apoptosis. Recent studies have identified that gamma-glutamyltransferase is a novel source of oxidative stress. The major function of GGT is to metabolise extracellular reduced glutathione (GSH). Then the metabolites can be transported into the cell for de novo synthesis of intracellular GSH. GGT activity can give rise to redox reactions, leading to the production of ROS and lipid peroxidation. Exposure of membrane phosphatidylserine (PS) has been identified as an early event during apoptosis of several cell types. Aims: The present study was designed to investigate whether the inhibition of platelet GGT has an apoptotic effect on platelets or not. Methods: In this study, the specific GGT inhibitors, acivicin and L-serine/boric acid complex were used. PS expression (Annexin V) was measured by flow cytometry in washed platelets before and after activation with ADP (10 μM). The control group of the study has been held without using acivicin and L-serine/boric acid complex. Additionally, after stimulation of GGT activity with GSH and glycylglycine (gly-gly), PS expression was measured. Platelet GGT activity was determined by spectrophotometric assay. Results: The inhibition of GGT activity with acivicin (500 μM) and L-serine/boric acid (5/10 mM) significantly increased PS expression on resting platelets, respectively, $p<0.001$, $p<0.001$. But both inhibitors did not show any significant effect on platelets after stimulation by ADP. In resting platelets after the

stimulation of GGT with gly-gly and GSH, similar levels were observed compared to the control group. A significant increase was observed in PS expression after GGT inhibition with both inhibitors compared to the platelets in which GGT activity was stimulated with GSH and gly-gly after activation with ADP ($p<0.01$, $p<0.001$ respectively). Conclusion: In conclusion, the inhibition of GGT in platelets induces platelet apoptosis. Interactions between platelet apop-tosis/platelet GGT and cardiovascular diseases need further investigation.

Abstract: 617 Poster: 524

INVESTIGATION OF INCIDENCE OF THROMBOCYTOPENIA IN NEONATES ADMITTED TO NEONATAL INTENSIVE CARE UNIT

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Background:Thrombocytopenia is a hematologic problem in neonates admitted to NICU. Up to 5% of healthy neonates may have thrombocytopenia at birth. severe thrombocytopenia (platelet<50,000/mm^3) Occurs in 0.1-0.5 % of neonates.The frequency of thrombocytopenia in sick neonates admitted to NICU wards has been reported between 15-40 %. There is also different studies regarding risk factors in developping thrombocytopenia in neonates. Aims: According to the frequency of thrombocytopenia and it`s complications and because of lack of such research in our country, this study was carried on neonates admitted to tertiary NICU of Mofid children university hospital, during years 2003-4. Methods: In a cross-sectional study,all neonates who admitted to NICU from june 2003-june 2004 were enrolled the study.They categorized to three groups regarding platelet count: non thrombocytopenic, mild to moderate thrombocytopenia and severe thrombocytopenia. Incidence of thrombocytopenia was determined and contribution of variables such as sex, gestational age, intrauterine growth retardation, intraventricular hemorrhage, sepsis, placental insufficiency and operation to occurrence of thrombocytopenia was analyzed. Results:There were 436 admissions (264 male,172 female) during the study period.The overall incidence of thrombocytopenia was 25.2%(110 cases),which half of them had mild-moderate thrombocytopenia and half of them developed severe thrombocytopenia.Throm-bocytopenia was significantly associated with prematurity, intrauterine growth retardation, intraventricular hemorrhage, sepsis and placental insufficiency.There was no relation between occurrence of thrombocytopenia and sex or operations performed in neonates. Conclusion: It seems that thrombocytopenia and it`s associated factors are prevalent in neonates admitted to NICU. Analytic cohort studies are recommended for identification of risk factors in neonatal thrombocytopenia. With better prenatal care and prevention of premature deliveries risk of occurrence of neonatal thrombocytopenia can be decreased. In the case of late onset thrombocytopenia pediatricians should be aware about late onset sepsis. Keywords:neonatal thrombocytopenia,prematurity,sepsis ,preeclampsia,risk factors

Abstract: 618 Poster: 525

SOLUBLE PLATELET GLYCOPROTEIN V IN DISTINCT DISEASE STATES OF PATHOLOGICAL THROMBOPOIESIS

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Quantitative platelet disorders (i.e; thrombocytosis or thrombocytopenia) may also be associated with qualitative platelet alterations. Clonal thrombocythemia (CT), reactive thrombocytosis (RT), immune thrombocytopenic purpura (ITP), and thrombocytopenia of aplastic pancytopenia (AA) or infiltratif bone marrow disorders represent the major classes of pathological thrombopoiesis. Glycoprotein V may serve as an in vivo marker of platelet activation in thrombotic and hemorrhagic states. The aim of this study is to assess circulating plasma soluble platelet glycoprotein V (sGPV) concentrations in distinct disease states of pathological thrombopoiesis. The hypothesis was that the sGPV reflects ongoing platelet activation during the complicated clinical course of those quantitative platelet disorders. The whole study group comprised 20 patients with thrombocytopenia, 32 patients with thrombocytosis and 14 healthy adults as the control group. sGPV levels were determined by the com-

mercially available enzyme immunoassay (ELISA) method by using the Asserachrom sGPV immunoassay (Diagnostica Stago, Asnières, France). Soluble GPV were significantly increased in the group of thrombocytosis patients in comparison to the thrombocytopenic group ($p<0.0001$) and the healthy control groups ($p<0.0001$). When sGPV levels were corrected according to platelet number (sGPV/tr), this ratio was very high in patients with thrombocytopenia compared to patients with thrombocytosis ($p<0.001$) and control group ($p<0.001$). Our results suggest that there is an ongoing platelet activation associated with thrombocytosis regardless of its origin is either CT or RT. Increments in platelet numbers are associated with increased sGPV concentrations, and thus activated platelets. When sGPV levels were corrected according to platelet number (sGPV/tr), this ratio was very high in patients with thrombocytopenia compared to patients with thrombocytosis and control group. Therefore, glycoprotein V system may serve to activate residual platelets in thrombocytopenia regardless of its origin is either ITP or AA.

Abstract: 619 Poster: 526

LEVOSIMENDAN HAS AN INHIBITORY EFFECT ON PLATELET FUNCTION

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Backgrounds Levosimendan, a novel calcium sensitizer, enhances cardiac contractility by increasing myocyte sensitivity to calcium, and induces vasodilatation. Although several studies have evaluated the efficacy of levosimendan in patients with heart failure, we do not know whether or not it might produce functional influence on platelet response. Aim To clarify this situation, in this study, we investigated the effect of levosimendan on platelet aggregation in whole blood of 12 healthy volunteers. Methods Three concentrations of levosimendan solution were prepared that would result in 10, 25 and 45 ng/ml levosimendan concentration in the blood similar to that observed after clinical therapeutic intravenous application of 0,05-0,2 µg/kg/min. Each concentration of levosimendan solution and the diluent not including levosimendan for control were incubated with whole blood. After an incubation for 30 minutes, aggregation responses were evaluated with ADP (5 and 10 µM) and collagen (2 and 5 µg/ml) in platelet rich plasma. Results When compared to control, preincubation with all dilutions of levosimendan inhibited aggregation of platelets induced by ADP and collagen in a statistically significant manner. Levosimendan also inhibited significantly secondary wave of platelet aggregation induced by ADP. Our results showed that there was a relationship between levosimendan concentration and inhibition of platelet aggregation response. Conclusion This study with an in vitro model showed that levosimendan had significant inhibitory effect on platelets in clinically relevant doses.

Abstract: 620 Poster: 527

NITRIC OXIDE AND ACTIVATION-DEPENDENT CHANGES ON PLATELET SURFACE IN SICKLE CELL ANEMIA PATIENTS WHO UNDERGO APHAERESIS

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Nitric oxide (NO) regulates blood vessel tone, endothelial adhesion, leucocytes, and platelet activity, important factors in ischaemia-reperfusion injury and sickle cell induced ischaemia. NO can inhibit the activation of blood platelets. Automated red cell-exchange (ARCE) is a procedure by which about 60 % of a patient`s red cells are exchanged for those of a donor by using an automated process called aphaeresis; the aim of this procedure is to prevent the complications of SCD. We planned to investigate the effects of NO on the activation-dependent changes on platelet surface in patients with SCD who undergo aphaeresis. The patient population included 23 cases (10 F, 13 M) ranging from 20 to 48 years of age. Stable NO product (nitrate, and nitrite) and were measured before and after ARCE by using spectrophotometric methods. The expressions of circulating platelet CD41, CD61, and CD62p (using antibodies directed against platelet glycoprotein IIb, glycoprotein IIIa, and P-selectin by flow cytometry) were demonstrated before and after ARCE. When comparing before procedure CD41 and CD61 expressions to after procedure CD41 and CD61 expressions, significant increases were

observed after the procedures (P < 0.05, for both). There were no statistically significant differences, in regard to NO level and CD62P expression before and after ARCE (P > 0.05, for both). We did not find significant correlation of NO concentrations and activation-dependent changes on platelet surface before and after ARCE (P > 0.05, for all). In conclusion, these results indicate that activation-dependent changes on platelet surface associated with ARCE procedure might be exert by mechanisms rather than NO effects.

Abstract: 621 Poster: 528

NEW PARAMETERS OF PLATELETS ACTIVATION IN PLATELET CONCENTRATES

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The clinical use of platelet concentrates derived from buffy coat (PC-BC), as a standard therapy in the treatment of haemato-oncological thrombocytopenic patients, needs the routine measuring of the platelet count (PC) and the indices of platelet (PLT) morphology, function and activity. The minimizing the cell damages during PC-BC collection, processing and storage, to obtain the highest possible yield and functional recovery, is imperative. The aim of this study was to evaluate the changes of PLT activating parameters during liquid-storage at 20±2oC of PCBC collected from healthy blood donors. The routine PLT parameters (PCx109/L); the mean volume, (MPV,fl), and new parameters of activity, the mean component concentration (MPC,g/L), platelet component distribution width (PCDW,g/L), mean platelet mass (MPM,pg), platelet mass distribution width (PMDW,%) and clamps were measured (Bayer Advia 120 System) in 20 PC-BC units on day 1, 3, 5 and 7. The results showed significant decreasing in PC and MPC progressively (for 22%) from 317±120 to 236 ±110 ($p<0.001$) and from 216±11 to 185±28 (15%), $p<0.01$, respectively. The PCDW, as an indicator of morphological changes, was significantly decreased, except on day 3th. MPM and MPV were not changed. PMDW and clamps showed the increasing from 0.63±0.06 to 1.0±0.1 ($p<0.001$) and 37±21 to 91±61 ($p<0.001$), respectively. PCDW decreasing indicates shape differences with spontaneous activation. Decreased MPC, as a marker of PLT density, indicates a granules releasing. Simultaneous PC decreasing and clamps increasing show PLT fragmentation and aggregation. During investigated period PLT were remarkable activated, disintegrated and clamped. Nevertheless all changes, therapeutic effectiveness and PLT in vivo recovery is very good up till 7 days storage.

Abstract: 622 Poster: 529

THE MORPHOFUNCTIONAL STATE OF LIVING PERIPHERAL BLOOD PLATELETS IN PATIENTS WITH PRIMARY AND SECONDARY ANTIPHOSPHOLIPID SYNDROME (APS)

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The evaluation of the platelet activating level forming the primary substratum of complications in patients with APS is extremely important for the differential diagnostics of different variants of APS and diseases connected with vascular disturbances. Aims: to study the features of morphofunctional states of living platelets in patients with primary and secondary APS using computer phasemetry (CPM). Methods: 31 patient with primary (12) and secondary (16 with APS and SLE; 3 with only SLE) were studied. 20 healthy volunteers were included in the comparison group. The routine hemostasis tests, quantifying antiphospholipid antibody (aPL), CPM were used. The age of patients was from 15 to 47 years, the duration of diseases was from 1 to 20 years. All patients with APS had thrombosis in anamnesis, 5 patients had thrombocytopenia in the moment of examination. Results: the mean platelet parameters in patient with APS were distinguished from control by the increased (in 1,5-2 times) diameter, perimeter, area and volume and low phase height of the cells (ğ< 0,05). According to the results of living cell morphology 83,3% of patients had the high level of platelet activating state with elements of decompensate (32%- the resting platelets; 52% - activating forms; 16% -degenerating forms, against 60, 35 and 5% in the comparison group). Conclusions: the account of results CPM and routine hemostasis tests are provided the sufficient degree of objectivity and information for the evaluation of the hemostasis disturbances in diagnosis of the severity of pathological processes in patients with APS.

