vated. Serum creatinin, liver enzymes, electrolytes and lactate dehydrogenase levels were all within normal limits. CT scans showed left pleural effusion, tail of the pancreas was enlarged, fatty tissues of the retroperitoneal region was inhomogeneous and there were lymphadenopathies at the paraaortic and paracaval regions and near to celiac turuncus those diameters were reaching to three centimeters. Ultrasonographic examination was also performed. Spleen was 145 millimeters in length and there were hypoechoic lesions those not exceeding one centimeter. Diagnostic laparatomy, liver biopsy, splenectomy and excisisonal lymph node biopsy were performed. Biopsy of the rectal mucosa was also performed and histological examination of the biopsied mucosa revealed AA-type amyloid deposition. Both serum and urine immunofixation were performed but, no monoclonal protein was detected. Serum concentrations of immunoglobulins were all in normal limits. M-mode and doppler echocardiography were normal. Complete response was obtained with six cycles of Rituximab-CHOP chemotherapy. Biopsy of the rectal mucosa was performed again and there was no amyloid deposition. Although, association of AA amyloidosis and DLBCL was very unlikely, we were unable to show any other clear etiology except for DLBCL.

Abstract: 479 Poster: 386

COMPARISON BETA-2 MICROGLOBULIN AND OTHER PROGNOSTIC FACTORS IN HODGKIN`S DISEASE

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In this study compared beta-2 microglobulin (.2μ) with lactat dehydrogenase (LDH), serum albumin, eryth-rocyte sedimentation rate (ESR) in Hodgkin`s disease. Thirty four patients (20 M, 14 F) and 19 (10 M, 9 F) healthy controls person were enrolled in this study. In group of Hodgkin`s disease (HD) befor and after treatment two times and in control group one time .2μ, LDH, ESR, serum albumin were assayed and compared. Mean age of HD group was 35.0 ± 14.7 and mean age of the control group was 36.6 ± 10.0. Fifteen cases (%44.2) of the HD group were in early stage (stage I-II) and 19 cases (%55.8) were in advanced stage (stage III-IV). In HD group mean serum LDH level before treatment (500.6 ± 235.3) was significantly higher compared with post treatment (262.0 ± 92.7) and control groups (299.3 ± 93.2) ($p<0.001$, $p=0.001$ respectively). In HD group mean serum .2μ level before treatment (9.3 ± 9.9) was significantly higher compared with post treatment (2.2 ± 1.5) and control groups (1.3 ± 0.2) ($p<0.001$, $p=0.001$ respectively). Mean serum albumin level before treatment (3.3 ± 0.7) was significantly lower than the post treatment (3.9 ± 0.3) and control groups (4.2 ± 0.3) ($p<0.001$, $p<0.001$respectively). Mean serum ESR level before treatment (51.6 ± 19.7) was significantly elvated compared with post treatment (24.2 ± 11.8) and control groups (6.3 ± 3.6), ($p<0.001$, $p=0.001$ respectively). It is shown that serum .2μ level may be take place among these parameters as at least effective as others factors for reflecting tumor activity.

Abstract: 480 Poster: 387

A CASE OF HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS WITH GENERALIZED SKIN ERUPTIONS IN A NEONATE

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Hemophagocytic lymphohistiocytosis (HLH) is a rare disease resulting from abnormal proliferation of histiocytes in tissues and organs. The incidence of HLH is 1:50,000-300,000 births. Cutaneous eruptions have been reported to occur in 6%-65% of cases. It`s important to differentiate the eruption from other systemic disease. We present the an infant with prominent skin manifestations of HLH. A term female infant was born to unrelated parents at Van State Hospital. On the 11th day of life, she was admitted to our hospital with the complaints of a generalized rash started 1 day before admission to hospital. The rash was accompanied by mild fever. There was no a history of animal exposure, bites or medication. The eruptions consisted of irregularly shaped maculopapular erythematous and purpura, which were not totally disappeared with press on, dominantly affected the face and proximal parts of the extremities. Laboratory evaluation revealed the following values: hemoglobin 8.5 g/dL; white blood cell count 2 600/ mm3; platelet count 20 000/mm3; aspartate aminotransferase 38 U/L; alanine aminotransferase 61 U/L; lactate dehydrogenase 1514 U/L; triglyceride 512 mg/dl. Hy-

pofibrinogenemi (54 mg/ dl) and hyperferitinemi (6400 ng/ml) were present. Bone marrow aspiration on day of life 25 revealed hemophagocytosis with increased macrophages and histiocytes, consistent with HLH. The patient was started on treatment with dexamethasone followed by induction chemotherapy with etoposide. A gradual normalization of triglyceride, fibrinogen level and platelet counts occurred. All skin manifestations resolved.. HLH should be kept in mind as a causative factor in neonates presented with skin eruptions.

Abstract: 481 Poster: 388

RETROPERITONEAL LOCALIZED PLASMA CELL TYPE CASTLEMAN`S DISEASE

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Castleman` s disease (CD) is a rare benign lymph node hyperplasia that its etiology is not known exactly. Three histological types have been described; hyaline vascular, plasma cell and mixed type. While two of them are localized, mix types are multicentric. While most of the lesions are found in the mediastinum it can be also seen neck, pelvis and retroperitoneum. In cases of localized CD, complete surgical excision is the treatment of choice but there are potential of malignancy of mix types. We describe here a 31-year-old woman patient with lympadenopathy in the retroperitoneal region. After total resection of mass, made histological research and found plasma cell type CD. In the patient`s history, the patient admitted to outpatient clinics of hematology department because of the complaints of loss of weight and high sedimantation ratio. The consequence of tests, she had iron deficiency, B12 vitamin deficiency and revealed paraaortic lympadenopathy in abdominal tomography. In endoscopy is demostrated atrophic gastritis. After resection of lympadenopathy, diagnosed plasma cell type CD. Then, sedimantation rate decreased from 70 mm/h to 7mm/h, and the patient gained 8 kg. In literature, the retroperitoneal CD associated with plasma cell type is seen rarely and the therapeutic aspects of this rare entity is discussed with this way.

Abstract: 482 Poster: 389

HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS SYNDROMES &A CASE REPORT

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Abstract: Hemophagocytic LymphoHistiocytosis Syndromes are heterogenous groups of disorders which develop mainly during childhood and manifest as fever, jaundice, pancytopenia, multiple organ dysfunction, coagulopathy and hypertriglyceridemia. These disorders may begin after an episode of infectious or autoimmune process, malignancies, drug reactions and sometimes as a genetic basis which can be seen in Familial Erythrophagocytic Lymphohistiocytosis (FEL).The case report is a 12 years old girl with hemophagocytic lymphohistiocytosis syndrome.

Abstract: 483 Poster: 390

EFFECT OF SOME GENETIC POLYMORPHISMS ON THE INCIDENCE AND OUTCOME OF SEVERE SEPSIS

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Background: Sepsis is systemic response to infection with bacteria, viruses, fungi, protozoa or rickettsiae. If not recognized and treated early the progression from sepsis to severe sepsis, septic shock and multiple organ dysfunction syndrome (MODS) are seen. Several genetic polymorphisms have been identified in patients with sepsis and severe sepsis, such as the TNF-alfa and TNF-beta genes, the IL-1 family, the IL-6, the IL-10, the CD-14, the Toll-like receptors, plasminogen activator inhibitor type 1, the factor V 1691G-A mutations. Aim: In this study, we aimed to investigate the relationship between the TNF-alfa 308G/A, the IL-6-174 G/C, the PAI-1, the FVL, the EPCR and the Cathepsin G (Ars 125 Ser) polymorphisms and the development and outcome of sepsis in pediatric patients. Method: We evaluated patients with severe sepsis who met the criteria for sepsis and

severe sepsis. There were 27 girls and 26 boys in this group, with ages ranging from 0 to 15 years. Samples were obtained from healthy volunteers as control samples. A written consent was obtained from each individual`s parents. DNA purification: Whole blood samples were obtained into tubes with ethylenediamine tetraacetic acid. Genomic DNA was isolated from peripheral blood cells by use of the phenol/chloroform method and analyzed for the polymorphisms of the TNF-alfa -308 G/A, the IL-6-174 G/C, the PAI-1, the FVL, the EPCR and the cathepsin G (Ars 125 Ser) polymorphisms as described previously. Results: We found that TNF-alfa 308 G/A, PAI1 4G/4G and EPCR mutations influence the risk of severe sepsis in children. It was seen the IL-6 174 G/C, FVL and Cathepsin G (Ars 125 Ser) did not influence the incidence and mortality of severe sepsis. Conclusions: Our findings suggest us that the analyzed genetic variants of TNF-alfa 308 G/A, PAI-1 4G/4G and EPCR influence the risk of severe sepsis in children. Although the small number of patients with severe sepsis prevent us from drawing a conclusion about the significance of the coexistence of these polymorphisms, our findings are interesting. In addition there exist very limited study in childhood. Further investigation should be done with a larger patient group to determine the importance of this genetic polymorphisms for the development and complications of severe sepsis.

Abstract: 484 Poster: 391

PRIMARY INVASIVE ASPERGILLOSIS OF THE MANDIBLE IN A PATIENT WITH MULTIPLE MYELOMA

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Background: Primary invasive aspergillosis of the oral cavity is a rare but serious complication in immunocompromised patients. A possible entry site for aspergillosis is the oroantral communication. The structure may be distorted by perforation of the dental root cavity or dental extraction. In addition to this, recently reported literatures suggest that bisphosphonates may contribute to the osteonecrosis of the mandible and/or maxilla. For therapy, systemic and local antimycotic drugs should be combined with debridement of necrotic hard and soft tissue. Case presentation: 69-year old female patient has applied to Gastroenterology department for abdominal pain five years ago. She underwent cholesystectomy operation six years ago and total abdominal hysterectomy 30 years ago in her personal history. There was no significant disease in her family. Her medication was verapamil for hypertension. There was no significant finding but pallor in her physical examination. WBC: 4080/mm3, Hb: 9.8 g/dl, PLT: 230000/mm3, MCV: 91 fL, ESR: 88 mm/h and a lymphocytic predominant differential with rulo formation in blood smear were established. Globulin was 7.5 g/dl and monoclonal gammopathy was determined. Elevated IgG (7110 mg/dl) and kappa light chain (14.8 g/L) levels were obtained. Bone marrow aspiration revealed infiltration of plasma cells and led to Multiple myeloma Stage III diagnosis. Skeletal X-ray showed no lytic lesions. She underwent Melphalan and prednisone therapy for six cycles. IgG level decreased to 1950 mg/dl in her follow-up. Her Hb was 9 g/dl, ESR was 120 mm/h, globulin level was 7.8 g/dl, IgG level was 6750 mg/dl when she was admitted following 3 years of lost to follow up. The therapy was switched to cyclophosphamide and prednisone with zoledronate. Primary disease regressed but a bone lesion was originated from mandible revealed in oral cavity after dental extraction. The biopsy of lesion showed aspergillosis. She underwent curettage of mandible and left inferior alveolar nerve ablation. There was no other origin of invasive aspergillosis in thoracal and abdominal examination. Serum galactomannan antigen was negative. Itraconazol (400 mg/d) was prescribed by the Department of Infectious disease after the operation. The patient is still followed up. Conclusion: Our case with multiple myeloma developed aspergillosis of mandible while actively receiving chemotherapy including steroid and bisphosphanate for 24 months. The possible entry site for Aspergillus was the dental extraction and bisphosphanate might have facilitated local invasion leading to advanced bone necrosis.