Abstract: 623 Poster: 530

THE IN VITRO EFFECT OF DIFFERENT MOLECULAR WEIGHT HYDROXYETHYL STARCH SOLUTIONS AND SALINE ON PLATELET AGGREGATION

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Background -Crystalloid and colloid solutions used in clinical practice have different effect on coagulation. In many studies, that have used the thrombelastography and the platelet function analyzer methods, high molecular weight Hydroxyethyl starch (HES) has been reported to interfere with vWF and GPIIb-IIIa,causing prolongation of the clotting time and inhibition of the platelet functions. Aims - Since the effect of HES on platelet aggregation itself has not been a matter of research, the purpose of our study was to investigate the effect of different molecular weight HES on platelet aggregation, compared with saline, by using the aggregometry method. Methods - In our study blood samples were obtained from twenty healthy blood donors (15 men and 5 women) of ages between 18 and 50. The blood samples were diluted in 1:5 ratio with three different molecular weight HES and saline solutions, respectively. One fifth of the donated blood sample was preserved to measure baseline aggregation. The diluted blood samples were then prepared for aggregometry according to the guidelines. We used ADP, Ristocetin and Collagen to induce platelet aggregation. Aggregation curves were recorded for each agonist. The maximum aggregation value (MAV) and the slope value (SV) of the aggregation curve were taken as parameters of the platelet aggregation. Results - Aggregation responses to ADP were not statistically different for any diluent used in the study. MAV for ADP varied from 0,73 to 0,84 ($p>0,05$) and SV varied from 0,69 to 0,79 ($p>0,05$). In the platelet aggregation induced by Ristocetin, samples diluted with high molecular weight HES showed higer MAV compared with the other three diluents and baseline (1,22 vs 1,10 vs 1,07 vs 1,10 vs 1,11; $p<0,01$). Slope values for Ristocetin were not statistically different (0,62 - 0,71; $p>0,05$). In the aggregation response to Collagen we found that medium and high molecular weight HES both had higher MAV compared to low molecular weight HES, saline and baseline respectively (0,99 and 0,97 vs 0,93 vs 0,89 vs 0,86; $p<0,05$). In the Collagen study no differences were found between the slope values (0,78 - 0,92; $p>0,05$). Conclusion - Results show that the slope value of the platelet aggregation is not affected by any molecular weight HES or saline solution. On the other hand higher molecular weight HES solutions may precipitate exagerated platelet aggregation, leading to the observed hyperaggregation phenomenon in our study. We suggest that this does not reflect hypercoagulable state. It can be due to premature activation of the aggregation process by this macromolecule, and this may in fact occur before platelet adhesion, which potentially could alter the whole primary hemostasis.

Abstract: 624 Poster: 531

ACQUIRED AMEGAKARYOCYTIC THROMBOCYTOPENIC PURPURA, PARTIALLY TREATED WITH ANTI THYMOCYTE GLOBULIN. A CASE REPORT

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Acquired amegakaryocytic thrombocytopenic purpura (AATP) is a rare bone marrow failure syndrome characterized by severe thrombocytopenia with a total absence or a marked reduction of bone marrow megakaryocytes (1). We report here an AATP case that has been partially treated with antithymocyte globulin (ATG). A 23 year old man presented with a 4-months history of mucocutaneous bleeding symptoms (gum bleeding, hematuria and petechiae). Physical examination showed petechiae and otherwise normal. His white blood cell count was 8700/mm3, hemoglobin 12,8 g/dL, and platelet count was 6000/mm3. Bone marrow aspiration and biopsy showed hypercellularity with slightly reduced erythroid cells and absence of megakaryocytes (adipose tissue %40-50). Bone marrow cytogenetic study revealed normal karyotypes. Screening for antinuclear antibodies was negative. Serological tests for common viral infections including Parvovirus B19 were found to be negative. Flow cytometric test for PNH clone revealed normal results. A computerized tomography scan of the thorax and abdomen was normal. He was diagnosed as having AATP. He was initially treated with prednisolone 1 mg/kg/day and platelet transfusions. But

there wasn`t any change in two weeks and prednisolone treatment has stopped. We used oral Cycloporin A (CsA) 5 mg/kg/day and dose was adjusted according to target serum level ranges between 200 and 400 ng/mL. We couldn`t see any improvement and stopped the treatment 45 days later. During the follow-up period hemoglobin levels also decreased to 11g/dl. At that time, antithymocyte globu-lin was administered as 200 mg/day for 5 days. Platelet counts increased up to 40.000/mm3 and a partial remission has been achieved with 20000-25000 /mm3 platelet levels in two months. Hemorrhagic symptoms resolved. Hemoglobin levels increased up to 15g/dl during the fol-low-up period and he didn`t need any platelet transfusion support. This clinical response supports the concept that acquired amegakaryocytic thrombocytopenic purpura might be an immune-mediated disorder. We conclude that ATG may be useful in the management of patients with this rare and often fatal disease. The mechanism for improved megakaryocytopoiesis after treatment remains to be explained.

Abstract: 625 Poster: 532

ETIOLOGY OF THROMBOCYTOSIS IN A NEONATAL INTENSIVE CARE UNIT

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Background: In childhood, thrombocytosis is accepted as a part of acute phase reaction. Although it was more common in newborns than in childhood, a few studies exist about neonatal thrombocytosis. Aims: We aimed to investigate etiologic factors and clinical course of newborns with thrombocytosis followed in our neonatal intensive care unit (NICU). Method: We retrospectively evaluated medical charts and laboratory results of neonates who were hospitalized in NICU with a platelet count over 450x109/L. Results: There were 89 neonates with thrombocytosis (gestational age 27-41 weeks) and forty-six of them were premature (51.7%). Mean platelet count was 579±111x109/L (range 451-936). They were hospitalized 25.2±27 days (1-150). Infection was the most common underlying disorder (n=32; 36%) and sepsis (42.4% of the infections) was the most common cause in our patients. Cardiac disorders (n=13; 14.6%) were in the second place. Thrombocytosis was resolved within 4 to 35 (10.7±7.2) days in 27 newborns who had a systematic follow-up. No complication related to thrombocytosis was observed. Conclusion: Etiologic factors of neonatal thrombocytosis are different than those observed in childhood thrombocytosis. Similar to childhood thrombocytosis, neonatal thrombocytosis was usually secondary to an underlying and/or predisposing disorder, and resolved with no complication.

Abstract: 626 Poster: 533

BERNARD-SOULIER SYNDROME IN MIDDLE ANATOLIA REGION OF TURKEY

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Bernard-Soulier syndrome (BSS) is an autosomal recessive disorder characterised by moderate to severe thrombocytopenia, enlarged (giant) platelets, and a tendency to have perfuse and often spontaneous bleeding. Abnormalities of the GPIb-IX-V complex are associated with abnormal platelet function and appearance, giving rise to a syndrome first described by Bernard and Soulier in 1948. BSS platelets aggregate normally in respons to ADP and collagen but do not aggregate when platelet rich plasma is stirred with ristocetin or botrocetin. BSS was diagnosed in patients with bleeding manifestations accompanied by thrombocytopenia, normal platelet aggregation secondary to ADP, epineprine, collagen, and arachidonic acid and absent/reduced platelet aggregation secondary to ristocetin. In this study, the expression of GPIb-IX-V on the platelet surface was assessed in eight patients from six families with BSS and their families by flow cytometry. Flow cytometry revealed variable GPIb-IX-V expression by CD61 and CD42a in patients with BSS on the basis of CD42a levels, eight patients had absent GPIb-IX-V. Six mothers, six fathers, and seven siblings were also studied. Two of six families have more than one children with BSS. This condition demonstrated that these parents were carrier status in BSS. No mothers, fathers, and siblings were found to have GPIb-IX-V levels reduced of normal. On the light of this knowledge, we thougt that BSS is relatively common disease in Middle Anatolia Region of Turkey because of consanguinity marriage. Flow cytometric

estimation of GPIb-IX-V in parents and siblings could not be detect carrier status in BSS.

Abstract: 627 Poster: 534

TYPES OF GLANZMANN THROMBASTHENIA IN MIDDLE ANATOLIA REGION OF TURKEY

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Glanzmann Thrombasthenia (GT) is an autosomal-recessive inherited qualitative platelet disorder characterized by absent/reduced platelet glycoprotein GPIIb or GPIIIa. On the basic of levels of GPIIb/GPIIIa as detected by CD61, GT has been subclassified into types I, II, and III. Patients with less than 5% of normal GPIIb/GPIIIa are classified as type I, and 5% to 20% as type II. Type III variants usually have dysfunctional receptors with near-nor-mal GPIIb/GPIIIa levels. Variability exists in the subtypes found in various ethnic groups. Type I GT is relatively frequent in Iraqi-Jews, Araps residing in Israel and in North Indians, whereas Type II GT is more often found in the Japanese population. The types of GT found in Turkey (Middle Anatolia Region) has not yet been studied. In this study, the expression of GPIIb/IIIa on the platelet surface was assessed in 12 patients from nine families with GT and their families by flow cytometry to determine the common subtype in Middle Anatolia Region of Turkey. GT was diagnosed in patients with bleeding manifestations accompanied by absent/reduced platelet aggregation, secondary to ADP, epineprine, collagen, and arachidonic acid. Flow cytometry revealed variable GPIIb/IIIa expression by CD61 and CD41a in patients with GT on the basis of CD61 levels, 10 patients (83%) were subtyped as type I because they had absent GPIIb/IIIa and two patients (17%) were diagnosed as type III, because their GPIIb/IIIa levels varied from 96% to 98%. Eight mothers, seven fathers, and nine siblings were also studied. Two of nine families have more than one children with GT. This condition demonstrated that these parents were carrier status in GT. These two families have children with type II GT. No mothers, fathers, and siblings were found to have GPIIb/IIIa levels reduced of normal. On the light of this knowledge, we thougt that GT is relatively common disease in Middle Anatolia Region of Turkey because of consanguinity marriage. Flow cytometric estimation of GPIIb/IIIa in parents and siblings could not be detect carrier status in GT.

Abstract: 628 Poster: 535

COMPARISON OF ACTIVATED PLATELETS WITH PLATELET-DERIVED MICROPARTICLES IN PROCOAGULANT ACTIVITY

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A number of recent studies focused on the role of platelet-derived microparticles (PMPs) in thrombosis and hemostasis. As PMPs are known to have procoagulant properties, their concentration increase observed in many disorders may significantly contribute in the development of thrombotic complications. However, the procoagulant activity of PMPs was usually studied in reconstituted systems, where conditions were different from those in plasma or blood. In addition, some works reported that PMPs stimulated the anticoagulant reactions as well. Thus, the overall effect of PMPs under in vivo conditions remains unclear. In our study we compared the procoagulant activity of activated platelets (Pact) and PMPs. For this purposes, we used thrombin generation assay (TG) and an experimental model, which provided spatial clot growth dynamics data in plasma under conditions close to in vivo clotting. The spatial clot growth rate (Vclot) and TG were measured in plasma depleted of phospholipid surfaces by ultracentrifugation to a maximally possible extent. This plasma was supplemented with platelets (or Pact) and PMPs at different concentrations. Coagulation was initiated via extrinsic pathway. Annexin V and factor X binding and expression of platelet markers CD61 and CD62P were measured by flow cytometry. The surface densities for all markers under study and factor X were higher for PMPs than for activated platelets. Pact and PMPs induced a dose-dependent Vclot and TG parameters (endogenous thrombin potential and maximum of thrombin concentration) increase and TG lag-time decrease until saturation was reached. The saturation values of Vclot and TG parameters for Pact and PMPs were similar. In the tests used, the procoagulant activity of one activated platelet was roughly equal to that of one PMP, whose surface area is at least two orders of magnitude smaller. Hence, if procoagulant activity is expressed per surface area, PMPs are about 100

times more active than platelets. This work was partially supported by the Russian Foundation for Basic Research, project no. 03-04-48338.

Abstract: 629 Poster: 536

LONG TERM OBSERVATION 168 PATIENTS WITH IDIOPATHIC THROMBOCYTOPENIC PURPURA

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In this retrospective study, we evaluated the clinical features and the effects of various treatment modalities on the clinical course in patients diagnosed with idiopathic thrombocytopenic purpura (ITP) at our center between 1994-2005. We retrospectively investigated the medical records of 168 (115 females, 53 males). Thirty-eight (22.6%) patients were lost to follow-up. When evaluating the clinical features, all 168 patients were included; however, when the response to treatment modalities was evaluated only 130 patients followed up regularly were considered. The median age of the patients on initial diagnosis was 33 years (range: 15-91). At initial diagnosis, 139 (82.7%) patients had signs of bleeding. Signs of bleeding were seen in 88% of the patients with a platelet count <50,000/mm3 and in 24% of the patients with a platelet count >50,000/ mm3 ($p<0.001$). The median follow-up of 130 patients followed up regularly was 27 months (range: 3-132). 123(73.2) of these subjects had an indication for treatment were administered either standard or high-dose steroids as the first-line therapy. Complete remission (CR) was defined as any platelet count >150000/mm3 lasting for 4 weeks or longer without treatment. CR was achieved in 56% of the patients given steroids as the initial therapy. During a median follow-up of 16 months, relapse occurred in 51,5% of these patients, and after a median follow-up of 5 months the rest of them were still in remission. 61 patients followed up regularly were administered second-line therapies. CR was obtained in 45.8% of the patients who used steroids as second-line therapy. Within a median follow-up of 7 months, 27.2% of these patients relapsed. Splenectomy was performed in 26 patients and CR was obtained in 72% of the regularly followed up 25 patients. Relapse occurred within a median of 44 months in 16.6 % of the patients who had CR. Kaplan-Meier curves showed that the duration of CR obtained by splenectomy was significantly higher than that obtained by steroids ($p<0.001$). The 10-year disease-free survivals in patients who used steroids and who underwent splenectomy were, respectively, 15% and 61.6%. In our adult ITP patients, steroids induced nearly similar rates of CR both as first- and second-line therapies. Splenectomy seems to be effective in patients unresponsive to steroids. The duration of CR obtained by splenectomy is significantly longer when compared with the duration of CR obtained by steroid therapy.

Abstract: 630 Poster: 537

THROMBOTIC COMPLICATIONS IN HIV PATIENTS: AN EVIDENCE OF NON PLATELET PATHOLOGY

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BACKGROUND: Thrombosis and thrombotic complications possibly due to coagulation activation have been indicated as one of major causes of death in advanced form of HIV infection. Despite much epidemiological studies on HIV in this part of the world, there is paucity of literature highlighting the platelet functions in these patients. AIM: We therefore investigated a possible contribution of platelets to these reported complications. METHODS: Fifty HIV seropositive individuals were investigated together with 50 apparently healthy seronegative individuals for platelet function studies which includes Platelet count (PLC), platelet factor 3 availability (PF-3), collagen and Thrombin induced aggregations and CD4 cell count using standard methodologies. RESULTS: There were statistical significant decreases in PLC, PF-3 coupled with that of CD4 cell count ($P<0.05$ respectively), while both collagen and thrombin induced aggregation studies show no statistical significant difference when compared with the controls. PLC was positively correlated with PF-3 and CD4 ($r=0.69$, $r=0.73$ respectively). CONCLUSION: We hereby conclude that progressive Thrombocytopenia coupled with relative decrease in PF-3 and CD4 count could be direct effects of HIV infection at an early stage, while the platelet function remains intact. Thrombotic complications associated with advanced HIV infection may not therefore be due to platelet pathology. Further studies on advanced stage of the HIV infection to clarify the mechanism of a possible bleeding tendency is hereby suggested.

Abstract: 631 Poster: 538

VACCINOASSOCIATED ACUTE THROMBOCYTOPENIC PURPURA IN CHILDREN

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We observed 96 children aged 1-15 with ITP, associated with vaccination, in the period of possible postvaccinal complications. ITP developed: in 25 children after rubella vaccination on the 15-th day (in the average), in 17 children after DTP-vaccination on the 14-th day; in 16 children after influenza vaccination on the 12-th day; in 12 children after measles vaccination on the 10-th day; in 10 children - after hepatitis B vaccination on the 17-th day; in 9 children after poliomyelitis vaccination on the 11-th day; in 5 children after mumps vaccination and in 2 children after BCG revaccination on the 9-th day. The ITP in all patients was characterized with skin bleeds. Besides at 60 % of the patients the various bleedings (epistaxis, mouth bleedings, hematuria, menorrhagia) were marked. At 88 % of children there was revealed the deep thrombocytopenia (10 x 10(9)/l). The most hard ITP was marked after hepatitis B and influenza vaccination. At these patients in 90 % and 75 % of cases, accordingly, there were marked various bleedings. At the majority of the patients (73 %) were revealed high level of antiplatelet antibodies. There was investigated a condition of general immunity in all patients, that marked on changes, characterized for infectious and autoimmune mechanisms. There also was researched the specific immunity in the majority of patients, that revealed higher level of antibodies to vaccinassociated infections, which required the exact connection of ITP and vaccination. 55 patients received corticosteroid therapy and 35 - symptomatic therapy. 6 children received IVIG. Among children received corticosteroid therapy complete recovery has come at 84 % of the patients. Among children received symptomatic therapy the recovery has come at 45 % of children. The efficiency of therapy IVIG was 66,7 %.

Abstract: 632 Poster: 539

INVOLVEMENT OF GIT IN PURPURA HOENOCH SCHOENLEIN

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Purpura Hoenoch Schoenlein is hypersensitivity vasculitis which often involves the musculoskeletal system, GIT and kidneys, rarely CNS, lungs, scrotum,pancreas etc. The most common abdominal finding is gastrointestinal colic, frequently associated with nausea, vomiting and gastrointestinal bleeding. These findings may precede the skin rush and may lead to unnecessary laparotomy. Intussusception occurs in up to 5% of cases. We analyzed 46 children with PHS treated in our department during a four years period. GIT was involved in 46% of cases (20 children).All of them were followed by echosonography. In 25% of them the gastrointestinal colic was very intensive and was associated with nausea, vomiting and massive gastrointestinal bleeding. In those cases we consult a surgeon and we used corticosteroids which decreased the symptoms. In 65% abdominal colic was associated with occult gastrointestinal bleeding, without nausea and vomiting. Serious complications, like bowel intussusceptions or perforation were not registered. Conclusion: Involvement of GIT in PHS is very common. Fortunately in several cases abdominal colic was intensive, associated with GI bleeding. In those cases we must think about serious complications like intussusceptions. Echosonography is a standard method for diagnostic and following GI involvement in children with PHS.

Abstract: 633 Poster: 540

FRANK GASTROINTESTINAL BLEEDING IN HEMATOLOGIC NEOPLASMS

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Patients with acute leukemia (AL) suffer from various hemorrhages, most frequently due to thrombocytopenia. We could not reach any information regarding the frequency of gastrointes-

tinal bleeding in AL and decided to search this complication in patients with acute leukemias, chronic lymphocytic leukemia (CLL) and myeloproliferative disorders (MPD), retrospectively. Stem cell transplantation patients were not evaluated. Hematochezia episodes due to hemorrhoids also were not taken into consideration, because such cases might be not recorded in detail. During a 6 years` period, 291 patients with AL, 48 patients with CLL and 108 patients with MPD had been followed. Thirty-two cases of overt gastrointestinal haemorhage episodes (25 upper, 7 lower) were observed during the mentioned period. The frequency of bleeding episodes were 7.1% (32/451) in hematologic malignancies as a whole, 5.8% (17/291) for AL, 2% (1/48) for CL, and 13% (14/108) for MPD. If the patients with MPD in blastic phase were analysed seperately, the ratio was 30% (6/20). Esophagogastroduodenoscopy, which could be performed in 8 of 25 upper gastrointestinal hemorrhage episodes, revealed erosive gastritis in 5 patients, duodenal ulcers in 3 patients. Neutropenic enterocolitis was the underlying cause in all of the 7 patients with lower gastrointestinal hemorhage. Five out of the 7 patients had AL. In 7 bleeding attacks, out of 32, the ultimate result was death. Generally, the hemorrhage was only a contributing cause of mortality. All of the mortality cases were patients with acute leukemia. Especially the patients with MPD are prone to develop gastrointestinal hemorrhage. The manifestation is generally as upper gastrointestinal bleeding due to gastric erosions and duodenal ulcers. Lower gastrointestinal bleeding is frequently a problem of the patients with AL. It is commonly a sign of neutropenic enterocolitis.

Abstract: 634 Poster: 541

EFFECT OF SEX DIFFERENCE ON PLATELET AGGREGATION USING OPTICAL METHOD IN HEALTHY SUBJECTS

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There are many studies reporting conflicting results of sex differences on various platelet functions. The purpose of this study is to investigate whether sex differences could affect platelet aggregation results using optical method in healthy subjects. A total of 42 subjects, 21 males and 21 females, were included in the study. Platelet aggregation was induced by adenosin diphosphate (ADP) (5 micromole), collagen (0,2 mg/ml), and epinephrine (10 micromole). The analyses were performed by using a Whole Blood Lumi-Aggregometer. In all platelet aggregation tests ADP, collagen and epinephrine were studied, there was no significant difference between females and males in platelet aggregation amplitudes and slopes. As a result, sex difference does not affect platelet aggregation performed with optical method in healthy subjects. This result supports that there is no need for sex differentiation while composing control group in platelet aggregation studies using optical method.

Abstract: 635 Poster: 542

LATE SAPHENOUS VEIN GRAFT OCCLUSION IN PATIENTS WITH CORONARY BYPASS: POSSIBLE ROLE OF ASPIRIN RESISTANCE

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BACKGROUND: Late venous graft thrombosis, leading to recurrent ischemia, is frequently encountered in old, degenerated vein grafts with advanced atherosclerotic plaque formation. Aspirin has been indicated to maintain venous graft patency in the post-operative period. However, there is considerable evidence that aspirin resistance is of concern in patients with venous grafts. MATERIAL AND METHOD: Prospectively enrolled 14 patients (11 male, 3 female, Group 1), who were shown to have at least one occluded saphenous vein graft on their late control coronary angiogram after bypass operation, were compared for the presence of aspirin resistance by PFA-100 with age- and sex-matched 14 patients (10 male, 4 female, Group 2), who were found patent and well-functioning vein grafts without wall irregularities on late post-operative coronary angiograms (mean 6.5+/-2.5 years), enrolled as a control group. RESULTS: Mean CT of collagen/epinephrine cartridge in Group 1 was 197+/-85 s and significantly less than in Group 2 (279+/-44 s; p=0.011). It was found that 50% of patients in Group 1 were so-called aspirin resistant, whereas in Group 2, this ratio was 7.1% (p=0.033). BMI (p=0.038, Beta=-0.322), uric acid level (p=0.023, Beta=-0.355), and CT by col-lagen/epinephrine cartridge (p=0.008, Beta=0.431) were independ-

ently predicting late occlusion of saphenous vein graft. CONCLUSION: Aspirin resistance is highly prevalent in patients with occluded venous grafts at a relatively late period.

Abstract: 636 Poster: 543

AN EXTREMLY UNCOMMON COMPLICATION OF ITP: SPONTANEOUS RUPTURE OF AN OVARIAN FOLLICLE CYST AND MASSIVE INTRAABDOMINAL BLEEDING

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Idiopathic thrombocytopenic purpura (ITP) is a disease in benign nature and commonly seen in childhood. Disease is limited to minimal bleeding symptoms such as petechia, purpura, epistaxis in majority of the patients and it often resolves spontaneously within a few weeks or months. Few patients may develop intracranial or gastrointestinal hemorrhage at any time in ongoing ITP. In this case report we present an ITP patient who had an ovarian follicle cyst rupture and massive intraabdominal bleeding. A 17-years-old female patient was admitted to the hospital with the complaints of abdominal pain, pallor, and fatigue. In the past history she was diagnosed as ITP four months ago and had received steroid therapy. She had widespread abdominal pain for one day and she had no accompaying diarrhea, constipation or dysuria. On physical examination, blood pressure was measured 100/80 mmHg, and heart rate was 132/min. The complete blood count revealed Hb:9.6 g/dl, Htc 27.1%, MCV: 91fL, MCH:32.4 pg, white blood cell count: 4000/mm^3, and platelet count: 3000/mm^3. On peripheral blood smear, platelets were very few and larger than normal. Abdominal ultrasonography and abdominal contrasted computed tomography showed widespread free fluid in perihepatic, perisplenic, and pelvic regions. In the right ovary, a large haemorrhagic follicle cyst was observed. Left ovary and other intraabdominal structures were normal. High dose methylprednisolone, intravenous immunoglobin and platelet transfusion were given to the patient because of severe bleeding. On the follow up, the hemoglobin level decreased to 5.6 g/dl and erythrocyte suspension had to be transfused. The abdominal pain gradually decreased and bleeding stopped. Her platelet count increased to >150.000 /mm^3 with therapy, but after cessation of therapy it decreased to 5000/mm^3. Since she had substantial and life threating bleeding episodes and recurrent severe thrombocytopenia, splenectomy was performed. Platelet count increased to 156.000 /mm^3 postoperatively. Thrombocytopenia reoccurred on the 45th day of splenectomy and oral steroid therapy was started. The response was satisfactory and the steroid dose was gradually decreased and stopped in the eighth month. Patient is still in complete remission for six months.

Abstract: 637 Poster: 544

THE EFFECT OF PREECLAMPSIA ON COMPLETE BLOOD COUNT, PLATELET COUNT AND MEAN PLATELET VOLUME

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Preeclampsia is a condition observed during pregnancy and threatens the life of both mother and fetus. There are studies which suggest platelets play a major role in the pathogenesis of preeclampsia. The aim of this study is the compare the complete blood count parameters especially platelet count and mean platelet volume in preeclamptic and normal pregnant women and to evaluate whether these parameters have a prognostic significance in determining the severity of eclampsia. The study and control groups consist of 56 preeclamptic and 43 normal pregnant women, respectively. There was no statistically significant difference according to complete blood count, platelet count and mean platelet volumes when preeclamptic and severely eclamptic patients compared with controls. As a result, we observed no prognostic significance of complete blood count, platelet count and mean platelet volume on the presence and/or severity of preeclamptic condition. There are conflicting results especially on the significance of mean platelet volume in the literature, and possibly this confliction is due to difference between methods and/or equipments used for automated blood count.

Abstract: 638 Poster: 545

RELATIONSHIP BETWEEN PLATELET INDICES AND PLATELET AGGREGATION RESPONSES USING OPTICAL METHOD IN HEALTHY INDIVIDUALS

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Recent advances in technology have made it possible to record various platelet indices. There have been many reports about platelet indices and platelet disorders. The aim of this study is to investigate whether platelet indices have a correlation with platelet aggregation responses using optical method in healthy adults and to evaluate the predictive significance of platelet indices over platelet aggregation responses. This study was carried on 31 healthy adults whose ages ranging between 20 and 42. Platelet parameters, including platelet count, mean platelet volume, platelet distribution width and platelet-crit were determined in platelet rich plasma using Abbott Cell-Dyn 4.000. Platelet aggregation was induced by adenosin diphosphate (5 micromole), collagen (0,2 mg/ ml), and epinephrine (10 micromole). The analyses were performed by using a Whole Blood Lumi-Aggregometer. We have observed no correlation between any of platelet indices measured and platelet aggregation responses. As a result, we could not establish any relation between platelet aggregation responses obtained with optical method and platelet indices proposed as an indicator in certain pathologic conditions, and it does not seem possible to use platelet indices as a direct indicator of platelet activation. In conditions where platelet functions should have been assessed, platelet indices alone are inappropriate and further evaluation is necessary with different methods.