Abstract: 485 Poster: 392

IS BWT A PREDICTOR OF MORTALITY IN NEC PATIENTS? ANALYSIS OF 20 PATIENTS WITH NEUTROPENIC ENTEROCOLITIS

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Background: Neutropenic enterocolitis (NEC) is a severe complication seen in neutropenic patients with cancer. Mortality rate of NEC can be as high as 80%. Aim: The aim of this study is to determine the clinical aspects of NEC. Methods: The diagnosis of NEC was established in neutropenic patients who had received antineoplastic chemotherapy in addition to the following three criteria: i) fever (>38.3 C), ii) abdominal pain and/or diarrhea (>4 times a day), iii) bowell wall thickness (BWT) >4mm detected by ultrasonography. A structured survey form was filled for the patients included. Data were analyzed by a computer program (STATA, 8.0 Tx-USA). Results: Of the 259 febrile neutropenic episodes occured in 154 patients who received anti-neoplastic chemotherapy, NEC was detected in 20 (8%) of whom 11 were men. Mean age was 45 years. In 16 (80%) of the patients the underlying neoplasm was acute myeloid leukemia. The duration between day 0 of neutropenia and day 0 of NEC was 1-45 days (mean 6 days). All patients had abdominal cramps. Rebound tenderness was positive in eight of them. Mean number of defecation was 6 (5->10) times a day. Microscopic examination of feces was normal in all patients and no enteric pathogen was isolated from feces samples. Neutrophil count was below 100/mm3 in 16 (80%) of the patients. Blood cultures grew bacteria in 5 of the patients (two E. coli, two MRSE, one Candida). Mean duration of NEC attack was 7 days (4-30 days). Mean BWT was 8 mm (5-27 mm). Seven (35%) of the 20 patients died of NEC related syndroms (sepsis, ARDS, etc). BWT was not higher than 10 mm in any of the patients who died. Conclusion: NEC is a mortal complication of antineoplastic chemotherapy. Although BWT was found to be associated with mortality before, the results of this study seem not to be supporting this finding.

Abstract: 486 Poster: 393

EVALUATION OF SECONDARY INFECTIONS IN FEBRILE NEUTROPENIC PATIENTS WITH CANCER

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Background: Neutropenia, as a result of cancer chemotherapy, makes the patients prone to severe infections. More than one infectious episode can be seen in the same neutropenia period of a cancer patient. Aim: The aim of the study is to determine the etiological and clinical aspects of secondary infectious episodes and to identify the risk factors associated with a secondary episode. Methods: All the cancer patients who received antineoplastic chemotherapy in the hematology unit between May 2004 and May 2005 were included in the study. Data were collected from survey forms filled during routine ID consultation visits. Secondary infectious episode was defined as; i) any clinical or microbiologically documented infection which did not exist at the initial evaluation that developed either during empirical therapy or within 1 week after discontinuation of therapy, ii) fever responded to emprical therapy but recurred after an afebrile period of 48 hours during empirical therapy. Data were analyzed using Stata Statistical Software, version 8.0 (Stata corporation, Texas, USA). Proportion comparisons for categorical variables were done using chi-square tests. Multivariable logistic regression modeling was used to compute the odds ratios (ORs) of variables predictive of secondary infections. Significance was set at $p<0.05$ using two-sided comparisons. Results: A secondary infection observed in 138 (53%) of 259 neutropenic episodes with fever. Of the 138 episodes 89(64%) were in men and mean age was 38 (16-74) years. Seventy percent of the secondary infections were clinically or microbiologically documented infections. Factors on day 0 of the first infectious episode were analysed by logistic regression model. Presence of a central intravenous line (odds ratio [OR], 2.48; P = 0.002), acute myeloid luekemia (AML) as underlying disease (OR, 1.87; P = 0.026), and diarrhea (OR, 5.11; P = 0.003) were found to be risk factors for secondary infection. Conclusion: Acute myeloid leukemia as the underlying cancer, presence of a central venous catheter and diarrhea are the risk factors determined for the secondary infections in febril neutropenic patients.

Abstract: 487 Poster: 394

SHALL WE USE PROPHYLAXIS AGAINST MYCOBACTERIUM TUBERCULOSIS IN ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANT RECIPIENTS, THE IBN-I SINA HOSPITAL EXPERIENCE

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Objectives: Tuberculosis (TB) is a rare infection encountered in the setting of allogeneic hematopoietic cell transplanttion (alloHCT) patients. In developing countries despite routine Bacille Calmette-Guérin (BCG) vaccination, TB prevelance is high (incidence in Turkey in 2003: 24,31/100000) in general population. The incidence of TB infection in alloHCT recipients has been reported to be <0.1 to 2.2%. Although isoniazid (INH) prophylaxis in Tuberculin Skin Test (TST) positive patients has no impact on posttransplant TB outcome, its use is recommended by some authors. The aim of this single arm retrospective study was to determine whether TST positive alloHCT patients experience a reactivation of TB after transplant without INH prophylaxis. Over a period of 16 years (1988-2004) among 421 alloSCT recipients only 4 cases (0.95%) developed Tb and none of them died due to TB. Patients and Method: We investigated the recipients who had been performed TST pretransplant (n=102). Patient demographics are shown in Table 1. 19 patients (18.6%) were BCG naive. In the analysis of the TST results, . 15mm of enduration was considered positive for patients with BCG while .10mm was enough for patients without BCG. The median diameter of the TST enduration was 10mm (range, 0-26). 23 patients (22.5%) had a positive result, while 79 patients (77.5%) had a negative. None of the patients had received TB prophylaxis before transplant. During follow-up patients were screened with chest X-rays and computed tomography when necessary. Median follow-up time was 12 months (range, 1-54).Results: Only one among 102 patients developed TB (0.98%). This patient was a 34 year old male with CML who had received an ablative regimen before transplant and his TST result was 16 mm (positive). He presented with respiratory tract aspergillosis diagnosed by nasal biopsy on day 42 and developed grade IV acute graft versus host disease (aGVHD) on day 68 for which he received steroid, ATG and antifungal therapy. The TB positive culture result was obtained after the patient was lost from invasive aspergillosis, aGVHD and engraftment failure on day 102, so he received no specific treatment.Conclusion: In our single center experience in Turkey none of our patients had received prophylactic INH. This approach seems acceptable as there was no significant increase in TB infection after alloHCT compared to normal population.

Abstract: 488 Poster: 395

IN VITRO SUSCEPTIBILITY RATES OF ENTERIC GRAM NEGATIVE BACILLI FROM HEMATOLOGY-ONCOLOGY UNITS AT ANKARA UNIVERSITY IBNI SINA HOSPITAL (2001-2003)

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This study is planned to report the antibiotic resistance rates of gram negative enteric bacilli isolated from patients with hematological and oncological malignancies at Ankara University Medical School İbni Sina Hospital. Retrospective analysis of culture records of Central Laboratory - Microbiology Unit between January 2002- December 2004 was performed. All of the bacteria were from hospitalized patients and only isolates from clinically significant specimens (blood, catheter tip, pus, urine, fluids from closed body spaces, lower respiratory tract specimens etc.) were counted. Repeated isolates were excluded. Bacterial identification was performed using miniApi system (bio-Merieux) and antibiotic susceptibility tests were done by the same system with the addition of agar disc diffusion (according to CLSI) and E tests where necessary. The antibiotics evaluated for enterobactericeae were amoxicillin, amoxicillin-clavulanic acid, piperacillin, piperacillin-tazobactam (p-taz), ticarcillin, ticarcillin- clavulanic acid, cefuroxime, cefotaxime, ceftazidime, cefepime, sulbactam-cefoperazone (scef), carbapenems (imipenem&8725;meropenem), cotrimoxazole, aminoglycocides (gentamicin, amikacin, netilmicin, tobramycin) and ciprofloxacin. For E.coli isolates (n: 390), the first four effective antibiotics were carbapenems, amikacin, p-taz and scef with resistance rates of 0%, 9,5%,19,2% and 22,2% respectively. E.coli was mostly resistant to amoxicillin (76,5%) and ticarcillin (%75,5). Third and 4th generation cephalosporins revealed 31% of resistance for total 3 years with a decrease to 22% resistance in 2004. For K.pneumoniae (n: 281) carbapenems, amikacin, gentamicin and netilmicin were the first four effective antibiotics with resistance rates of 0.7%, 5,7%,18,9% and 19,6%. Amoxicillin, piperacillin and ticarcillin were had the highest resistance rates of 100%, 97,5% and 98,9 % respectively. The resistance rates against 3rd and 4th generation cephalosporins revealed a rate of 26-28% with similar decrease from 32% in 2001 to 22% in 2004. Resistance against ciprofloxacin was lower in K.pneumoniae (24,9%) isolates compared to E.coli (60%). The other enteric bacilli (n: 115) revealed resistance rates for carbapenems

(no resistance), amikacin (6,1%), gentamicin (18.3%), cefepime (18,5%) netilmicin and p-taz (19,1%) as the most effective antibiotics. Gram negative enteric bacilli isolated from patients hospitalized at hematology-oncology units have high rates of resistance in our hospital. Carbapenems remain the most effective group but resistance observed in two K.pnemoniae isolates is alarming. Isolation, identification and antibiotic susceptibility tests must be performed carefully for proper management of antimicrobials. Close monitorization of resistance rates should be performed and reported to clinicians in order to plan the empirical antibiotic use.