Abstract: 639 Poster: 546

IMMUNE THROMBOCYTOPENIC PURPURA: A RETROSPECTIVE ANALYSIS IN 108 PATIENTS AT KOCAELI UNIVERSITY HOSPITAL

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A hundred eight patients (29.6 % men, 70.4% women and mean age 40.86 ± 16.55 years) with immune thrombocytopenic purpura (ITP) who were accepted to Kocaeli University Haematology Department between January 1996 - December 2004 were studied retrospectively. The laboratory characteristic of patients are shown in Table 1. Petechia and ecchimoses was detected in 36.1%, gastrointestinal bleeding in 7.4%, hematuria in 3.7% and gum bleeding in 21.3% of the patients of first visit. 52.8% of the patients are followed without treatment. 47.2% of the patients are taking medications. Therapy of the patients were started with corticosteroids and/or intravenous immunglobulin (IVIG) first then according to clinical and laboratory parameters, therapy were arranged. Mean duration of corticosteroid usage was 141 ± 19.95 days. Side effects of corticosteroids in our patients were weakness (12%), elevated plazma glukose levels (1.9%) and gastrointestinal-bleeding (0.9%). In patients who were not respond to corticosteroid therapy splenectomy was performed (23.1%). Patients were used cyclophosphamide (5.6 %), vincristin (6.5 %), IVIG (9.3%), cyclosporin A (3.7%) alone or in combination. Mean platelet count of the patients og 6th month of the therapy was 125512 ± 9900 / mm3. In 66% of the treated patients platelet count were than 100000 / mm3, in 32% of them were than 50000 / mm3 and in 2% of the patients platelet counts was less than 30000 / mm3 inspite of all treatment attempt.

Abstract: 640 Poster: 547

RESISTANCE TO ASPIRIN CHECKED WITH TWO SPECIFIC METHODS

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Introduction: It seems that aspirin resistance is not a so rare phenomenon as it is believed. It`s presence is often associated with recurrent ischaemic stroke or exacerbation of angina pectoris. Aiming to reveal or detect its presence in patients receiving antiplatelet medications, we applied two dif-

ferent and specific techniques. Material: We studied 29 normal persons (14 males and 15 females with mean age of 42±12 yrs), and 49 persons taking Aspirin (24 males and 25 females with mean age of 39±15yrs). We also studied 8 persons taking Clopidogrel (6 males and 2 females with mean age of 41±8 yrs) Methods: We applied Platelet aggregation (P.I.C.A-aggregometer, Chronolog-Co), using ADP and collagen as agonists and PFA-100 (DADE-Behring) with the reagents Collagen/ADP and Collagen/ Epinephrine. For these two methods applied, we estimated the reproducibility by measuring 15 times on the same sample the aggregation with ADP (CV=1.3%) and Collagen (CV=2.8%)respectively. As regards PFA-100, we checked the same sample 20 times which resulted to a CV of 4.2% and 8.6% for Colla/ADP and Colla/Epi respectively. Results: Findings from the normal persons group: Mean values for the PFA-100 results had as: Colla/ADP=86.65±15.94sec and Colla/Epi=105.91±15.83sec. Mean values for the aggregation results had as:ADP=70.34±10.63% and Collagen=69.29±9.42%. Adding 3 Standard Deviations, we applied strict limits (confidence limits 99%) in order to establish the cut-off value for PFA-100 Closure Time. Cut-off value was 134.48sec and 153.04sec for Colla/ADP and Colla/Epi respectively. For ADP-induced aggregation and for Collagen-induced aggregation the above values were 49.08% and 41.04% respectively. Conclusion: Based on the reported values, 13 out of 49 persons (25.5%) tested with aggregation, and 20 out of 49 (40.8%) tested with PFA-100, met our criteria for ¨ASA-non responders¨ definition. The above difference between the two methods applied, was not considered to be statistically significant, as confirmed with the chi square test ($x2 = 1.89$, $p<0.1$) application. As a conclusion and based on our findings, we assume that PFA-100 is a confident method, having the ability to reveal Aspirin resistance, while Platelet aggregation induced by ADP and Collagen appears to be only slightly less sensitive. However, the value and the place of platelet aggregation in the monitoring of patients taking clopidogrel remains constant, as it reveals 1 non-responder for every 8 patients taking this medication. PFA-100 in not of the same sensitivity, because only 1 in 8 patients hardly touched the defined response levels. PFA-100 remained completely insensitive for the other 7 patients tested, mimicking results from patients not taking clopidogrel at all.

Abstract: 641 Poster: 548

ONE OF THE RARE CAUSES OF THROMBOCYTOPENIA: A CASE OF GAUCHER DISEASE

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Beside immunologic and non-immunologic reasons, various diseases infiltrating bone marrow may play a role in etiology of thrombocytopenia. Bone marrow infiltration may develop due to hematological malignancies, metastasis of tumors and rarely due to metabolic diseases as in storage diseases. These affect production of platelets and may lead to thrombocytopenia. Our case was a 34 years old female patient, applied to hospital with prevalent bone pain, found to have thrombocytopenia and consulted to hematology clinic. Only pathological laboratory finding was the number of platelets as 110.000 / µl. Furthermore, no organomegaly was found with ultrasound evaluation. With bone marrow aspiration, bone marrow was seen as infiltrated with gaucher cells. Further evaluation was planned assuming that Decreased platelet production in bone marrow is a result of a lipid storage disease. But further evaluations did not reveal any pathology compatible with gaucher disease. Gaucher disease is an autosomal recessive disorder resulting in accumulation of glucocerebrosides in reticuloendothelial system cells due to a defect in glucocerebrosidase enzyme activity. Organ involvements may lead to various clinic symptoms. Liver and spleen involvement may cause Hepatosplenomegaly, bone involvement may cause osteoporosis and pathologic fractures, marrow involvement may cause anemia and thrombocytopenia, and accumulation of glucocerebroside in central nervous system may cause abnormal neurological diseases. Beside clinic and x-ray findings, definite diagnosis of Gaucher disease is possible with showing accumulation of glucocerebroside in liver biopsy, presence of typical gaucher cells and low enzyme levels. There are many Gaucher disease cases in literature. Usually organomegaly and hematological problems coexist but there are also cases having no pathological findings other than thrombocytopenia. Although it is rare in our country, we wanted to take attention to possibility of metabolic diseases infiltrating bone marrow but having platelet count at normal limits.

Abstract: 642 Poster: 549

PSEUDOTHROMBOCYTOPENIA AND THROMBOCYTENEUTROPHIL AGGLUTINATION: POSSIBLE ASSOCIATION WITH MIGRAINE THERAPY

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Aggregation of neutrophils in peripheral blood smears is very rare, and it may result in pseudoleukopenia. The most common causes of this phenomenon are malignancies, hepatic disorder, or infections. It has been described that ethylenediaminetetraacetate acid (EDTA) might contribute to neutrophil aggregation. Pseudothrombocytopenia is secondary to platelet clumping induced by antibodies in the presence of EDTA and has been associated with sepsis, cancer, cardiac surgery and drugs. There is an pseudothrombocytopenia incidence of 0.09 % to 0.21 % in the hospitalized patients. It has been reported that there was an evidence for different pathogenetic mechanism in occurance of neutrophil aggregation and pseudothrombocytopenia. Literature knowledge about the association of pseudothrombocytopenia and pseudoleukopenia is limited. Here, we report a case with pseudothrombocytopenia and thrombocyte-neutrophil agglutination who was taking the pills for the migraine therapy. Whole blood anticoagulated with K3EDTA and sodium citrate was analysed at one hour intervals up to 4 h from sampling at room temperature. While the initial leukocyte and thrombocyte counts were in a normal range, a phenomenon of platelet clumping (pseudothrombocytopenia) and plate-let-neutrophil agglutination occured with the EDTA at 1 h after the first analysis. Beside the platelet clumping, aggregates consisting of 80-100 neutrophils were seen on the blood smear. A reduction of leukocyte count of 50 % the initial was observed after 4 h. Mixing serum of the patient with matched whole blood from a normal donor in the presence of different anticoagulants (EDTA or sodium sitrate) revealed a platelet-neutrophil agglutination in the presence of only EDTA. Pseudothrombocytopenia without significant pseudoleukopenia occured at 1h after beginning the test. There were no remarkable findings related with an inflammatory response, infections, and/or systemic diseases. The patient has been taking zolmitriptan and amitriptyline to treat her migraine. Here, we raise the possibility that the coexistance of these conditions can be explained by EDTA-dependent platelet-neutrophil agglutination. We suggest causal association (related with a factor found in patient`s serum) of two different phenomena. Although it is not possible to make a clear cut conclusion, the routine use of zolmitriptan and amitriptyline for the treatment of migraine might be thought to be leading the pseudothrombocytopenia and thrombocyte-neutrophil agglutination.

Abstract: 643 Poster: 550

PLATELET GLUE

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Fibrin Glue is used widely. It is usually provided by commercial preperation. It contains bowin trombin. It is small amount and expensive. Some method is also described for home made. Platelet glue is an alternative-ness to Fibrin Glue. It can be produced easily in any blood banks. Method is briefly as follows: One unit of apheresis or rondom platelet is centrifuged at 1000 rpm for 10 minute. Supernatant plasma is extracted. Remaining platalet pellet is withdrawn to syringe. Then, it is mixed with 1/10 CaCl2 or Ca gluconate and waited for coagulation. Now it is ready to use. Platelet glue has some adventages. It releases platelet derived growth factors effecting wound healing. Amount is sufficient to application great area. Present platelet suspensions in blood bank can be used for production. It can be prepared as both autologus and allogeneic product.

Abstract: 644 Poster: 551

PLATELET AGGREGATION IN CHILDREN WITH DOWN`S SYNDROME

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Down`s syndrome is a best recognized and most frequent human chromosomal abnormality. But there have been found a few studies about the platelet aggregation with some aggregant reagents in children with Down`s syndrome in the

literature. In this study, we examined the platelet aggregation with epinephrine, collagen, ristocetin and ADP in children with Down`s syndrome by using a whole blood lumi-aggregometer. This is the first aggregation study which was revealed the responses to four agonists in Down`s syndrome. Platelet aggregation was investigated in 20 children aged 3-72 months with Down`s syndrome and compared to 20 healthy children aged 3-120 months. The in vivo bleeding time was measured by Ivy method. Platelet aggregations with collagen were found to be decreased in the study group ($p<0.05$). No difference was observed on the platelet aggregation with ADP, epinephrine and ristocetin in both groups. Bleeding time was observed to be longer in the study group compared to the controls ($p<0,05$), although platelet counts were normal in both groups. We concluded that a certain platelet aggregation defect in laboratory conditions should be considered, although hemorrhagic diathesis did not clinically observed in Down`s syndrome.

Abstract: 645 Poster: 552

IMMUNE THROMBOCYTOPENIC PURPURA WITH ONYALAI: A CASE REPORT

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Onyalai is a form of Immune Thrombocytopenic Purpura (ITP) which is characterized clinically by the sudden appearance of haemorrhagic bullae in the buccal cavity and/or skin. It is restricted certain black population groups in Southern Africa. Mortality rate is high because of haemorrhagic shock or central nervous system bleeding in the acute phase. The aetiology is unknown.It is commonly thought that the hapten role of toxins causes thrombocytopenia.A girl with ITP admitted to hospital epistaxis, fever and haemorrhagic and infected bullae in the buccal mucosa, after fifth month from first diagnosis.Laboratory findings showed anemia (Hb:10,9 mg/dl), thrombocytopenia (17000 /mm3) and erythrocyte sedimentation rate: 90 mm/h. We treated enfection with cefotaxim 200 mg/kg/day, ornidazol 25 mg/kg/day for 12 days. Intravenous Immunglobuline 1 gr/kg/day for 2 days, 400 mg/kg/day for 5 days were given but platelet count did not increase. 30 mg/kg/day for 3 days, 20 mg/ kg/day for 4 days and 10 mg/kg/day for 7 days methylprednisolone were given and platelet count increased to 115000/mm3 in the 11th day of the treatment. As a result of the thrombocytopenia, in the acute phase of Onyalai mortality and morbidity is high.It is therefore important investigate treatment modalities which may effect a quick rise in the platelet count.

Abstract: 646 Poster: 553

IMMUNE THROMBOCYTOPENIC PURPURA

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Immune thrombocytopenic purpura (ITP) is the most common acquired bleeding disorder occurring in children with an estimated incidence of 4-8 / 100,000 children / year. May follow a viral infection or immunization and is caused by an inappropriate response of the immune system. More than 90% of patients will recover the acute episode in 6 months, while 10-15% will have chronic ITP. With many controversies regard pathogenesis, diagnosis and treatment; the disease is reviewed with reference to those controversies issues.