Abstract: 489 Poster: 396

ACUTE LEUKEMIA WITH TUBERCULOSIS

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Background: Tuberculosis (TB) is endemic in India (prevalence 5/1000 population). Endogenous reactivation leads to TB disease in 10% of infected persons. Chemotherapy reduces cell-mediated immunity (CMI). Thus increased risk of TB is expected in acute leukemia (AL), but there is limited literature on this association. Aim: To study the association of AL and TB in patients admitted for chemotherapy. Methods: Case records from January 2003 to December 2004 were analyzed retrospectively for AL cases associated with TB. Tuberculosis was considered to be associated with AL if it was diagnosed (a) 6 months before diagnosis of AL, (b) concomitantly or during treatment of AL or (c) within 6 months after completion of treatment for AL. Radiological data, Ziehl-Neelsen (ZN) staining for acid-fast bacilli (AFB), culture, polymerase chain reaction analysis and treatment response were considered for TB diagnosis. We did not culture for atypical mycobacteria. TB was managed with anti-tuberculous treatment (ATT)-Rifampicin, Isoniazid, Pyrazinamide and Ethambutol. Results: Of 130 AL patients [86 acute myeloid leukemia (AML) including acute promyelocytic leukemia (APML) and 44 acute lymphoid leukemia (ALL)], 9 patients (8 AML and 1 ALL, 8 males) had TB (Table 1). There was no statistically significant predilection for AML to develop TB (p=0.26). 4 cases (cases 1-4) with persistent fever were diagnosed to have TB after induction therapy. All 4 cases were in remission at the time of diagnosis of TB. Case 5 had fever in spite of improving neutrophil counts, and developed ascites, which showed AFB. He did not respond to ATT and died. Cases 6-7 developed AL within 2 months of diagnosis of TB. Case 8 was diagnosed concurrently with AL. He received chemotherapy after resolution of chest and abdominal lesions with ATT. Case 9 with APML developed chest wall abscess 2 months after completion of maintenance therapy with mercaptopurine, methotrexate (MTX) and tretinoin. Pus from the abscess stained for AFB. Except for case 5, all cases received subsequent chemotherapy with a maximum delay of 2 weeks. TB lesions did not recur with subsequent chemotherapy. None had a past history of TB. All were HIV negative. None had evidence of any other infection. Summary: Treatment with steroids and other immunosuppressive therapies like MTX result in defective CMI. Therefore an increased prevalence of TB is expected in ALL. However there appears to be a predilection for TB to occur in AML, a group of patients less likely to receive steroids or radiotherapy. The reason for this is not clear and could reflect monocyte / macrophage dysfunction. Our study shows that TB follows a benign course in AL with a good response to ATT. Except for one case, TB did not adversely affect outcome. Cases 1-4 recovered from neutropenia even in the absence of definitive treatment for TB. Chemotherapy did not adversely affect recovery from TB.

Abstract: 490 Poster: 397

POSTTRANSFUSION HEPATITIS IN PATIENTS WITH HEREDITARY HEMOGLOBINOPATHY AND ONCOHEMATOLOGICAL DISEASES

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Background. Transfusion of blood and plasma poses a threat of spreading of transfusion-transmitted infectious diseases. The most dangerous ones are viral hepatitis B and C due to their high ability to chronization and widespread occurrence. Prevalence of posttransfusion hepatitis among persons with multiple blood transfusions in many countries is 2 - 17 %. Hematological pa-

tients are particularly at risk because their treatment requires mass blood transfusion therapy. The prevalence of antibodies to HCV is directly related to the number of hemotransfusions in patients with sickle cell disease, homozygous ß-thalassemia and hemophilia. Aim. The purpose of this research was to examine the frequency of occurrence of viral hepatitis B and C markers among hematological patients. Methods. Blood serum from 3699 blood donors and 346 patients with various hematologic diseases was tested for HBsAg and antibodies to HCV with "Human" (Germany) open type immunoassay analyzer and test-system produced by the same company. ELISA positive sera were examined for HCV-RNA and HBV-DNA. Results. In blood donors a detectability of antibodies to hepatitis C was 3.8% and to HBsAg - 2.7%. Most frequently anti-HCV was found in thalassemia patients (81%). It once again confirms the fact that increase of blood transfusion loading increases the frequency of detectability of post-transfusion hepatitis. At the same time the marker of a hepatitis B (HBsAg) has been found only in one patient with homozygous ß-thalassemia who had had coinfection (HBsAg + anti-HCV). While the frequency of occurrence of anti-HCV among hemophilia patients was 71%, HBsAg was detected in only 2 patients. In the examined group of CML patients` frequency of anti-HCV and HBsAg markers were 13.3% and 6.7% respectively. In patients with AL antibodies to hepatitis C were detected in 8 patients and HBsAg in 3 patients. Analyses have revealed that in ELISA positive thalassemia and hemophilia patients the markers of hepatitis C (HCV RNA) and hepatitis B (HBV DNA) were found out only in the group of patients who had received blood transfusion therapy for 7 or more years. Summary/Conclusion. Frequency of occurrence of hepatitis C markers prevails both among donors and hematological patients. Since the prevention of blood transmissive infections should be done by blood transfusion facilities, it is necessary to introduce immediately at the blood transfusion centers and departments of Azerbaijan the system of "Quality Control" that has been working in other countries for some years. Frequency of detectability of the specified markers in hematological patients was in direct correlation to the duration of the hemotransfusion therapy. The goal should be thorough clinical and laboratory examination of donors of all categories using high-sensitivity test methods such as ELISA and Polymerase Chain Reaction (PCR) for V RNA and HBV DNA in plasma pools.

Abstract: 491 Poster: 398

INTRAVASCULAR CATHETER INFECTIONS AMONG HEMATOLOGY PATIENTS AT ANKARA UNIVERSITY HOSPITAL

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Intravascular catheters have been widely used among haematology patients for several purposes. Their infections (localised or systemic) should be monitored carefully for both therapeutic and preventive approaches. In this prospective study, clinical and microbiological features of catheters inserted to patients with haematological malignancies hospitalized at haematology ward and bone marrow transplantation units were evaluated. A total of 66 catheters (62/66 central, 4/66 long-term catheters, mean duration 26,9 days) from 56 patients (31 male, 25 female) were observed between Jan 2005 and June 2005. 28,8% (19/66) of catheters were taken out with suspicion of infection. Among the 19 suspected catheters 4 had catheter related bloodstream infection, 5 had localised infection, 1 had colonization and 9 had neither systemic or local infection, nor colonisation. 27,7% (18/66) of all catheters showed significant growth quantitatively (>1000cfu/ml). 19 bacteria were obtained from 18 significant growths. Gram positive bacteria were the major pathogens. (S.epidermidis 11, S.aureus 3, CNS 1, Corynebacterium spp.1, Enterococcus spp.1). K.pneumoniae (2) was the only gram negative bacilli. Catheter related bloodstream infections was observed in 9,1% (6/66) catheters. Catheter related bloodstream infections were due to S.epidermidis (4) and S.aureus (2). In 3826 catheter days, the overall central-vascular catheter related bloodstream infection rate was 1.58 per 1000 device days. Catheter related blood stream infection is low in our Haematology Unit probably related to a specialized catheter team and educated nurse care. Gram positive bacteria especially Coagulase negative Staphylococci are the major pathogens.

Abstract: 492 Poster: 399

BACILLUS SPP. INFECTIONS IN PATIENTS WITH HEMATOLOGIC MALIGNANCIES: A SINGLE INSTITUTIONAL EXPERIENCE

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Background. Over the past 2 decades, there has been a shift in the microbiology of infections in neutropenic febrile patients from predominance of gram-negative organisms to gram positive organisms and B. cereus has emerged as one of the "new" gram-positive pathogens to cause serious infection in patients with neutropenia. Aim. In this study, we present our experience in determining Bacillus spp. infections and epidemia in patients with acute leukemia and lymphoma. Methods. The Division of Hematology Department of Internal Medicine of Uludağ University Hospital (a 870-bed teaching hospital in Southern Marmara Region of Turkey) is a center that provides treatment for patients with hematologic malignancies and other hematologic diseases. We analyzed a total of 350 episodes of bacteremia that occurred among patients treated at our Hematology unit from April 2000 through May 2005. Results. Twelve episodes of Bacillus bacteremias occurred in 12 patients, and Bacillus bacteremias accounted for approximately 3.4% of all bacteremic pathogens isolated at this period. Of the 12 strains evaluated, 7 were Bacillus licheniformis, 3 were Bacillus cereus and 2 were Bacillus pumilus. Eight patients had acute leukemia and four had non-Hodgkin`s lymphoma. During bacteremic episodes all patients had fever (38.50C) and 9 cases were neutropenic (polymorphonuclear neutrophile count, less than 0.5x109/L), 9 had a central venous catheter, and 9 had recently received chemotherapy. Three episodes were presented with pneumonia (2 Bacillus licheniformis, 1 Bacillus cereus), 1 episode with severe abdominal pain and steadily deterioration of liver function (Bacillus cereus), 7 episodes with blood stream infection, and 1 episode with catheter related blood stream infection. Bacillus licheniformis was isolated from five patients who were hospitalized at the same time. This epidemia was found to be related to contaminated swab. Bacillus cereus and Bacillus licheniformis isolates were susceptible to cefepime, carbapenem antibiotics, aminoglycosides and vancomycin, but Bacillus pumilus isolates were resistant to all antibiotics except quinolones and vancomycin. All patients received appropriate antibiotics and all patients achieved clearing of the bacteremia. We observed death in two cases (B. cereus and B. licheniformis) that could be attributed to Bacillus spp infection. Conclusion. Despite Bacillus spp. are ubiquitous in the environment, Bacillus spp infections are not common in hematologic malignancy patients with neutropenia. However, Bacillus spp. may cause serious infections, may cause diagnostic and therapeutic dilemma, and high morbidity and mortality in these patients, and not only B. cereus but also B. licheniformis may be one of the emerging "new" gram-positive pathogens to cause serious infection in patients with neutropenia.

Abstract: 493 Poster: 400

ORAL GLUTAMINE SUPPLEMENTS IN THE PREVENTION OF CHEMOTHERAPY-INDUCED GASTROINTESTINAL TOXICITY IN CHILDREN WITH HEMATOLOGIC MALIGNANCY

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Glutamine (GLN) is a non-essential amino acid for nucleotide synthesis and rapidly dividing cells, such as enterocytes and gut-associated lymphoid tissue in the organism. Requirements increase during certain catabolic stress. The administration of oral GLN has become a conditionally essential nutrient during high dose chemotherapy and hematopoietic stem cell transplantation. Studies demonstrated that GLN supplementation may improve nitrogen retention, decrease clinical infection, and reduce the incidence and severity of mucositis. In this study, we aimed to evaluate the effect of glutamine administration on gastrointestinal (GI) toxicity in children with hematologic malignancy. Sixteen patients with acute lymphoblastic leukemia (ALL) were included in this study. The median age of patients was 7.0 years (range 3.0 to 14.6 years). All patients had two or more identical courses of chemotherapy scheduled because the study was designed with patients serving as their own controls. A total of 43 courses of chemotherapy administered to patients with GLN and also they had 41 courses of chemotherapy without GLN for their own controls. Patients received glutamine suspension (1 g/m2/dose twice daily) to swish and swallow on days of chemotherapy administration and 7 additional days. If the chemotherapy regimen includes

L-asparaginase (L-asp), patients did not receive GLN during the day of L-asparaginase administration and the day after because of drug efficacy. Wong-Baker Faces Pain Scale was administered to all children 1, 5 and 10 days after chemotherapy started and all patients were evaluated for development of mucositis at the same days. Patients were also evaluated for development of diarrhea, febrile neutropenia. The laboratory results were compared with complete blood count, transaminases, and kidney function tests before and after chemotherapy. Although there were no statistically differences in the incidence, severity or duration of GI toxicity, GLN supplementation significantly reduced both the development and the severity of oral mucositis in two patients. There was a significant difference in the face scale score between two groups ($p<0.05$). GLN supplements significantly reduced the incidence and severity of neutropenia ($p<0.05$). No difference was observed in the incidence of febrile neutropenia between GLN supplemented patients and controls. The levels of AST and BUN increased significantly 10 days after chemotherapy ($p<0.05$) in the control group who did not receive GLN but there were no differences between creatinine and ALT. We conclude that oral GLN supplementation in children with ALL during and after chemotherapy is feasible and possibly associated with better tolerance to treatment.

Abstract: 494 Poster: 401

IMMUNOSUPPRESSIVE AGENT ASSOCIATED POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME IN CHILDREN: REPORT OF THREE CASES

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Background: Immunosuppressive agents such as taclorimus and cyclosporin A (CsA) are the most popular drugs used in aplastic anemia and stem cell transplantation. Posterior reversible encephalopathy syndrome (PRES) is a clinico-neuroradiological disease entity represented by characteristic MRI findings of relatively symmetric bilateral subcortical/cortical hyperintensity in T2-weighted sequences, more often observed in pari-eto-occipital lobes, accompanied by clinical neurological alterations. Specific MRI technique, such as fluid attenuated inversion recovery sequences has improved the ability to detect subcortical/cortical lesions. Neuroradiological and clinical alterations are commonly completely reversible. We report three pediatric patients with PRES who fully recovered after seizure attack. Case 1: A 14-year-old girl with acute lymphocytic leukemia underwent a matched unrelated allogenic BMT. Fourteen days after stem cell infusion, she complained of generalized headache and nausea. At the time of the incidence, the patient`s blood pressure was 155/100 mmHg and serum level of taclorimus was 18.7 ng/L (therapeutic level 5-10 ng/L). She subsequently experienced a loss of consciousness and eyeball fixation.Taclorimus was stopped, and the patient was started on phenytoin. 1 day after the seizure attack, taclorimus was restarted with the dose of 0.07 mg/kg/daily. Two days later, the patient was neurologically completely recovered and phenytoin was stopped thereafter. Case 2: A 8-year-11-month-old girl received a sibling allogenic BMT as consolidation therapy for disseminated Ewing sarcoma. 36 days after stem cell infusion, the patient complained mild headache. At the time, the patient`s blood pressure was checked 150/95mmHg and CsA level 723 ng/L. She subsequently showed a loss of consciousness and partial clonic seizure on right arm. CsA was stopped, and she was started on phenytoin. 1 day after the seizure attack, CsA was replaced by taclorimus with the dose of 0.1 mg/kg/daily. On the next day, the patient fully recovered neurologically and phenytoin was then given orally. The patient stopped taking phenytoin 5 days after the seizure attack and recovered completely. Case 3: This 13-year-4-month-old boy was diagnosed as aplastic anemia, and subsequently treated with anti-thymocyte globulin, prednisolone and CsA. Eleven days after the treatment, he visited emergency room due to 40 minutes of generalized tonic-clonic seizure. Pupil light reflexes were absent and his mental status was comatous. His blood pressure at arrival was 165/105 mmHg and CsA level was checked as 450 ng/ L. Phenytoin was immediately given. CsA was stopped. 3 day after the seizure attack, he showed alert mental status. Next day, he proved to be completely normal during neurological examination and CsA was restarted at a dose of 0.75 mg/kg/daily. He received oxycarbazepine for 2 months after the event. No addtional anticonvulsant was given afterward.

Abstract: 495 Poster: 402

ASSESSMENT OF FEBRILE NEUTROPENIA EPISODES IN CHILDREN WITH ACUTE LEUKEMIA

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In this report 239 febrile neutropenia episodes in 82 acute leukemia cases treated with BFM treatment protocols between January 1995-February 2005 in Dokuz Eylül University Pediatric Hematology Department were overviewed retrospectively. Fortyfour (53.6%) of the patients were female and 38 (46.4%) were male. The median age was 6 years (range, 1-17 years). Seventy (85.3%) of the patients were ALL and 12 (14.7%) were AML. Number of episodes per patient was 2.9 (range 1-7 episodes). Febrile neutropenia episodes were observed during consolidation in 66.5% of patients, during induction in 22.2%, during maintenance therapy in 5.6% and at relaps in 5.4%. Infectious focus could be determined in 47.7 episodes and the most identified focuses were mucositis (15.5%), skin and soft tissue (12.6%), pneumonia (6.3%), and gastroenteritis (5.4%). The first line empiric antibiotic choices were carbapenem+amikacin in 38.9% episodes and carbapenem+amikacin+glycopeptid in 18.4% episodes. Causative microbiologic agent could be demonstrated in 31.4% episodes. Mostly identified microbiologic agents were coagulase negative Staphylococcus, Escherichia coli, and Klebsiella pneumonia. Fever resolved after mean 5.27 days (range, 0-39 days) and mean antibiotic administration time was 12.68 days (range, 2-141 days). Granulocyte colony stimulating factor (GCSF) was used in 44.4% episodes. Use of GCSF shortened the duration of neutropenia, it did not show statisically significant effect on fever resolution, and antibiotic administration. The duration of neutropenia, fever resolution and antibiotic administration were significantly longer in AML patients than ALL patients. Out of 82 cases, nine (10.9%) died during a febrile neutropenia episode, three of them had bone marrow relapse and were not in remission at this time.

Abstract: 496 Poster: 403

PROSPECTIVE EVALUATION OF CIRCULATING LEPTIN LEVELS IN ADULT PATIENTS WITH FEBRILE NEUTROPENIA

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Infection is the most common life-threatening complication of chemotherapy-induced neutropenia. Since clinical signs of a bacterial infection are often limited, specific markers of infection are needed in cases of febrile neutropenia. More recently, several studies showed that the increased leptin circulating levels during infection and inflammation suggesting its participation in the immune response and host defense mechanisms. The aim in this study was to assess the diagnostic value of circulating levels of leptin in predicting the clinical severity of febril neutropenic attacks, and to compare it with that of C-reac-tive protein. Between February 2003 and March 2005, 32 adult with acute myeloid leukemia patients were included to the study. A total of 51 episodes were evaluated (10 episodes documented microbiological infections, 17 were clinically documented infections and without bacteriemia and 24 were fever of unknown origin). The median leptin value was lower in documented microbiological infections (1.11+/-0.42 ng/ml) when compared with both clinically documented infection (3.18+/ 1.51 ng/ml) and with fever of unknown origin (11.72+/-3.29 ng/ml). However there was not statistical difference between bacteriemic and non-bacteriemic episodes (P= 0.76 using the Mann-Whit-ney test). CRP median values were 159 ± 27.37 mg/dl for patients with documented microbiological infections, 122.00+/-13.81 mg/dl for patients with clinically documented infection and 70.50±12.55 mg/dl for patients with fever of unknown origin. For CRP concentrations, there was statistical difference between bacteremic and non-bacteremic episodes (p=0.002). Although we could not find statistical difference between bacteremic and non-bacteremic episodes we conclude that decreased leptin levels may be useful to distinguish causes of fever in neutropenic patients.

Abstract: 497 Poster: 404

SERUM PROHEPCIDIN LEVEL IN FEBRILE NEUTROPENIC PATIENT WITH ACUTE MYELOBLASTIC LEUKEMIA

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Hepcidin is a recently discovered cysteine-rich cationic antimicrobial peptide made in the liver and distributed in plasma and excreted in urine. Infections secondary to neutropenia are the major causes of mortality and morbidity in acute leukemias. Elevated serum CRP and some cytokines level had been demonstrated to be the predictors of infection previously. In the present study, we assessed serum prohepcidin levels in acute myeloblastic leukemia (AML) patients before chemotherapy and febrile neutropenic periods, to find out if they might be the predictor of infection. This prospective study was performed at the İnönü University Department of Hematology in Malatya between February 2003 and March 2005. A total of 30 febrile episodes occurring in 19 patients with a confirmed de novo AML and chemotherapy-induced neutropenia were admitted. There were 9 males and 10 females, with a median age of 41.42 years (17-73 years). All of the patients were treated with induction and/or consolidation chemotherapy. Blood samples were centrifuged, and the plasma was collected and frozen at -70°C until measurement. Serum prohepcidin concentration was determined using an ELISA kit as described previously (DRG instruments, Marburg, Germany). An automatic Behring Nephelometer was used to measure serum C-reactive protein concentrations. The laboratory results are shown in Table 1. In our study, serum prohepcidin levels were increased in febrile neutropenic period compared to pre-chemotherapy and this difference was statistically significant ($p<0.0001$). We also found that CRP levels increased significantly in febrile neutropenic period compared to pre-chemotherapy period ($p=0.001$). These results suggest that elevated serum prohepcidin level compared pre-chemotherapy to febrile neutropenic period might be the predictor of infection.

Abstract: 498 Poster: 405

IDENTIFICATION OF MICROORGANISMS ISOLATED IN EPISODES OF FEBRILE NEUTROPENIA AND DETECTION OF THEIR ANTIBIOTIC SUSCEPTIBILITY

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In this study, causes of infection and the antibiotic susceptibility of the isolated bacteria to different antibiotics in 58 episodes of febrile neutropenia in 42 patients with hematological malignancies who were admitted to our Division of Hematology between January 2004 and August 2004 were prospectively evaluated. They were 23 males and 19 females, ranging in age from 18 to 76 years (median: 30, 36 years). Gram negative rods, gram positive cocci and fungi accounted for 55.81 %, 34.89 % and 9.30 % of the isolated pathogens. Most commonly isolated bacteria were as follows: Escherichia coli in 16 (41.02%) episodes coagulase negative staphylococci in 7 (17.94 %) episodes, Klebsiella pneumoniae in 6 (15.38 %) episodes and S.aureus in 4 (10.35 %) episodes. Among gram negative rods 4 % of the strains were resistant to imipenem, 8 % to meropenem, 12.5 % to levofloxacine, 12.5 % to amikacin, 21 % to gentamicin, 25 % to cefoperazone - sulbactam, 25 % to ciprofloxacine, 29 % to ceftriaxone, 29 % to cefepime, 34 % to ceftazidim, 34 % to piperacillintazobactam and 50 % to ampicillin- sulbactam.Twenty-one percent of gram negative rods, 25 % of E.coli and 17 % of K.pneumonia were extended spectrum ? lactamase positive. Indiciuble ? lactamase was detected in a strain of Pseudomonas aeruginosa only in one (4 %) episode. Among gram positive cocci methicilline resistance was found in 71.42 % of coagulase negative staphylococci and 50 % of S.aureus strains. Resistance to glicopeptide antibiotics was not found.