Abstract: 647 Poster: 554

HEREDITARY QUALITATIVE PLATELETS DISORDERS

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Normal homeostasis has to have normal thrombus formation, fibrinolysis and healing process. For the normal thrombus formation; normal Platelets, Coagulation and Vascular phase need to be. Defect in any of those lead to abnormal homeostasis. Platelets disorders either quantitative and the most common is Immune thrombocytopenic purpura, or qualitative which in turn either secondary to a systemic disease e.g. chronic renal failure or hereditary. Hereditary qualitative platelets disorders involve any part of pathophysiological steps of platelets. Platelets membrane defects like phospholipids disorder as Scott syndrome or glycoprotein defect as Bernard Soulier Syndrome and Glanzmann`s Thrombasthenia. Storage pool de-

fect either due to Deficiency of membrane, content or both. Defect of Thromboxane generation and Defect of signal transduction are due to Enzyme deficiency or non-function, Receptors deficiency or non-func-tion. Hereditary qualitative platelets disorders usually present with bruises, mucus membrane bleeding and rarely with deep bleeding as intracranial hemorrhage. Its variable and life long type of bleeding. Assessment of platelet function usually lead to diagnosis, while specific tests to determine the exact defect need a research lab to be detected. Treatment is both supportive and specific directed therapy. This paper is a review on hereditary qualitative Platelets disorders, pathophysiology, diagnosis and treatment.

Abstract: 648 Poster: 555

GLANZMANN THROMBASTHENIA

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Glanzmann thrombasthenia (GT) is an inherited bleeding disorder, first described by Dr. Edward Glanzmann in 1918. Otterhounds dogs with thrombasthenia described in the 1960s. The occurrence of hemorrhagic episodes during infancy and early childhood usually leads to diagnosis before the age of 5 years; however, symptoms typically diminish as affected individuals approach adulthood. Usually they present with epistaxis bruising, gum bleeding and other mucocutaneous hemorrhage. The severity of bleeding associated with GT is unpredictable. Laboratory findings revealed normal platelet numbers but lack of platelet aggregation in response to all agonists and severely impaired clot retraction. Defect in GT involves the platelet glycoprotein complex IIb-IIIa, also known as integrin IIb 3 (CD41/CD61). IIbß3 is an abundant and functionally significant integrin expressed on platelets, binds fibrinogen with highest affinity but also binds other Arginine-Glycine-Aspartic acid (RGD)-containing molecules such as fibronectin, von Willebrand factor. Required for platelet aggregation and platelet transmembrane signaling. Platelets possess 40,000 to 80,000 molecules of IIbß3 per cell Type I GT, the most common type is characterized by severe deficiency (<5% of IIbß3) while Type II GT represents 14% of the reported cases with mild deficiency (10 to 20% of IIbß3). Variant GT represents 8% of reported cases, Platelets of these individuals possess 50 to 100% of the normal quantity of IIbß3 but demonstrate absent or minimal fibrinogen binding and aggregation. The first genetic mutation causing GT in humans was described in 1990. Fifty-nine different molecular defects resulting in GT have been identified. Including gene rearrangements or deletions, messenger RNA splicing abnormalities, frameshifts, nonsense mutations, and missense mutations. All of these mutations have quantitative and/or qualitative effects on the IIb 3. The genes for glycoprotein IIb and IIIa are on chromosome 17. Platelet transfusions can be used in cases of serious bleeding. However, antibodies against platelets can develop as a result of such transfusions. Bone marrow transplantation is the only curative form of treatment. While gene therapy is promising.

Abstract: 649 Poster: 556

A PATIENT WITH GLANZMANN THROMBASTHENIA SUCCESSFULLY OPERATED FOR NASAL DEFORMATION WITH RECOMBINANT FACTOR V11A.

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Glanzmann thrombasthenia is an autosomal recessive disorder of platelet aggregation that is characterized by a lifelong bleeding tendency due to quantitative and qualitative abnormalities of the platelet membrane complex glycoprotein IIb/IIIa (Gp IIb/IIIa). Platelet transfusion is the standard treatment for severe bleeding and surgical support is necessary in these patients. However, repeated platelet transfusions can result in alloimmunization, which makes subsequent transfusions ineffective. Recombinant activated factor VIIa (rFVIIa) has recently been introduced as an alternative to platelet transfusion for treating bleeding episodes and to cover surgery in patients with hereditary platelet function defects. This approach prevents patients from developing platelet alloantibodies. We report a 8- year-old child with Glanzmann thrombasthenia. The patient had been treated by nasal tampon placement because of epistaxis three years ago in another hospital. We detected perforation of nasal septum and deformation of nasal bone due to granulation tissue induced by forgotten nasal tampon. Forgotten tampon was removed and granulation tissue was resected. Bolus injections of rFVIIa (90 µg/kg) was given immediately before operation and

three times with 2 hours intervals after the surgery. The patient was discharged from hospital without any bleeding complication or thrombocyte replacement.

Abstract: 650 Poster: 557

THE EFFECTS OF CLOPIDOGREL AND NADROPARINE ON ELEVATED THROMBOLYTIC RISK AND APOPTOTIC PROCESS IN HYPERCHOLESTEROLEMIA

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Background: Clopidogrel (clop.) is a thienopyridine derivative, which selectively and irreversibly inhibits platelet aggregation induced by adenosine diphosphate (ADP). Nadroparine (nad.) is a low molecular weight heparin derived from standard heparin. In many atherosclerotic events, activation of platelets is the major reason of thrombotic risk. Aims: In this study, in vitro effects of clop. and nad. on platelet activation markers, platelet apoptosis and lipid peroxidation were investigated in hypercholesterolemic subjects. Also their effects in combination with synthetic peptide (pep) Gly-Pro-Arg-Pro on platelet activation were determined. Methods: GpIIb/IIIa, p-selectin, fibrinogen and phosphatidylserine (PS) expression, an early apoptotic marker, were measured using flow cytometry. Lipid peroxidation and glutathione levels were determined by spectrophotometric assay. Results: Although significant differences ($p<0.01$) were observed between the levels of p-selectin, fibrinogen, PS expression and lipid peroxidation before and after incubation with clop. in ADP stimulated platelets of hypercholesterolemic subjects, the difference was not significant ($p>0.05$) in the levels of glutathione. However, after and before incubation with nad. in ADP stimulated platelets, p-selectin increased slightly, whereas fibrinogen and PS expressions decreased slightly. Significant differences have been observed in lipid peroxidation ($p<0.05$), but not in glutathione levels. When the platelets incubated with clop. are compared with those incubated with clop.+ pep and when the same comparison is made with those incubated with nad. and nad.+ pep., no significant differences ($p>0.05$) were found. Conclusion: It was concluded that clopidogrel inhibited platelet activation and apoptosis but nadroparine did not have such an effect, however, both of them decreased lipid peroxidation levels in hypercholesterolemia. It seems like that in vitro findings might be helpful in vivo using of these drugs.

Abstract: 651 Poster: 558

PURSUIT OF A CASE OF VON VILLEBRAND DEFICIENCY DURING PREGNANCY AND PUERPERIUM OF A TWENTY-FOUR-YEAR OLD WOMAN

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The case of a twenty-four-year-old woman was studied and diagnosed as Von Villebrand disease. As soon as the patient got pregnant, she was monitored. At her three and six month`s pregnancy she was monitored again. From then on, she was monitored every month until delivery and every seven days during a period of forty five days after childbirth. It consisted in blood testing: red corpuscles count, white corpuscles count, blood platelets count, hemoglobin determination and time Quick. In the second three-month-period pregnancy, at the patient`s gynecologycal and obstetrical routine consultation the corresponding analytical test was required and from that moment on the future risks of a patient with such disease were taken into account. It was decided to correct the laboratory analytical numbers by using desmopresina acetato and anhidrous ferrous succinate. Extrablood replacement was not necessary to keep the blood volume. Reaching the third three-month-period of pregnancy and having been laboratory results already corrected, the delivery was due without any risks for neither fetus nor mother as regards physiological as much as phsychologycal levels, thus achieving a good recovery without any health problems for both mother and baby.

Abstract: 652 Poster: 559

SUBSTANCE ABUSE IN IRANIAN PATIENTS WITH HAEMOPHILIA

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This study explores the prevalence, causes and predisposing factors of addiction in a group of haemophilic patients from Fars province, a state located in south west of Iran. One hundred cases of haemophilia were randomly selected among patients referring to the haemophilic center of Fars province. Data were collected by a questionnaire, which was filled out by patients or their parents. The rate of substance abuse was much higher in haemophilic patients (39%) comparing with normal population of Iran (12.5%) and Fars province (10.2%). Prevalence of addiction among haemophilic patients was directly related to marital status, age, number of family members and being another addict or haemophilic patient in the family. It was higher in single young adults, in patients with crowded families and patients with history of addiction and haemophilia in their family members. Severity of disease and its associated physical problems were not the only factors that move the patients to addiction. The high rate of addiction among Iranian haemophilic patients is expected to be due to stress, pressure of chronic illness, loss of psychiatric support, shortage of treatment facilities and special geographic locality of country. Further investigations are needed to detect the potent risk factors in order to decrease the patients` tendency towards substance abuse.

Abstract: 653 Poster: 560

HOW CAN WE REDUCE RED BLOOD CELL TRANSFUSION NECESSITY IN PATIENTS UNDERGOING CORONARY ARTERY BYPASS SURGERY?

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Volkan Yurtman, MDa*, Sureyya Talay, MDa, Uğur Bilge, MDc, Hakan Gülkesen, MDc, Hanife Kabukçu, MDb, Omer Bayezid, MDa a Department of Cardiovascular Surgery, Akdeniz University Medical Faculty, Antalya, TURKEY b Department of Anesthesiology, Akdeniz University Medical Faculty, Antalya, TURKEY c Department of Biostatistics, Akdeniz University Medical Faculty, Antalya, TURKEY BACKGROND: Guidelines for transfusion practice have had limited impact in altering physician transfusion behavior in patients undergoing cardiac operations. This may be due to a lack of consensus on the relative risks and benefits of blood in these patients who are anemic, limited access to timely data that are necessary on which to base transfusion decisions, the recognition that empiric hemoglobin/hematocrit thresholds are limited clinical indicators of the need for blood, or a combination of these. AIMS: The purpose of this study was to avoid of unnecessary allogenic blood transfusion can be achieved by adopting a standardized blood conservation strategy. METHODS: Our study involves a three different strategy. In group A(n=42) we have applied a prophylaxis with Desmopressin Acetate. In group B(n=40) we have applied perisurgical donation of autologous blood for postsurgical retransfusion. In group C(n=40) we have applied both of them. In control group D(n=49) we have not applied any strategy. There was not significant demographic difference between the groups. Predictors of transfusion necessity were determined by multivariate logistic regression and genetic algorithm techniques. RESULTS: The mean units of total packed red blood cells and fresh frozen plasma transfusion in the operation room and ICU for group A was 2.74 ± 1.17; 2.21 ± 1.74, for group B was 2.75 ± 1.10; 2.05 ± 1.28 for group C was 2.08 ± 1.16;1.45 ± 0.95, for group D was 5.24 ± 2.46; 5.06 ± 2.77. Postoperative measuring total mediastinal chest tube drainage for group A was 610 ± 200cc, for group B was 708 ± 378cc, for group C was 546 ± 189cc, for group D was 1053 ± 507cc. In all groups our transfusion strategy did not influence 30th day and 6th month morbidity. CONCLUSIONS: We conclude that RDW/hematocrit ratıo, gender, age, body mass index and cardiopulmonary bypass time are the principal determinants for the quantity of total blood transfusion. The availability of multiple pharmacologic and blood salvage conservation strategies, will decrease the transfusion rate.

Abstract: 654 Poster: 561

EVALUATION AND COST-EFFECTIVENESS ANALYSIS OF PREVENTION PROGRAM OF MAJOR THALASSEMIA IN SISTAN-BALOUCHESTAN AND FARS PROVINCES (IRAN 1998-2002)

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Introdu8ction & goal: While the prevalence of thalassemia gene is 4-8% in Iran, it reaches to 10% in Sistan-Balouchestan and Fars Provinces. Regarding the high prevalence of the disease and different cultural, social, and economic situation in the mentioned provinces, we have attempted to calculate the marginal cost-effectiveness index through a decision analysis approach based upon the best evidences. Materials and Methods: This study is a summative external program evaluation. Designing the decision tree, evaluation indexes including coverage rate, incidence of thalassemia major in a year, effectiveness of premarriage consultation (marriage dissuasion rate after consultation), and marginal cost-effectiveness (spent cost for prevention from birth of a thalassemia major child) were determined. The required data were collected from Health Deputy of the Governor House, Civil Registry Organization, Governor House, and other related centers during a 4 year period from 1998 to 2002. Collected data and costs were placed in the decision tree and analyzed through average folding back method. Results: The coverage rate of the program has been 70.9% in Sistan-Balouchestan in 2000 and increased to 77% in 2002. The average coverage rate has been about 70% in Fars too. The marriage dissuasion rate was 3.5% in carrier couples of Sistan-Balouchestan in 2000 and reached to 0.5% in 2002. It is while; average marriage dissuasion rate was 62.1% in 2000 and 48% in Fars Province in 2002. The incidence rate of major thalassemia was 150 per 100,000 live births in Sistan-Balouchestan in 1999 and increased to 180 per 100,000 live births in 2002. The rate was 72 per 100,000 live births in Fars in 1998 and decreased to 24.8% in 2002. Marginal cost-effectiveness index of the program reveals that prevention from birth of a thalassemia major child costs 310,000,000 Rials in Sistan-Balouchestan and 13,330,000 in Fars. Discussion: Although the thalassem-ia prevention program has been successful over the country, evaluation studies show major differences in the assessed provinces. Despite all activities for prevention from thalassemia and small increases of coverage index of the program in Sistan-Balouchestan in recent years, cost of prevention from birth of a thalassemia major child in this province is 30 times more than Fars. Low marriage dissuasion rate in thalassemia carriers, lack of coverage for couples who had married before 1996, lack of PND test facilities in the assessed period, high total and general fertility rate, high frequency of unregistered tribal marriages, and consultation after marriage are the reasons which result in the current situation in Sistan-Balouchestan Province. It is suggested to consider cultural, social, economic, and geographical characteristics of different provinces and design methods in accordance with the situation of every region.