Abstract: 499 Poster: 406

VARICELLA ZOSTER VIRUS INFECTIONS IN CHILDREN AFTER HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Background: The incidence of varicella zoster virus (VZV) infections in children following hematopoietic stem cell transplantation (HSCT) varies from 23 % to 67 %. The reported frequency of VZV infection at 6 months post-trans-plant has been reported to be 20 % for recipients of autologous and 30 % for allogeneic HSCT. Aim: We conducted a retrospective review of the case records for zona zoster (ZZ) or chicken pox (CP) infections in post-transplant patients. Out of 98 patients who underwent allogeneic HSCT at Hacettepe University İhsan Doğramacı Children`s Hospital, 22 patients developed VZV infection. The characteristics of ZZ and CP infections in those HSCT recipients were determined. Methods: VZV infection was defined as the presence of the characteristic vesicular skin lesions on an erythematous base and/or healing with crusts in a dermatomal or generalized cutaneous distrubition. The diagnosis of VZV was made using clinical criteria in all cases. Results: Among 98 patients, 48 received HSCT for a malignant disease 16 of whom developed ZZ (n=12) or CP (n=4) disease whereas only 6 of 50 patients with nonmalignant diseases developed VZV infection post-transplant (p=0.022). The median age of ZZ or CP infection documented in post-transplant 22 patients was 8.0 (range 3.0-20.0) years,and there were 8 female,14 males. The median time of onset after HSCT was 8.7 months (1.6-25.8) and 9.3 (6.0-10.0) for VZV and CP patients respectively. The majority (13/18 for VZV and 3/4 for CP) of cases occurred within the first year after BMT. No patient developed VZV infection while receiving acyclovir or gancyclovir prophylaxis. HLA compatibility was 6/6 in 19 (%86,4) of patients and 5/6 in the rest (%13,6). Two patients were receiving methylprednisolone one month prior to the day of eruption. Ten patients (45.5%) had received intravenous immunoglobulin treatment and 11 patients (50%) were on cyclosporine A treatment two months prior to eruption. A single dermatome was affected in all patients who developed zona. The distribution of affected dermatomes were, cervical in 8 (%44,4), sacral in 5 (%27,9), thoracic in 3 (%16,6) and lumbar in 2 (%11,1) patients. Two patients developed post-herpetic neuralgia. There was one death directly attributable to CP pneumonia. Relapse occurred in 6 patients following VZV infection and all died of progressive disease. Mean relapse time from HSCT was 10,7 months and relapse time from zona was mean 5,95 months. Relapse rate of patients with malignant disease who developed VZV disease was 6/16 whereas in those without VZV infection was 10/23, when deaths within posttransplant third months (n=9) were excluded (p=0.96). Conclusion: Patients with malignant disorders tend to develop more VZV infections in the post-transplant period when compared with those with non-malignant disease. However, the statistical significance could be due to the low number of patients in each group and must be evaluated in further studies.

Abstract: 500 Poster: 407

TRANSMISSION OF VIRAL INFECTIONS BY BLOOD TRANSFUSION AND SURVIVAL OF HIV SEROPOSITIVE THALASSAEMIC PATIENTS IN GREECE

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Background Chronic blood transfusion support is the basic element of treatment of patients with thalassaemia major. Patients` high exposure to donor blood and other factors such as the prevalence of infectious markers in donor blood, the quality standards applied in the blood establishments, the implementation of prevention policies and other public health measures, all affect the rate of viral infections in this population of patients. Aims To study the prevalence of transfusion transmitted viral infections in thalassaemia patients and to estimate the residual risk for HIV and the rate of HCV infection in blood units transfused to these patients. Methods Serological data for HBsAg, anti-HIV, anti-HCV and anti-HTLV were studied using immunoenzymatic methods in 1345 patients (51% females, mean age 23 years) over the period 1987-2003. SKAE collected estimated data on the residual risk for the transmission of HIV during the periods 1987-1999 and 1999-2003 and rates of HCV infection in blood units transfused. Genotype analysis of HCV was also performed in the patients. HIV seropositive patients were studied in a ten-year-follow up. Survival after infection was analyzed in relation to serum ferritin, iron chelation therapy with Desferioxamine and anti-viral treatment with AZT. Results The estimated residual risk for the transmission of HIV in this group of patients is 1:1,527,000 blood units in the period 1987-1999 and 1:1,752,000 blood units in 1999-2003 (Table 1). Data on HIV positive patients showed that the mean age at detection of anti-HIV was 12.1±7.1

years and 63% progressed to AIDS about 4 years later (at mean age 16.3±8.5 years). Half of them died about 5 years after diagnosis, mostly in CDC disease stage C3. Retrospective analysis of stored serum samples showed that infections occurred in 1983 to 1984. The longest survival after infection was 12 years and the average age of survivors 22.6 years. Among prognostic factors, low serum ferritin and effective iron chelation with Desferioxamine were statistically significantly associated with survival from the time of detection to death. Conclusion Developments in blood screening and other safety measures in transfusion have improved the well being and the survival of thalassaemic patients in Greece. The implementation of Nucleic Acid Technologies in blood screening will further reduce the residual risk of transfusion transmitted infections in thalassaemic and other groups of transfused patients.

Abstract: 501 Poster: 408

EPIDEMIOLOGY OF BACTERIAL INFECTIONS IN FEBRILE NEUTROPENIC PATIENTS HAVING HEMATOLOGICAL MALIGNANCIES IN MARMARA UNIVERSITY HOSPITAL, ISTANBUL, TURKEY

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Infection is the most common complication of chemo-therapy-induced neutropenia. The epidemiological pattern of bacterial infection in patients with neutropenia undergoes periodic changes. Detection of these epidemiological shifts is crucial for the success of empirical antibiotic therapy, which is a major determinant of survival among patients with neutropenia. A retrospective study was conducted to identify the epidemiology of bacterial infections in febrile neutropenic patients having hematological malignancies in Marmara University Hospital between January 2000 and April 2005. Eighty six documented infections were observed in 67 febrile neutropenic patients. Mean age was 37,5 (17-83). Male to female ratio was 1.2. The distribution of the patients according to malignancies were; 56% Acute Myeloid Leukemia, 24% Acute Lymphoblastic Leukemia, 6% Multiple Myeloma and 14% other malignancies. (Non-Hodgkin Lymphoma, Hodgkin Lymphoma, Chronic Myeloid Leukemia, Chronic Lymphocytic Leukemia, Myelodysplastic Syndrome). Forty-nine of 86 documented infections occurred in the early period and the rest 37 were breakthrough infections. Seventy-three percent of early infections were bloodstream infections and half of the pathogens were gram(+) bacterias. The most commonly isolated Gram(+) pathogen was S.aureus, whereas the most commonly isolated Gram(-) pathogen was E.coli. The second leading site of bacterial infections in the early period was urinary tract. The most commonly isolated pathogen was E.coli in urinary tract infections. In the early period infections, pathogens were mostly gram(-) bacterias, accounting for 53% of infections. Bloodstream infections were the most common type amongst breakthrough infections (77%). Considering the breakthrough infections, the most commonly isolated pathogens were gram(+) bacterias (55%) and enterococi was the leading grown pathogen. ESBL (extended spectrum beta-lactamase) producing Gram(-) bacterias accounted for only 5% of early infections while they were responsible for 21% of breakthrough infections. Methicillin resistance in staphylococci isolated from early infections were 44%. However, 66% of staphylococci isolated from breakthrough infections were methicillin resistant. In summary, we found that in our hospital gram(+) and gram(-) infections occurred nearly equally (53% gram(-) bacterias, 47% gram(+) bacterias) in febrile neutropenic patients. Bloodstream infections are the first and urinary tract infections are the second most frequent infections in febrile neutropenic patients. Our results are in accordance with the literature.

Abstract: 502 Poster: 409

COMPLICATIONS OF RIGHT ATRIAL CATHETERS IN CHILDREN WITH HEMATOLOGIC MALIGNANCY

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Implanted subcutaneous central venous port catheters facilitate the administration of medications, blood products, and parenteral nutrition

and are frequently used in children with malignancy. Despite their benefits, there are complications of indwelling catheters, including occlusion, dislodgement, leakage and catheter related infection. In this study, we aimed to determine the frequency of mechanical and infectious complications of right atrial catheters (RACs) in our pediatric hematology unit. The records of all patients with RACs were reviewed to obtain data on primary diagnosis, duration of catheter, mechanical complications of catheter, the frequency and etiology of catheter infections. From October 1999 to date, all patients diagnosed with hematologic malignancy who required port catheters were included in this study. A total of 78 catheters were placed in 76 children with acute lymphoblastic leukemia (n:63), acute myeloid leukemia (n:10), juvenil myelomonocytic leukemia (n:1), biphenotypic leukemia (n:1) or myelodysplastic syndrome (n:1). The median age of patients was 9.2 years (range 1.4 to 19.7 years). Induvidual catheters were in place for a median of 680 days (range 14 to 1932 days), with total experience of 61070 catheter days. Catheter related infection was detected in 66 catheters (1.08 episods per 1000 catheter days), twenty-one were sepsis and the others were catheter infections. Catheter colonization was detected in 18 catheters (23%). Eleven of the 78 catheters (14.1%) were affected by mechanical complications. Four catheters were complicated by leakage and all of them were removed. Occlusion affected 7 catheters (8.9%), five of them were cleaned by heparin, one of them was cleaned by urokinase. Thirty-three catheters (40.8%) are still in use. The reasons for catheter removal were infection, leakage and exit-site infection in six (7.6%), four (5.1%), six (7.6%) cases, respectively. Thirteen (16.6%) catheters were removed electively. Sixteen catheters (20.5%) were removed at death. In conclusion, the frequency of infections and non infections complications of port catheters in our center were comparable the results of other centers. We believe that careful attention to catheter care and training of the nurses resulted in low rates of complications of RACs in our hematology unit.

Abstract: 503 Poster: 410

IMIPENEM VERSUS PIPERACILLIN-TAZOBACTAM FOR EMPIRICAL ANTIBIOTIC THERAPY IN PATIENTS WITH PERSISTENT FEVER AND NEUTROPENIA

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Aim: Patients with persistent fever and neutropenia and hemotological malignencies often receive empirical therapy with antipseudomonal antibiotics. Our aim is to understand the side effects and effectiveness of the antibiotics by the means of comparing imipenem with pip-eracillin-tazobactam, which are the most recommended ones in the guidelines for the patients with hematological malignencies classified in high-risk group. Method:After we documented fever over 38.3 0 C or 38 0 C lasting more than one hour in patients with hematological malignencies (Acute leukemia, chronic leukemia, Hodgkin`s Disease, Non-Hodgkin`s Lymphoma, Multiple Myeloma, Myelodisplastic Syndrome, Chronic Myeloproliferative Disease) and persistent fever and neutropenia, we have examined the patients, made proper sampling for the cultures and started antibiotic treatment. Patients were seperated into two groups; in the first group imipenem+aminoglycoside and in the other piperacillin-tazobactam+aminoglycoside were used. Patients with severe renal or liver diseases or that are pregnant or smaller than 16 years old or having a story of allergic reaction for any of the drugs were excluded. Afterwards, response to infection, duration of fever, clinical and laboratory findings were compared. In case of necessity, the antibiotics were changed according to the results of the cultures. Results: Actually eight neutropenic attacks were observed. Four of them were treated with imipenem+ aminoglycoside and the others were treated with piperacillin-tazobactam+ aminoglycoside. Six of the eight patients had Acute Myloid Leukemia, one of them had Acute Lymphoblastic Leukemia and the other had Multiple Myeloma. In both of groups the ratio of men to women was 1/3. The number of the febrile days were 12, 12, 5, 5 (median 8.5) for the imipenem group and 4, 3, 1, 9 (median 3.5) for the piperacillin-tazobactam group. Durations of neutropenia were 20, 28, 18, 26 days (median 23 days) for the imipenem group and 19, 13, 12, 5 days (median 12.5 days) for the other group. In one of the patients treated with imipenem we have documented pseudomembranoseenterocolitis, although it should be noted that at the same time vancomycine was used for the patient. In another patient treated with imipenem we have documented coagulase negative staphyloccus in blood culture, however we have not changed the antibiotic regimen because the microorganism was sensitive to the antibiotic used. No side effects were

observed in the pip-eracillin-tazobactam group. Our study is still in progress, so far we observed that both of antibiotics are secure for the patients with persistent fever and neutropenia.

Abstract: 504 Poster: 411

NEUTROPENIC ENTEROCOLITIS: A SERIOUS COMPLICATION DURING THE TREATMENT OF ACUTE LEUKEMIAS

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Background: Neutropenic enterocolitis (NE), also known as typhlitis, is an inflammatory process characterized by intramural infection, frequently localized to the terminal ileum and cecum which occurs in neutropenic patients. It is a devastating disease process, and optimal management has been controversial. Aim: To describe the presenting features and outcome of 11 patients with NE diagnosed in our Instution from November 2004 to June 2005. Methods: Neutropenic patients with fever, diarrhea, and abdominal pain after intensive chemotherapy for hematologic malignancies were diagnosed as having NE. The diagnosis of NE was also confirmed by abdominal ultrasound or computed tomography. The nature of the clinical syndrome and controversies regarding management are discussed. Results: Nine of the 11 patients had acute myeloblastic leukemia, and two had acute lymphoblastic leukemia as a primary hematologic malignancy. Median age was 43 years (range:29-56). Neutropenic enterocolitis occurred 12-18 days (median 13) after initiation of chemotherapy, and the median neutrophil count at the time of diagnosis was 2/mm3 (range:0-28). All of the patients presented a typical picture of NE: seven of them died because of septic shock; four had subileus; two had gastrointestinal bleeding; and one had hepatosplenic candidiasis. In nine cases, a surgical opinion was required however none of these patients were operated on. Conclusion: Retrospective analysis of our patients suggests that NE is a life-threatening complication during the treatment of acute leukemias, and a close collaboration between the hematologist and the surgeon may provide guidelines for behavior in such cases.

Abstract: 505 Poster: 412

ALLOGENEIC STEM CELL TRANSPLANTATION WITH SECONDARY PROPHYLAXIS WITH LOW DOSE LIPOSOMAL AMPHOTERICIN B IN PATIENTS WITH PREVIOUS PULMONARY INVASIVE FUNGAL INFECTIONS

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Patients with hematological malignancies diagnosed with invasive fungal infections (IFI) have been considered to be at high risk for reactivation of fungal infection during subsequent stem cell transplantation (SCT). Due to a high transplant related mortality, these patients are usually excluded from SCT protocols. Here we report 5 patients with hematological malignancies who underwent allogeneic SCT after being treated for proven or possible fungal infections. Five adult patients (4 male and a female) with a median age of 22 (range 18-32), with hematological malignancies with previous pulmonary fungal infections (3 proven and 2 possible) were retrospectively analysed. Underlying hematological malignancies were AML in 3 patients (all in CR; 1st, 2nd and 3rd CR each), Hodgkin`s disease in 1 patient (relapsed, refractory) and Philadelphia chromosome positive ALL in one patient. The patients were treated with myeloablative (3/5 patients with Bu/Cy, 1/5 patient with TBI/Cy) and reduced intensity (1/5, Bu/Cy/Fludarabine) conditioning and received allogeneic stem cells from their HLA matched siblings. Candida albicans was the fungal pathogen in the three patients with proven IFI, one of them being transplanted after surgical resection of the infected brochiectatic area. None of our patients had active fungal infection at the time of SCT. The patients were started on liposomal amphotericin B 1mg /kg, with conditioning and were followed by galactomannan antigenemia and panfungal PCR, with the development of febrile neutropenia and were switched to therapeutic doses of liposomal Amphotericin B, 5mg/kg within 48 hours if they had persistent fever despite empiric antibacterial treatment. One of the five patients received full dose antifungal therapy for proven fungal infection with positive culture for Candida albicans in the bronchoalvelar lavage (BAL) and nodular lesions with ground glass opacity in HRCT of thorax. Other 3 patients

also recieved full dose antifungal therapy for possible fungal infection (one with positive Candida PCR in BAL and 2 patients with radiological evidence of IFI in HRCT-thorax). One patient with previous possible fungal infection responded to broad spectrum antibiotics for neutropenic fever so that antifungal prophylaxis continued with low dose. None of our patients had a positive blood galactomannan antigenemia and panfungal PCR, except one patient with positive Candida PCR in BAL. The patients were followed median 130 days (range 52-388) post transplant, 4 of them survived the first 100 days and the other patient is on day +52. In conclusion; secondary prophylaxis with low dose liposomal amphotericin B allows patients with previous invasive fungal infections to be transplanted safely with an early switch to therapeutic doses. Patients should be monitored closely with clinical, laboratory, radiologic and bronchoscopic examinations to detect fungal reactivation on time which still seems to be a major concern.

Abstract: 506 Poster: 413

SPECTRUM AND RESISTANCE PROFILES OF PATHOGENS ISOLATED FROM STERILE SAMPLES IN HEMATOPOIETIC STEM CELL TRANSPLANT RECIPIENTS

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Introduction/objectives: We conducted a study to determine the spectrum, frequency and resistance patterns of microorganisms isolated from sterile samples in hematopoietic stem cell transplant recipients during a 23 month period. Methods: Sterile samples delivered to our clinic`s laboratory (Gazi University Faculty of Medicine, Infectious Diseases Clinic`s laboratory) between September 17 2003-May 31,2005 were analyzed. All samples were taken from patients during febrile neutropenic episodes. Susceptibility tests were performed by Kitby-Bauer disc diffusionusing the NCCLS guidelines. Results: A total of 183 microorganisms were isolated from sterile samples(blood, urine, catheter tip,lung bipsy material). Gram positive pathogens represented (n=121) 66.1% and gram negatives represented (n=60) 32.8 % of the isolates. Coagulase negative staphilococci (CNS) (n=96, 52 %) were the most isolated microorganism, followed by E.coli (n=30,16.4 %). We had only two Candida spp. isolates in urine samples, there was no Candida spp. isolated from blood samples. Methicillin resistance rates rates for CNS and S.aureus were 91.6% and 57.1%. None of the tested Staphylococci and Enterococci were found to be resistant to vancomycin. The resistance rates of E.coli tested for amicasin/gentamycin, cefepime and quinalones were 13.3%, 20% and 66,6% respectively. Imipenem or piperacillin/tazobactam resistance was not detected in the isolated E.coli strains. Conclusion: At our institution gram positive microorganisms are the most important isolates. Using intravascular catheters predisposed to gram positive infections. Methicillin resistance rates of staphylococci tought to be result of long hospitalisation and broad spectrum antibiotic used in this patient population.

Abstract: 507 Poster: 414

THE NUMBER OF TAKEN CULTURES, THE POSI TIVITY RATIO, TYPE OF ISOLATED PATHOGENS AND ITS ANTIBIOTIC SUSCEPTIBILITY IN FEBRILE NEUTROPENIA DURING 2000-2004 IN A PEDIATRIC HEMATOLOGY-ONCOLOGY DEPARTMENT

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Infections are the most important complication of patients receiving chemotherapy for neoplastic diseases. Morbidity and mortality remain high, as well as the potential impact of these complications on the projected dose-intensity of chemotherapy. With the aim of performing an evaluation of microbiological information including the number of taken cultures, the positivity ratio, type of isolated pathogens and its antibiotic susceptibility pattern, we conducted a 4 year retrospective documentation in Pediatric Hematology-Oncology Department of Cerrahpaşa Faculty of Medicine. A total of 743 blood cultures were taken and in 119 (16 % of them) a pathogen was isolated. The microorganisms isolated were Gram positive cocci in 62 %, Gram negative rods in 34 % and fungi in 4 % of positive cultures. In cultures other than bloodstream, aetiologic pathogens were Gram positive cocci (31 %), Gram negative

rods (48 %) and fungi (21 %). The antibiotic susceptibility pattern of the isolated pathogens, meticillin resistance in S. aureus, penicillin resistance in alfa-hemolytic streptococcus and S. pneumoniaea and third -generation cephalosporin resistance in Klebsiella, are found higher ratios than which are excepted but the number of isolated agents are not enough to reach such a reliable result. At last antibiotic resistance is not a challenge in our center yet.