Abstract: 655 Poster: 562

MOOD CHANGE IN ACUTE LEUKEMIA PATIENTS RECEIVING CHEMOTHERAPY IN TAIWAN

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Chemotherapy is the major treatment for acute leukemia. Profound marrow suppression and pancytopenia frequently develop after chemotherapy in leukemia patients. Effective assessments of symptom distress and severity provide suitable care and reduce the morbidity and mortality. The interaction between physical symptoms and psychosocial distress of leukemia patients receiving chemotherapy were rarely concerned before. We perform a prospective longitudinal study to evaluate the symptom severity and psychosocial distress in leukemia patients in Taiwan. The aim of this study is to investigate the symptom experiences, mood changes and associated clinical characteristic of patients with acute leukemia receiving chemotherapy in Taiwan. National Taiwan University Hospital (NTUH) is the primary and tertiary medical center in north Taiwan. Thirty-four patients with acute leukemia were collected from NTUH between 2004 March and November. We evaluate patients with the Symptoms Severity Scale daily, and Hospital Anxiety and Depression Scale weekly during the 28 days of chemotherapy period. The hemogram and biochemistry data were followed according to clinical condition. Dry mouth is the most common symptom. Fatigue is the most severe symptom. The mean symptom severity score is highly correlated to the leukocyte count, neutrophil count, hemoglobin level and platelet count. The symptom severity varied with time post chemotherapy in total 15 of 34 symptoms ($p<0.05$). We further classify the symptoms to three patterns according to the time and symptom-severity relationship. The first type of symptoms were pain, mucositis, fever and chill. The symptom severity was closely related to neutropenia in 4-week evaluation pe-

riod. The second type symptoms were persistent for the chemotherapy course, including fatigue and dry mouth, and so on. The third type of symptoms were associated with body image. The symptom severity increased since the third week and lasted to the end of study. The anxiety score ranged from 4.32~5.24 (range 1~10), the depression score ranged from 6.26~7.59(range 1~10). The prevalence of anxiety and depression are 5.8~11.7 % and 14.7~29.4 %. The severity variation of anxiety and depression is not statistical significance after chemotherapy. The anxiety and depression are correlated to the mean symptom severity score since the third week post chemotherapy. We observed that three major symptom severity patterns developed, varied and persisted post chemotherapy. The result revealed the interaction of symptom severity, anxiety, depression and hemogram in leukemia patients post chemotherapy. To understand the symptoms severity, psychosocial distress of leukemic patients will provide further knowledge for nursing and medical treatment and health-related quality of life.

Abstract: 656 Poster: 563

CYCLOSPORIN-A INDUCED NEUROTOXICITY

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The use of cyclosporin- A(Cy-A)has been associated with several side effects including neurotoxicity.The mechanism of toxicity is not well known. In a five year period,140 patients with hematologic disorders underwent allogenic hematopoietic stem cell transplantation (HSCT). All of the patients received Cy-A for prophyaxis of Graft versus host disease (GVHD). A 43 year old man with acute lymphoblastic leukemia underwent allogeneic HSCT. He has started Cy-A for GVHD prophylaxis one day prior to transplantation at a daily dose of 200 mg IV.He was also started on methylprednisolon on the 35 day of transplant at a daily dose of 60 mg. On day 45,he developed acute-onset,headache,weakness and behavioral abnormality.Later 5 hours he developed confusion and generalized seizures. Physical examination revealed markedly weakness and bilateral Babinski sign. Visual acuity testing showed normal vision in both eyes.No visual field defects were detected. The patient had an normal blood pressure.Cerebrospinal fluid examination revealed no cells, glucose 75 mg/dl protein 60 mg/dl and culture was negative for bacteria and fungi. Magnetic resonance imaging(MRI) of the brain showed scattered focal areas of increased T2 signal in the subcortical white matter of left parieto-occipital lobe and left forceps major. Vertabral,basiller and carotid vessels flows were normal.Cyc-A was stopped and the patient was placed on mycophenolate mofetil (MMF) for GVHD prophylaxis at a dose of 2000 mg/day.The next day his headache improved markedly also his symptoms and signs gradually improved.On follow up,MRI was repeated 1 month later and showed marked improvement. In conclusion Cy-A causes several neurological problems in transplant patients.The mechanism of toxicity is not well known. Cyc-A releated neurotoxıcıty was found to be a rare complication in patients who have had cyc-A. Cy-A neurotoxicity is often detected by MRI but switching from Cy-A to MMF can usually succesful in preventing worsening or recurrence of neurotoxicity.

Abstract: 657 Poster: 564

HOME BASED CLINICAL ASSISTANCE IMPROVES THE QUALITY OF LIFE IN ONCOHAEMATOLOGICAL PATIENTS: A PILOT STUDY BY SAN GENNARO HOSPITAL HAEMATOLOGY UNIT ASL NA 1 AND A.I.L. ASSOCIATION NAPLES, ITALY

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Background Until 10 years ago all chronic oncohaematological patients had to be admitted frequently in hospital to receive cyclic chemotherapy or clinical checks. This condition leads, especially in old patients, to a negative impact on their quality of life. The new `concept` of hospital and the patient`s central role have led to a modification in the way to treat chronic onco-haemato-logical patients. Therefore, the hospital has been changed from a close environment to a dynamic operative system which continues to communicate with the patients also after their discharge. "The hospital goes to the patients` house". Aims The Haematology Unit of San Gennaro Hospital in collaboration with AIL (Associazione Italiana contro le Leuce-

mie - linfomi e mieloma) have activated an experimental public-private cooperation protocol for one year starting 1.1.2005 with the aim to guarantee a continual homecare assistance after discharge. The project objectives are: 1.to improve the patients` quality of life 2. to provide continual specialised assistance 3. to reduce the number and length of hospital hospitalization 4.to rationalise cost Methods After regular admission and DH recovery, patients are treated at home by a team of haematologists provided by AIL and nurses from the department of Haematology. Therefore, the patients already know the doctors and nurses from their previous hospitalization. The team is coordinated by the head physician of the Haematology Unit. Homecare assistance guarantees: 1. Haematological checks and blood sample collection 2. Supportive therapy 3. Non-aggressive cyclic chemotherapy The diagnostic and therapeutic tools are provided by the Haematology Unit Requirements for protocol inclusion: 1. Previous admission in the Haematology Unit 2. Haematological diagnosis 3. No acute complications, at the time of enrolment, requiring hospital monitoring 4. Presence of at least one relative interacting with the patient and the assistance team 5. Patient`s residence in ASL Napoli 1 area 6. Patient`s written informed consent The evaluation of the quality of life is carried out through an EORTC QLQ-C30 questionnaire at the time of discharge, on the first home visit and then every three months. Preliminary results: Since 01.01.05, 10 patients have been enrolled (4 M and 6 F, average age 78 years range 66-88) affected by: Multiple Myeloma (2 pts), CLL (3 pts), MDS (4 pts), ET (1 pt) All patients had been previously admitted to the Haematology Unit. At present 10 patients still receive specialised home based clinical assistance 10/10 pts are receiving periodic specialised checks and blood sample collection, 6/10 pts are receiving cyclic chemotherapy, 4/10 pts are receiving blood transfusion. The EORTCQLQ-C30 questionnaire preliminary analysis shows an improvement in patients` emotional and cognitive state and their social life with a reduction of subjective symptoms such as nausea, insomnia, depression, stomach ache, apathy and anxiety. The health global evaluation scale of EORTCQLQ-C30 shows at this stage an increase between 10-30 points in the pts` perception of their health. The questionnaire`s statistical analysis will be carried out at the end of the 12 month period. Conclusions: Continual haematological home based clinical assistance is a modern approach to oncohaematological patients and it has a favourable impact with patient`s quality of life. adaqui@fastwebnet.it

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Abstract: 658 Poster: 565

METRANIDAZOL TREATMENT FOR CYCLOSPORININDUCED GINGIVAL HYPERTPOPHY IN 3 PATIENTS

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Gingival hypertrophy is a frequent complication of cyclosporın-A (cyc-A)therapy.the improvement or cyc-A induced gingival hyperthropy has been reported with metranidazol therapy in transplant recipients. We observed gingival hypertrophy in our three patients who are using cyc-A.Two of these patıent`s diagnosis were Aplastic Anemia other one was PNH.For 14 days, they used 1 gr. Metranidazole twice a day.All of them improved with this treatment. Our first patıent has been received cyc-A for 4 years.Hıs gıngıval hypertrophy decreased from grade 3 to grade 1 at the end of the metranidazole therapy. The second patient was diagnosed PNH.He used cyc-A for 5 months.At the end of the 14 days metranidazole therapy;his gingival hyperthropy decreased from grade 2 to grade 0. In our last patıent,gıngıval hyperthropy has occured 3 months later than beginning of the Cyc-A therapy.At the end of the metranidazol therapy,gingival hypertrophy had decreased grade 3 to grade 1. Consequ ently,metranidazole is effective therapy at cyc-A induced gingival hyperthropy, however, its mechanism is stil unknown, on the other hand, the antibacterial effect of metranidazole can be responsible of this mechanism.

Abstract: 659 Poster: 566

HOW TO IMPROVE THE QUALITY OF LIFE IN ONCOHAEMATOLOGICAL PATIENT WITHOUT ADDITIONAL COSTS

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Background: The ASL NA1 is organized in 10 districts, corresponding to the several UU.SS.LL of the City-Hall of Naples. The San Gennaro Hos-

pital is one of the nine Hospitals in the ASL NA1. The operative unit of Haematology of the San Gennaro Hospital is able to hospitalize 13 patients and other 4 patients in Day Hospital regimen. In 2004 798 patients have been accepted for a total period of 6890 days of hospitalization. The total gain was 3,400,000 euros. Aims: The reduction of the hospitalization days for a patient induces an amelioration of both his quality of life and the reduction of the risk of nosocomial infections. Methods: We have planned to obtain a 30 % decrease of the hospitalization days of the patients; 7% increase of the turnover of the patients; consequent decrease in the waiting list. The financial objective was planned to be an increase of 7% of the gains obtained by DRG per year, thus compensating the costs of home-based clinical assistance. Results: The project of assistential continuity that will be developed between 2005 and 2007 will be supported by a partnership between ASL NA-1 and The Italian Association for Leukemia Research. Ten patients who had total 1000 hospitalization days will be enrolled. They will be assisted by 2 MDs and 2 nurses in home-based regimen for a total of 200 monthly hours. We plan to obtain an increase of about 30 hospitalization per year with an increase of the gain equal to 200000 euros per year, that will be enough to support the total cost of the project. Conclusions: The improvement of the quality of life of the patient could be obtained without extra charges. adaqui@fastwebnet.it

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Abstract: 660 Poster: 567

AGE AND GENDER ASSOCIATED DIFFERENCES IN THE QUALITY OF LIFE OF TURKISH ADULT HEMATOPOIETIC STEM CELL TRANSPLANTATION RECIPIENTS