Abstract: 508 Poster: 415

CAPSOFUNGIN VERSUS LIPOSOMAL AMPHOTERICIN B FOR EMPIRICAL ANTIFUNGAL THERAPY IN PATIENTS WITH PERSISTANT FEVER AND NEUTROPENIA

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Aim: In case of fever more than five days during antibiotic treatment, patients with persistant fever and neutropenia should receive empirical therapy wtih conventional or liposomal amphotericin B for the prevention and early treatment of invasive fungal infetions. We have compared our results with Amphotericin B lipid complex and Capsofungin. Method: If patients receiving antipseudomonal antibiotic and glicopeptide had fever on the fifth day of the treatment, they were assigned to receive either intrevenous caspofungin (70 mg on day 1 and 50 mg once daily thereafter) or liposomal amphotericin B (3.0 mg per kilogram of body weight daily). We have changed antifungal agent if the fever and the signs of the infection still carry on more than 48 hours. We also changed the antifungal agent for the patients who had allergic symptoms or severe side effects due to the treatment. Totally six patients were treated with Amphotericin B lipid complex and Capsofungin in turn. Results: In one of the patients receiving Amphotericin B lipid complex (Abelcet) although clinical improvement was made, severe allergic reaction occured. The agent was stopped and liposomal amphotericin B (AmBisome) was given instead. For the remaining two patients, clinical improvement was succeeded. In two of the patients using Capsofungin, no clinical healing could be succeeded and liposomal amphotericin B was used instead which leaded to clinical improvement. No fungal agents were documented in cultures of the patients. Only in one of the patients, yeast in the faeces was observed. In the group using Amphotericin B lipid complex, we have documented severe hypopotasemia and high dose potassium replacement was needed. No side effects were observed due to Caspofungin. Our study is still in progress so far we observed that Amphotericin B lipid complex is more effective but has much more side effects.

Abstract: 509 Poster: 416

STREPTOCOCCUS PNEUMONIAE COLONIZATION DURING AN APLASTIC PHASE AFTER STEM CELL TRANSPLANTATION

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Objective: the aim of this studie is to determine incidence of pneumococcal colonization in patients treated with stem cell transplantation. Material and method: during a 5 years period in our department we have treated 90 patients with different hematological malignant diseases with stem cell transplantation. Anti-infective protocol during an aplastic phase consisted ciprofloxacin (500mg/12h), fluconazole (200mg/12h) and acyclovir (200mg/6h) until neutrophil recovery. We are performed microbiological monitoring tree times a week obtained hemoculture, upper and lower respiratory tract smear, urinoculture, and culture from central venous cateter. Results: gram-positive cocci were predominantly isolated bacteria, especially coagulasa negative staphylococcus. From day +12 we have isolated streptococcus pneumoniae from sputum in 30 (25%) of patients, and from nasopharyngeal smear in 6 (15%). We have clinical signs for pneumonia in 6 (15%) patients. Discussion: Use of quinolones reduces the incidence of gram-negative bacillary infections but increases the frequency of infections caused by streptococci and staphylococci before marrow engraftment. Death associated with streptococcal bacteriemia is of concern and may justify the use of penicillin for gram-positive prophylaxis.

Abstract: 510 Poster: 417

THE VALUE OF SERUM GALACTOMANNAN ENZYME IMMUNOASSAY TEST FOR DIAGNOSIS ASPERGILLOSIS IN FEBRIL NEUTROPENIC PATIENTS WHO GAVE NO RESPONSE TO EMPIRICAL ANTIBIOTIC THERAPY

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Prolonged neutropenia is a major risk factor for invasive fungal infection. In this study our aim was to investigate the value of the detection of soluble Aspergillus antigens (galactomannan) in the serum to improve diagnosis of Aspergillus infections. From March 2004 to June 2005 a total of 35 hospitalized patients (16 male, 19 female, median age: 40) were included in this study. A total of 60 serum specimens were taken from patients with hematological malignancies when they developed antibiotic resistant neutropenic fever during chemotherapy. The Platelia Aspergillus Enzyme Immunoassay (EIA) kit was used to detect the circulating galactomannan (Bio-Rad, cat. n. 62797) of Aspergillus species. High resolution computed tomography (HRCT) of the chest was taken within 96 hours after beginning empirical broad spectrum antibiotic therapy. Eleven serum samples (18,3 %) from 7 (20 %) patients with acute leukemia were positive for Aspergillus species by EIA. HRCT of the chest showed the findings of fungal infection (halo and consolidation) in two patients who had positive serum samples and one of them had positive microscopy and culture of Aspergillus species from sputum. One patient with AML had two positive samples for the antigenemia but HRCT of her chest revealed non-specific pulmonary infection. HRCT supported the fungal infection in one patient who had positive result for antigenemia only once, but in another patient with one positive result HRCT revealed non-specific pulmonary infection, not a fungal one. We concluded that the serum galactomannan antigenemia test done every few days could be helpful to the radiological examinations for diagnosis invasive aspergillosis.

Abstract: 511 Poster: 418

UNCOMMON FUNGAL INFECTIONS IN NEUTROPENIC PAEDIATRIC PATIENTS WITH CANCER

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Invasive fungal disease in an important cause of mortality among immunosuppressed patients, receiving chemotherapy. We report 6 cases of uncommon fungal infections that occurred in our department over a 10 year period. The patients were 3 boys and 3 girls aged 4 - 15 years, 3 ALL, 1 NBL, 1 NHL, 1 S. Ewing`s sarcoma. All patients were neutropenic after chemotherapy. A boy with B - ALL developed pulmonary zygomycosis of Cunninghamella Bertholletiae isolated from bronchoalveolar lavage fluid. A boy with NBL and a girl with ALL developed Acremonium. A boy with T-ALL developed trichosporonosis from Trichosporon Asahii (fever, fungemia, pulmonary invasion and cutaneous infection). A girl with Burkitt NHL developed fungemia from Candida Famata isolated from multiple blood cultures taken from both the Hickman catheter and peripheral veins. A girl with Ewing`s sarcoma developed Candida Glabrata isolated from multiple urine cultures. Three of the patients were treated with liposomal Amphotericin B (LAMB) 5mg/Kg/ d, 2 patients with combined LAMB and voriconazole and one with LAMB initially and subsequently voriconazole. Three patients were treated successfully. The patient with C. Bertholletiae died of invasive zygomycosis, the patient with disseminated trichosporonosis died of gram - negative sepsis that subsequently developed and the patient with C. Glabrata died of her disease. Immunosuppressed patients receiving chemotherapy sometimes present with fungal infections due to less common pathogens. Suc cessful management usually warrants aggressive sys temic antifungal therapy.

Abstract: 512 Poster: 419

INVASIVE FUNGAL INFECTIONS IN CHILDREN`S ACUTE LEUKAEMIAS

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Invasive Fungal infections in Cnildren`s Acute Leukaemias. G.Meskhishvili, K. Chikvaidze, T.Javakhadze, Georgian Fund of Pediatric Hematology, Children`s Oncol/Hematology dept, Tbilisi, Georgia Background: Invasive fungal infection remains a major complication in neutropenic leukemia patients, during chemotherapy. The increased risk of /IFI/ fourfold rises in longed neutropenia, for less than 3 weeks. Methods: 62 consecutive children /1996 -2003/ aged 2 - 16y with newly diagnosed acute leukemias /ALL 42,AML 20 pts/ were evaluated for occurrence of fungal infection. Patients treated according ALL 90, AML 93BFM protocols.The following parameters in neutropenic FUO wereevaluated: clinical signs of infection, blood, sputum,mild tissue bacteriology,serological analysis of antifungal /Candida, Aspergillus/ antibodies titer /several times/ by IFA inneutropenia, after it recovery and failure of antibiotics regimes, chest Xray, CT, AU, and serum LDH. The sites of infection observed were hepar/1/, spleen/1/, lungs/8/, kidney/1/ lingua /1/. There were 23 pts of IFI,mucosal 29 and 10 were negative. Serology reve aled 37 pos cases, neg 16. Candida serologically documented in 17 cases, Aspergillus in 20 pts, both antifungal AB titer markedly increased in 7 pts.4pts had undergo bronchoscopy, 1 hepar biopsy, CT in 8pts, AU in all pts. 3 times autopsy finding confirmed the presence of fungal infection. 26 pts have lung infiltrates at febril neutropenia.Results:An oral antifungal prophylaxis with AmphoB+Fluconazol used in all patients.The initial treatment choise was AmphB iv 0,5-1mg/kg given to 37 pts, Orungal(Itraconazole)200- 400mg/kg given to 25pts after failure of Fluconazol + AmphB therapy. 7pts died with fungal sepsis.Patients who have lung infiltrates were treated with Amp B 1mg/kg + Orungal p.o.400-600mg/ kg/d. Particularly marked one case with 9 y old boy (ALL)who suspected to fungal infection at the end of supportive therapy, when initial 25d course AmB iv 1mg/kg and Orungal 600mg/ d failed. CT/AU showed unknown massive infiltrates in lung, kidney, nasal sinus, spleen and hepar (Figure 1). Curable effect developed only Vfend (Pfizer) 6mg/kg/ dX2, 22d administration. There were 4 times more increased AB titer in AML pts, as compare with ALL pts, that may be associated with more intensive chemotherapy and issuing from this it may have higher risk. Figure 1.

Abstract: 513 Poster: 420

OSTEOLISIS OF THE KNEE BONES IN A PATIENT WITH NON-HODGKIN`S LYMPHOMA: A CASE OF ARTICULAR ASPERGILLOSIS

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Background. Invasive filamentous fungal infections constitute major clinical problem among patients with hematologic malignancies. Although pulmonary aspergillosis is the most common form of invasive aspergillosis, the localization at bone is an uncommon event. Case Presentation. A 67-year- old man was admitted to our department because of weakness, multiple lymph nodes in cervical, axillary, inguinal regions and pancytopenia. The diagnosis was B-cell non-Hodgkin`s lymphoma (small lymphocytic type, REAL classification) with bone marrow involvement. He underwent isolated prednisolone therapy and achieved recovery of cytopenias. After 1 year from diagnosis his disease progressed and CVP combined therapy was initiated. His lymph node enlargement and cytopenias responded to therapy. After the fifth cycle he was admitted because of fever (38,4C0), and painful swelling of the left knee. Physical examination of the knee revealed erythema, warmness, induration and impaired mobility. X-ray of the left knee showed osteolisis areas in the distal region of femur and proximal region of tibia. Arthrocentesis yielded purulent synovial fluid. SF culture yielded Aspergillus fumigatus. Surgical debridement was performed and debridement material also yielded Aspergillus fumigatus. Liposomal amphotericin-B and itraconazole therapies were applied. Control X-ray showed prominent destruction in the joint. Since his underlying disease was not in remission he underwent surgical biopsy of joint for definitive diagnosis. The histological examination of left femur distal region revealed septated hyphas with 450 angle among bone marrow trabeculi. The patient was hospitalized and underwent caspofungin therapy He did not have any evidence of systemic aspergillosis. During his follow up he succumbed to bacterial pneumonia. Postmortem biopsy and culture from lung paranchyma did not show fungal infection and galactomannan antigen was negative during follow up. Conclusion. The

symptoms and radiological findings of articular aspergillosis may be confused with non-Hodgkin`s lymphoma bone involvement. We conclude that in case of joint symptoms in the immunocompromised patient prompt and through efforts should be done to identify the cause and fungus should always be recalled.