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Background The increasing utility of hematopoietic stem cell transplantation (HSCT) in malignant and nonmalignant diseases and improvement in rates of long-term survival make it crucial to assess the quality of life (QOL) after HSCT. Despite of the fact that most of these studies have shown that the patient receiving HSCT at younger age indicated worse life satisfaction than those at an older age, data in literature are still contradictory. Likewise, it was proposed that the age at HSCT did not correlate with the QOL outcomes. Similar controversy continues in gender analysis of QOL findings. Moreover, the overwhelming majority of QOL studies in HSCT recipients have been done in Western Europe and North America and a little data was found in developing countries and different cultural and religious background. Aim Our aim was to evaluate the age and gender differences in QOL after HSCT in adult Turkish patients using a Turkish version of the Functional Assessment of Cancer Therapy - Bone Marrow Transplant (FACT-BMT) questionnaire (version 4). Method The Turkish version of FACT-BMT was developed using the standard Functional Assessment of Chronic Illness Therapy (FACIT) translation methodology, and was pre-tested on 12 HSCT patients. After validation, the questionnaire was employed to study QOL in 95 additional patients. Results There were no statistically differences between the genders regarding physical, social, emotional and functional well being subscales of Turkish FACT BMT. Scores of having a good apetite (C6), interest in sex (BL4), like the appearance of their body (C7) and being able to get around by themselves (BMT5) were significantly higher amongst the male patients whereas the symptom of getting tired easily (BMT6), having tremors (BMT14), shortness of breath (B1) were prominent in female recipients. The mean scores of social/family ($p=0.01$), functional ($p=0.006$) and emotional ($p=0.04$) well being items were lower in younger patients. Evaluation of mean score on physical well being revealed statistically significant difference which was higher in younger patients. Fear of inability to having children ($p<0.001$), loss of concentration ($p=0.02$) and having frequent cold/infections ($p=0.005$) were more prominent amongst patients younger than 40 years. Bothering by skin problems (e.g. rash and itching) was significantly frequent in younger patients with HSCT Conclusion With regard to male and female gender comparison, even the physical, social, emotional and functional well being subscales of Turkish FACT BMT reflect no statistically significant differences, yet females showed a poorer satisfaction of QOL in their daily routine. Similar patterns continue in age related differences. Gender and age related needs in HSCT are important factors of general well-being and quality of life during outpatient follow-up

and should be part of clinical assessment. Çetiner.m@superonline.com

Abstract: 661 Poster: 568

PSYCHIATRIC SEQUELAE IN CHILDREN WITH ACUTE LYMPHATIC LEUKEMIA AND THEIR CARE PROVIDERS

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The aim of the study was to assess psychological sequelae of acute lymphoblastic leukemia (ALL) on both the children and their parents at different stages of the illness.SUBJECTS:103 patients with ALL and 97 parents were recruited from the Hematology/Oncology Unit, Children`s Hospital, Ain Shams University,Cairo;Egypt. Patients were 5-16 years old (mean 10 ±2.4 years); subdivided into 5 subgroups: Group I: initial diagnosis, Group II: initial complete remission, Group III: maintained complete remission for l year or more but still under antileukemic therapy, Group IV: cured patients who stopped therapy for one year or more,and Group V: patients in relapse.The patients were compared to 22 healthy controls and their parents..METHODS:Both the patients as well as controls were subjected to: thorough clinical history and examination; semi structured psychiatric interview according to the international classification of disease ICD-l0; Wechsler intelligence scale; children manifest anxiety;and children depression inventory.Par-ents of leukemic children and their healthy controls were subjected to the followings: general health questionnaire; semi structured psychiatric interview; ICD-l0 symptom checklist; Hamilton anxiety rating scale; Hamilton depression rating scale; posttraumatic stress assessment scale; and PCASEE scale for assessment of the quality of life.RESULTS: Comorbid psychiatric conditions were observed in 59% of leukemic children; including:adjust-ment disorder, oppositional defiant disorder, generalized anxiety disorder, separation anxiety disorder, and posttraumatic stress disorder. The highest prevalence of psychiatric morbidity was observed in the relapsing groups (80%), followed by the cured group (64%). Risk factors for psychiatric morbidity were older age at the time of test application, older age at the time of diagnosis, female sex, patients with CNS disease, and those with parental psy-chopathology.Regarding the cognitive functions, the most pronounced effects were observed in the survivors;the main decline in cognitive functions in comparison to the newly diagnosed was observed in arithmatic ability and the verbal IQ. Risk factors for cognitive decline in the survivors, were: irradiation with 24 GY, younger age at the beginning of treatment, children younger than 5 years old at the time of irradiation and lower education level of the parents.Psychiatric morbidity reached up to, 60% in the parents. The most common diagnoses encountered were adjustment disorder, depression, and generalized anxiety disorder. Highest psychiatric morbidity was observed at initial diagnosis of the illness and in the relapsing group. Risk factors for psychiatric morbidity in the parents included; being the mother, lower education and lower profession level. With increased duration of treatment, parents suffered. from poor judgment, frequent forgetfulness and inability to concentrate (cognitive subscale of QOL). CONCLUSION:Nearly more than half of children with cancer and their parents suffer from psychiatric morbidity; therefore mental health services should be included in the multidisciplinary team caring of childhood cancer.

Abstract: 662 Poster: 569

THE EFFECT OF AUTOMATED THERAPEUTIC RED CELL-EXCHANGE ON HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH SICKLE CELL ANEMIA

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Health-related quality of life (HRQOL) is diminished in patients with sickle cell disease (SCD), but the effect of automated therapeutic erythrocyte exchange status (ARCE) on HRQOL is unknown. The objectives of this study were, therefore, to evaluate HRQOL of patients with SCD during the six months period before and after procedures of ARCE therapy used for various indications. The study was carried out between April 2003 and May 2005. Study group consisted of 29 patients (19 M, 10 F) with sickle cell disease

between the ages of 17 and 41. HRQOL of the patients was evaluated by using the data obtained through six months before the exchange procedures started, and compared to the data obtained by evaluating HRQOL through six months after the last exchange procedure ended. HRQOL was assessed using the generic SF-36 survey. The SF-36 contains eight subscales that include general health (5 items), physical functioning (10 items), limitations on usual role-related activities due to physical health problems (4 items), bodily pain (2 items), energy and fatigue (vitality, 4 items), limitations on usual role-related activities due to emotional and mental problems (3 items), social functioning (2 items), and emotional and mental health (5 items). The majority of patients had little or no change, representing either benefit or harm, in these measures of health-related quality of life. A statistically significant difference was noticed for analgesic need, and hospital day before and after the procedure (P<0.001, and P=0.002 respectevely). There was no significant difference between blood transfusion need before and after ARCE (P>0.05). There is no standart protocol for ARCE in patients with SCD. Because ARCE has all risks related with allogeneic transfusion, the question about long term treatment of ARCE remains open and contraversial. Therefore, we discuss some possible reasons of absence of the positive effects of ARCE on HRQOL in patient with SCD.

Abstract: 663 Poster: 570

ACUTE MYELOID LEUKEMIA (AML) TREATMENT IN ELDERLY PATIENT: A COMPLEX CHOICE BASED ON QUALITY OF LIFE, PHARMACOECONOMIC ASSESSMENT AND EFFICACY OF TREATMENT

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Background Which is the best treatment for AML in elderly patients is still debated. Actually there are three main options: supportive treatment (ST), conventional chemotherapy (CC) and low dose chemotherapy (LDC). Aims Aim of this study is to define the best therapeutic and pharmacoeconomic approach in elderly AML. Methods This is a retrospective nonrandomized study. A cost analysis on 17 patients hospitalization was performed. The monthly cost of hospitalisation or specific care was calculated dividing the global expense of hospitalisation or specific care in each group of treatment, for the sum of survival months of all patients in that group. We present a two center study. Results 26 patients (15F/11M), median age 72 years (R 65-80), were treated as follows: 10 with CC, 12 with LDC, 4 with ST. 19 patients presented comorbidity, 19 had PS 0-1, 10 had secondary leukaemia and M2-M4 were the most represented FAB subtypes. The most frequent comorbidities were diabetes (11 pts), second neoplasms (5pts) and ischemic cardiopathy (4pts). Global median survival for all patients, without regard for the treatment received, was 3,5 months (R1-12). Median survival was 3 months for patients treated with CC, 4 for LDC and 2.5 for ST. Median hospitalisation was 1 month for ST (R0.5-2), 3 months for CC (R1-5) and 1.5 month for LDC (R0.2-4). Monthly cost of hospitalisation was €14700 for ST, €5300 for CC and €1100 for LDC. The antibiotic expense was higher in ST (€9700/month vs €1800/month in CC and €350/month in LDC), but transfusion expense was higher in CC and ST (€1700/ month vs €500/month in LDC). Chemotherapy expense was €600/month in CC vs €7/month in LDC. New drugs (Mylotarg and Glivec) increased significatively chemotherapy costs (€1000/month vs €40/month) and hospitalisation expense (€4100/month vs €2300/month). Erythropoietin use didn`t reduce transfusional expense (€1200/month vs €700/month in patients without erythropoietin). G-CSF administration wasn`t effective in antibiotic expense reduction (€1800/month vs €1100/month in patients without G-CSF). Supportive measures were higer in ST (€3200/month) than in CC (€1200/month) and LDC (€250/month). Summary/Conclusions In conclusion LDC seems to be an economic and effective therapeutic option especially if performed in outpatient setting. A more appropriate use of albumin and growth factors would be desirable to reduce an inappropriate and eccessive sanitary expense. Use of new drugs in elderly AML is still to well define under therapeutic and pharmacoeconomic aspect. Albumin, parenteral nutrition and growth factors use are the main cause of increased expense in supportive measures. Nevertheless these data need further confirmation on a larger patient cohort.

Abstract: 664 Poster: 571

THE EVALUATION OF QUALITY OF LIFE IN ONCOLOGY WORKERS

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Background: Quality of life in field of health is defined as goodness of state including two conditions; ability of carrying out the daily activities representing psychological and social goodness and the satisfaction comes from life and individual good condition named general state. Aims: The aim of this study was to evaluate the quality of life (QOL) and associated factors in health personnel who work in haematology-oncology department of hospitals in İzmir, Turkey. Methods: Study group included 40 doctors and nurses from Ege University Oncology Hospital, Haematology-Oncology Clinics of Dr. Behçet Uz Children`s Hospital and SSK Tepecik Hospital. "World Health Organisation Quality of Life Brief form (WHOQOLBREF)" was used in evaluation. Results: The physical, psychological, social and environmental field scores of QOL were 14.7 ± 2.35, 14.7 ± 2.13, 14.5 ± 3.26 and 13.1 ± 2.25, respectively. The profession, sex, and educational status were determined as related factors in QOL. Summary/Conclusions: It was showed that social and demographical properties of health-care workers had an important role on QOL.

Abstract: 665 Poster: 572

ROLE OF SPLENECTOMY IN ITP IN DEVELOPING COUNTRIES

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Therapeutic management in chronic ITP is a difficult problem in poor patients in developing countries who can not afford the cost as there is almost non supportive government health care system. To assist the role of splenectomy in overcoming thrombocytopenia in cases of chronic thrombocytopenia, 50 patients were selected age range of 15 to 55 years in whom drug therapy cannot be instituted or kept prolonged.These patients were subjected to surgical intervention in the form of splenectomy. This group of patients was compared with group of patients who were managed by drug therapy for clinical and laboratory improvement. The spleens removed were histopathologically examined and pathological findings were co-related with clinical features. It has been observed that splenectomised patients of ITP remain symptom free for more than 2 years in 60% cases and do not require drug therapy. The cost effectiveness of splenectomy allows patient to afford it and the entire managment of the disease remain cheaper by 80% as compared to medical treatment. Hence it is recommended that in patients who can`t afford cost of medical treatment in ITP it is worth giving trial of splenectomy in such patients. The detailed clinical observation and Laboratory findings with methodology used will be discussed in tabulated forms in the poster presentation

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Abstract: 666 Poster: 573

USAGE OF EICOSAPENTAENOIC ACID AND HIGH PROTEIN CONTAINING ENTERIC FEEDING PRODUCT IN MALIGNANCY RELATED WEIGHT LOSS OF CHILDREN

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The aims of nutrition therapy are preventing weight loss and improving functional capacity and life quality in cancer patients. Clinic effectiveness of standard nutritional support is limited in patients with tumor related weight loss. We aimed to observe weight changes of actively chemotherapy receiving patients by using eicosapentaenoic acid and high protein containing enteral nutrition product (ProSure®). 46 patients [27 (58.7%) male, 19 (41.3%) female] were included to study. Mean age of patients was 80.5±41.38 months (20-187 months). 39 patients had diagnosis of leukemia, 7 had that of a solid tumor. All patients were receiving chemotherapy actively. Basal weight and body sizes of patients were recorded and they were suggested to use enteral products twice a day (morning-evening) in addition to their normal feeding. Patients were followed with regular intervals and their data were recorded. Their tolerance and regular use of the

product were questioned. Patients were followed approximately 92±40.8 days. 33 (71.7%) patients had consumed and tolerated the product, 13 (28.3%) patients had consumed less than suggested amount because of its taste. Body weights of 20 (43.5%) patients were increased while that of 9 (19.6%) were decreased. No significant weight changes were observed in 17 (37%) patients. In conclusion, body weights of 80.4 % of our patients were preserved, and that of 43.5 % were increased.

Abstract: 667 Poster: 574

GENETIC SELECTION OF HLA COMPATIBLE AND DISEASE FREE EMBRYOS FOR HEMATOPOIETIC STEM CELL TRANSPLANTATIONS

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Stem cell transplantation from siblings have been a valuable alternative for therapy of a variety of monogenic disorders, hematologic malignancies and myelodysplasias. However, the probability of an unaffected and complete HLA matched sibling varies between 18,75 -25%. Often, the plans for `saviour` offsprings fail by termination of pregnancies because of affected fetuses thus exacerbating the sufferings in the family. For this reason, families having a child with monogenic hematologic disease prefer preimplantation genetic diagnosis (PGD) to have a baby both free of the disease mutations and of a Human Leukocyte Antigen (HLA) compatibility with the affected child. Between 2000 and 2005, 53 referrals to our center have been evaluated for eligibility to PGD. The families have been given detailed genetic counselling and then referred to a centre for stem cell transplantation to obtain full information on available alternative treatments, whether other clinical options have been exhausted, the chances of success of stem cell transplantation from an HLA identical sibling and possible complications of stem cell transplantation. Followed by approval of the local medical and ethical boards, the PGD cycle has been initiated. Out of 53 referrals, 42 couples have been found eligible for PGD. The others have been rejected for reasons including unreproductive age, medical condition of the affected child, unproper expectations of the family from a new baby, economic reason, but most frequently decline of transplantation indication by the hematologists. PGD is performed on one or two single blastomers biopsied from 4-8-cell embryos on day 3 after fertilization of the egg. HLA haplotype and disease (beta thalassemia, Fanconi, SCID or Wiskott Aldrich syndrome) associated gene were initially amplified by multiplex PCR after the blastomer lysis. The embryos selected for HLA alleles by performing sequence based typing were analyzed further for disease mutations either by real-time PCR/ melting curve analysis in Lightcycler or by direct DNA sequencing. Total of 9 pregnancies have been obtained which has resulted already 4 deliveries. One cord blood has been trasplanted to 12 year old sibling with beta thalassemia. The recipient sibling is symptom free since 1 year. Two other transplantations are planned from cord blood and one from bone marrow. Two pregnancies have spontaneously aborted and 3 pregnancies are ongoing. We have experienced that PGD for HLA match and monogenic disease provides valuable source of stem cells for transplantation. About 100 cord blood transplantations are expected worldwide each year from siblings generated by PGD. Stringent medical and ethical selection criteria in PGD planning and processing requires a well working multidisciplinary approach where the role of hematologist is critical.

Abstract: 668 Poster: 575

HOW TO CALCULATE THE QUANTITY OF CD34(+) CELLS INFUSED ? A SINGLE CENTER COHORT STUDY BASED ON ACTUAL, IDEAL OR ADJUSTED IDEAL BODY WEIGHT

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Progenitor cell content of hematopoietic stem cell graft is now measured in terms of CD34+ cells. The number of CD34+ cells infused influences hematopoietic recovery. Generally, the recipient actual body weight (ABW) was used for calculat-

ing the content of CD34+ cell. Limited data suggest that the cell dose should be based on ideal (IBW) rather than actual body weight (ABW) for HCT (BMT 2003; 31:861-864, BMT 2004; 33: 161-164). Therefore, we aimed to evaluate whether there were any differences for neutrophil engraftments by calculating of CD34+ cell content in the harvest according to actual, ideal or adjusted IBW (AIBW) of the recipients in both autologous and allogeneic setting. Two hundred thirty four allogeneic (allo-) HCT (n=234) and 148 autologous (Auto) peripheral HCT were retrospectively analyzed (Table 1). The median time to neutrophil recovery was 15 days (range: 8-50 d) in allo-HCT group and 10 days (range: 6-54 d) in auto-HCT, respectively. We observed a negative correlation between the neutrophil recovery and the cell doses infused as to each of these BWs in allo-HCT group, but in auto-HCT group. This negative correlation was stronger for IBW (r2=0.024, p=0.018) and AIBW (r2=0.023, p=0.021) than for ABW (r2=0.017, p=0.044) in allo-HCT group (Fig 1). The time to neutrophil recovery was compared in quartile analysis for various CD34+ cell doses such as <3x10e6/BW vs. >=3x10e6/BW and <5x10e6/BW vs. >=5x10e6/BW separately for each BW. In allo-HCT, both IBW and AIBW revealed more significant difference in comparison to ABW in patients with 5x10e6/BW cutoff value (p<.0001, p<.0001 and p=0.002, respectively). In auto-SCT group, however, calculations using AIBW led to an accelerated neutrophil recovery (p=0.03). When neutrophil recovery in patients receiving <3x10e6 CD34+ cells /BW was compared with patients receiving >=3x10e6/BW CD34+ cells in auto-HCT group, we found a significant difference for CD34+ cell dose based on IBW (p=0.008) in comparison to both cell doses based on AIBW and ABW (p=0.05 and p=0.16, respectively). In conclusion, our data suggested that both IBW and AIBW used calculations for CD34+ cell infused are better predictors of neutrophil recovery in comparison to ABW in allogeneic peripheral blood stem cell transplantation.

Abstract: 669 Poster: 576

THE EFFECTS OF SYSTEMIC GLUTAMINE SUPPLEMENTATION ON TRANSPLANT COMPLICATIONS IN PEDIATRIC HEMATOPOIETIC STEM CELL TRANSPLANT RECIPIENTS

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Introduction: Although several studies suggest a beneficial role for systemic glutamine supplementation in adult bone marrow transplantation patients and particularly in the autologous settting, controversy exists in literature. In addition, there is insufficient data in children. Material and methods: The effect of systemic glutamine supplementation on transplant course and complications was investigated in a case controlled study in children who underwent allogeneic hematopoietic stem cell transplantation (HSCT) for malignant (n=20) and non-malignant (n=21) disorders. Results: Parenteral glutamine administration (dipeptiven) was associated with significantly reduced number of febrile days (12.94 ± 11.17 vs 5.74 ± 4.45) (p<0.05) and there was a trend towards early discharge (before day +37) in patients who received glutamin. In addition, the incidence of sinusoidal obstruction syndrome (venoocclusive disease), acute GVHD (>grade II), and mucositis (>grade II) was relatively decreased (2/21 vs 7/20 patients, 1/21 vs 3/20, and 6/21 vs 11/20 patients respectively) in glutamine-supplemented patients. There was no significant difference in the neutrophil and platelet engraftment days, immediate lymphocyte recovery, CD4/CD8 ratio, drug-related toxicity or overall mortality. Glutamin administration was safe and no toxic reactions were reported. In conclusion, the results of the present study suggests that systemic glutamine supplementation in children undergoing allogeneic HSCT seems to be beneficial during the immediate transplant course, at the catabolic phase of the transplantation procedure. However, cost analysis is needed to suggest its routine use.

Abstract: 670 Poster: 577

CORD BLOOD TRANSPLANTATION (CBT)

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Allogeneic hematopoietic stem cell transplantation (HSCT) has been used to treat thousands of patients, adults and children, with life-threatening hematological diseases. The principal limitations of allogeneic bone marrow transplantation are the lack of HLA-matched donors and the complications of graft versus host disease associated with HLA dispartities. In the absence of an HLA identical sibling donor, alternative donors such as mismatched related or matched unrelated donors are searched, major and minor histocompatibility differences are often unrecognized by current typing tests, explaining the high frequency of post transplant complications including graft failure, graft versus host disease and delayed immune reconstitution. In the absence of a perfectly matched donor, several means of circumventing the HLA barrier have been investigated; various methods of T cell depletion have been used to reduce graft versus host disease (GVHD), the major pitfall of this method has been an increased risk of bone marrow donor rejection and leukemic relapse; rejection can be avoided by increasing the number of stem cells infused; this has been obtained by increasing the intensity of the conditioning regimen and by using growth-factor-mobilized peripheral blood stem cells which contain ten times more HSC than bone marrow cells, thus improving the rate and speed of engraftment.Since the first cord blood trasplant performed in 1988, cord blood transplantation is increasingly used as a new source of hematopoietic stem cells. The expected advantages of umbilical cord hematopoietic stem cells are the enrichment of immature progenitors hematopoietic stem cells which should facilitate engraftment and the immune immaturity of the immune system at birth which should decrease the incidence and severity of graft versus host disease. Cord blood stem cells have distinctive proliferative advantages which include increased cell cycle rate, autocrine growth factors production and increased telomere length. The small number and the relative immaturity and enrichment in naive T cells of cord blood lymphocytes, should reduce the risk and severity of GVHD. In order to develop and evaluate cord blood transplant results, the European blood and Marrow Transplantation group (EBMT) has organized a concerted action the EUROCORD group.In the last report of EUROCORD, Locatelli et al. analyzed 44 patients (median age, 5 years; range 1-20 years) given an allogeneic related cord blood transplant for either thalassemia (n = 33) or sickle cell disease (n = 11). In this study no patient died and 36 of 44 children remain free of disease, with a median follow-up of 24 months (range, 4-76 months). Only one patient with SCD did not have sustained donor engraftment as compared with 7 of the 33 patents with thalassemia. Three of these 8 patients had sustained donor engraftment after BMT from the same donor. Four patients experienced grade 2 acute GVHD; only 2 of the 36 patients at risk developed limited chronic GVHD. The 2-year probability of event -free survival is 79% and 90% for patients with thalassemia and SCD, respectively. Use of MTX for GVHD prophylaxis was associated with a greater risk of treatment failure. They concluded that related CBT for hemoglobinopathies offers a good probability of success and is associated with a low risk of GVHD. In conclusion analysis of current results show that cord blood transplant is still an investigational procedure, some questions concerning indications, engraftment and GVHD have been partially answered. Also results show that a low number of nucleated cells infused has been associated with both a delay of engraftment and an increased risk of non engraftment.

Abstract: 671 Poster: 578

BUDESONIDE MOUTH-WASH FOR ORAL GRAFT VERSUS HOST DISEASE

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Background: Graft versus host disease (GVHD) is a common complication of hematopoietic stem cell transplantation. The oral and gastrointestinal tract (GIT) mucosa are among the main target organs of GVHD. Oral GVHD is often refractory to systemic treatment, and therefore complementary topical treatment is required. This clinical study aimed to evaluate the efficacy of budesonide, a newly registered steroid with high potency and low bioavailability, for the treatment of chronic oral graft versus host disease (GVHD). Patients and methods: Thirteen patients with chronic oral GVHD not responding to other systemic or topical treatments were treated with 3 mg budesonide/5 ml saline 3 times a day for up to 3 months. Oral manifestations were monitored, and mucosal response scored. Results: An objective response to budesonide mouthwashes was observed in all patients. Five of the 13 experienced a complete response, with an additional 3 showing good responses. Moderate and mild responses were documented in 3 and 2 patients, respectively. All patients reported subjective improvement. Eight patients reported a good or complete

response (6 and 2, respectively). Two patients reported a moderate response and 3 a mild response. Improvement was noted as early as 3 days following initiation of budesonide treatment. Mean lag time to initial response was 12 days, with a range of 3 to 21 days. Conclusion: Budesonide is suggested as an alternative treatment for chronic oral GVHD that were being resistant to other treatment modalities.

Abstract: 672 Poster: 579

ALLOGENEIC HEMATOPOETIC CELL TRANSPLANTATION IN ACUTE MYELOBLASTIC LEUKEMIA: ANKARA UNIVERSITY EXPERIENCE

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Aim: Allogeneic hematopoietic cell transplantation (Allo-HCT) is still a highly efficient approach for consolidation or achievement of remission in standard-or high-risk acute myeloid leukemia (AML) patients. We retrospectively analyzed the impact of pre-and post-transplant variables on the outcome of allo-HCT in 147 consecutive patients with de novo or secondary AML in our single center cohort. Patients and Methods: Between November 1989 and November 2004, 141 patients with de novo-and 6 patients with secondary-AML were allografted from their HLA-identical sibling donors, but two patients had an HLA-identical unrelated and one patient a singeneic donor in our center. The median age was 30 years (range, 6-63 years) and M/F ratio was 86/ 61. The patients` characteristics and transplant related data were shown in the table 1. Median follow-up period was 74.5 months (0.3-184 months). Results: The stem cell source used was bone marrow 36 % (allo-BM) and 64 % peripheral blood (allo PB). Engraftment rate was 93.2 %. Times to neutrophil and platelet engraftment were median 14th day after stem cell infusion. The hematopoietic recovery rate of the allo-PB group was faster than allo-BM ($p<0001$). Acute severe graft versus host disease (GvHD) was observed in 28.3 % of the patients while chronic GvHD was developed in 66.6 % for those survivors after day + 100. Twenty-two percent of the patients relapsed and/ or progressed. Donor lymphocyte infusion was given in 17 patients for relapse or loss of donor type chimerism and anticipated relapse. The use of peripheral blood stem cells was associated with more acute severe GvHD (RR: 1.451 [95% CI:1.156-1.819], $p=0.005$) in multivariate analysis. In addition to this finding, transplantation from a female donor had increased the incidence of chronic GvHD (RR: 1.643 [95% CI, 1.022-2.641], $p=0.029$). Estimated leukemia-free survival (LFS) and overall survival (OS) at 10 years were 42.7% ± 5.1% and 51.3%±4.5%, respectively. In univariate analysis for LFS, the status at transplant (>CR1), conditioning regimen (reduced intensity regimen) and the presence of GvHD (acute severe) were independent risk factors. But on multivariate Cox-regression analysis only status at transplant and acute severe GvHD had a proven negative impact on LFS. Conclusion: In our 15 years` single center experience our allo-transplanted AML cohort approaching a size of approx. 150 patients has shown that status at transplant and developing acute severe GvHD are independent multivariate risk factors for LFS.

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MIXED CHIMERISM AFTER PERIPHERAL BLOOD STEM CELL TRANSPLANTATION IN THALASSEMIA MAJOR

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Background Hematopoietic stem cell transplantation (HSCT) is the only known curative therapy modality in thalassemia major. In some patients following HSCT, only partial hematopoietic stem cell engraftment is established resulting in hematopoietic chimerism. The theory is that hematopoietic chimerism would than result in sufficient new stem cells to partially correct an underlying genetic defect. This observation has already been made in a number of transplant-related situations