Abstract: 514 Poster: 421

UNUSUAL LOCATION OF AN INFECTION CAUSED BY ACTINOMYCES ISRAELII IN A PATIENT WITH ACUTE MYELODYSPLASTIC SYNDROME

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OBJECTIVE: Actinomycosis is a chronic and rather infrequent bacterial infection and is usually presented as a tumor- like mass. It is manifested with cervicofacial, tho-racic and abdomimal - pelvic mass lesions. It affects more usually men and is repor-ted in people with normal immune system. We describe a patient with an hematologic disease and an unusual location of actinomyces israelii. CASE REPORT: A 65 -year -old male patient with a history of recently diagnosed myelodysplastic syndrome (type of refractory cytopenia, RCMD - RS with ringed sideroblasts) was admitted to our hospital for the investigation of a palpable painless mass located in the right lumbar region. He was afebrile and did not present any signs of infection. The laboratory investigation was normal except from a fall of hematocrit disproportionate with the severity of his myelodysplastic syndrome. He was submitted to a computed tomography of the abdomen that revealed the presence of a non homogenic space-occupying lesion infiltrating the right square lumbar, iliopsoas and iliocostal muscles. The patient was submitted to a surgical biopsy and drainage of the mass. The histologic examination revealed an infection due to actinomyces israelii and to Klebsiella pneumoniae. He was treated with penicillin parenterally for three weeks and subsequently per-os. The patient responded well to the treatment. The inflammatory mass decreased in size and a C/T performed after the end of treatment showed that it had vanished. No recurrence was noticed in the follow - up. CONCLUSION: Actinomycosis of the abdomen and pelvis in association with preceded surgery for acute appendicitis, perforated colonic diverticulitis or intrauterine devices has been described. Our patient presented with a very unusual form regarding right lumbar muscles without infiltration of the colon or other intraaabdominal location. Actinomycosis must be included in the differential diagnosis of patients with immunosuppression presenting with mass lesions.

Abstract: 515 Poster: 422

FATAL BRAIN ABSCESS IN A CHILD WITH AUTOIMMUNE HEMOLYTIC ANEMIA AFTER LONG-TERM IMMUNOSUPPRESSIVE TREATMENT

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Autoimmune hemolytic anemia (AIHA) in children is sometimes characterized by a severe course, requiring prolonged administration of immunosuppressive therapy. Atypical infections in an immunocompromised host have been increasingly reported. A 14 year old girl with autoimmune hemolytic anemia developed an acute hemolytic crisis with acute renal failure under conventional treatment with corticosteroids. Because of the life-threat-ening situation, we decided to start pulse dose methylprednisolone and also peritoneal dialysis was performed. Five days after the initiation of peritoneal dialysis renal function returned to normal. Nine days after the cessation of peritoneal dialysis subfebrile fever was developed, vital findings were normal at that time. No etiological reason was found for the fever on physical examination and laboratory tests. Left hemiparesis was developed 2 days later. Cranial tomography revealed multiple intracerebral abcesses. The clinical picture worsened within one day and the patient died before the scheduled surgery for the abscesses. Patients who receive immunosuppressive therapy may have severe infections on unexpected locations, early and aggressive management is mandatory for these cases.

Abstract: 516 Poster: 423

EFFECTIVENESS OF ZINC SULFATE IN CHEMO-THERAPY-INDUCED HAIR LOSS & ALOPECIA (PRELIMINARY REPORT)

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Backgrond: Hair loss and alopecia are important complications of chemotherapy in malignancies. Several methods have been used for prevention or treatment of these complications. According to literature review, zince sulfate has not been used in treatment, and in this article the preliminary results are reported. Materials & Methods: In this study, zinc sulfate was prescribed in dosage of 40-60 mg/day, in 15 patients [ALL (15), AML (1), NHL (1), HD (1), RMS (1) and neuroblastoma (1)], with mean age of 10 years, for three months, when they were re-evaluated. Results: In 14 of 15 patients (93.3%) significant clinical response was observed, as increased hair growth. Discussion: Prescribing Zinc sulfate as a treatment modality in chemotherapy- induced hair loss and alopecia is reported here for the first time. Clinical response was 93.3%. This research project is continuing and will answer to two basic questions: a) Are the patients zinc deficient?, b) Does zinc have any effect on growth of malignant cells and subsequently relapse of malignancy? Conclusion: Zinc sulfate has significant clinical effect in treatment of chemotherapy -induced hair loss and alopecia. Zinc status of the patients and the "safety" of drug will be reported separately.

Abstract: 517 Poster: 424

EVALUATION OF FEBRILE NEUTROPENIC ATTACS IN PATIENTS WITH HEMATOLOGICAL MALIGNANCIES: A SINGLE CENTER EXPERIENCE

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Backgroud. Infectious complications in patients with hematological malignancies are still a major cause of morbidity and mortality despite significant advances in diagnostic techniques and antimicrobial therapy. Infections may go undetected in neutropenic patients due to the absence of any obvious signs and symptoms, except for fever. Aim. In this study, we describe the characteristics of neutropenic patients with hematological malignancies who were evaluated for suspected infection. Methods. Over a 4 year period, from October 2001 to May 2005, febrile neutropenic episodes of patients with hematological malignancies were retrospectively analysed. Results. Overall, 90 infectious episode occurred in 59 patients. 76.3% of the patients were male and the mean age of the study participants was 48.3 years. The most common underlying diseases were acute myelogenous leukemia (62.7%), acute lymphocytic leukemia (16.9%), non-Hodg-kin`s lymphoma (6.8%). The absolute neutrophil count was lower than 100/mm^3 in 33 (36.7%) episodes. Microbiologically and clinically documented infections and fever of unknown origin were observed in 35.6%, 28.9%, and 35.6% of the participants, respectively. There was no statistically significant difference between absolute neutrophil count and etiology of fever ($p>0.05$). Bloodstream infections and pneumonia were detected in 19 episodes (21.1%) and 17 episodes (18.9%), respectively. Microbiologically, gram negative organisms (58.4%) (Escherichia coli, Pseudomonas aeruginosa, Klebsiella pneumonia) were most common, followed by gram positive (Staphylococcus aureus, Staphylococcus epidermidis). The most common used initial therapy consists of a combination of third generation cephalosporin and an aminoglycoside (44.4%), betalactam-betalactamase inhibitors (12.2%) and carbapenems (11.1%). Fever resolved in 24.4% of episodes using the initial therapy; in the remainder second line antibiotics (mainly glycopeptyde) and antifungals (amphotericin-B) were added empirically or depending on culture and sensitivity. A total of 14 patients (15.6%) died during the infectious episode. Summary/ Conclusions. Infection has a major impact in the management of patients with hematalogical malignancies. Studies reporting local microbiological findings are necessary for appropriate antibiotic choice. Although the etiology of febrile neutropenic infections has shifted from gram negative to gram positive organisms in many centers, our results show that infections with gram-negative bacteria continue to predominate in febrile neutopenic attacs in our center.

Abstract: 518 Poster: 425

THE FEVER DURING THE TREATMENT OF ACUTE LEUKEMIAS

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Background: Acute leukaemia predisposes the infection. The bacterial infections are caused during the periods of severe neutropenia after the beginning of antineoplastic chemotherapy. The infection makes more difficult the treatment of the patients with acute leukaemia. Neutropenia makes more difficult the treatment of infections with antibiotics. The fever is one of the more usual symptom of acute leukaemia. Aims. To study the fever and infection in acute leukaemia during the treatment with cytotoxics. To evaluate the role of antibiotics alone or in combination in the febrile states of the patients with granulocytopenia. Methods. Were studied 64 patients with acute leukaemia; 32 patients with acute lymfoblastic leukaemia and 32 patients with acute myeloblastic leukaemia. The fever was studied in all patients during the treatment with one or some cytotoxics. It was examined the blood count before, during and after the fever. It was evaluated the reduction of the fever and the elimination of it. The patients were treated with antibiotics, only one antibiotic or combinations of them. It was evaluated the period (day) of the reducing of fever and the period of elimination by the using of antibiotics. The results were considered like number of cases, percentage, the mean ± standard deviation. Results. All patients during treatment with cytotoxics have fever with mean 39,11 ± 1,01 0 C. The fever begun sooner in cases of treatment with more cytotoxics, respectively 9,10 ± 0,72 and 10,83 ± 2,11 days (p< 0,05). During cytotoxic treatment the mean of neutrofiles was reduced to 179,85 ± 32,6 cells/ microliter (p< 0.05). The value of fever begun to reduce when the mean of neutrofiles was 668,8 ± 108,12 cells/ microliter (p< 0.05). The fever was eliminated when the mean of neutrofiles was 1455,2 ± 312,4 (p< 0.05). The reduction of fever treatment with combination of antibiotics and by one antibiotic alone happened respectively after 5,5 ± 0,97 and 7,73 ± 1,20 days (p<0.05) of their using. Conclusions: The fever and infection are usual in acute leukaemia. Neutropenia favored the infection. The stimulation of neutrofile production during neutropenic period reduces the fever. The antibiotics have to use in combination to reduce the fever and infection as soon as possible.

Abstract: 519 Poster: 426

EVALUATING CHRONIC HEPATITIS IN CHILDREN WITH LEUKEMIA IN ALI ASGHAR CHILDREN`S HOSPITAL

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Backgroud: There is a risk of viral hepatitis for children with leukemia. Both hepatitis B and C virus infection are cause major problem in the management of leukemia patients. In this study, we evaluate the inci-dence and chronicity of HBV andHCV infection in children with leukemia diseases that reciving chemotherapy. Methods: 408 patients with leukemia (mean age = 5.1 years) were screened for HBV and HCV in Ali Asghar Children`s Hospital. Liver function test, the number of transfusions, HBV and HCV serology were regularly monitored. In seropositive children, HBV-DNA and HCVRNA were measured.Liver biopsies were performed in all patients with chronic hepatitis and data of study was analysis with Spss soft ware. Results: HBsAg positivty, anti HCV, and mixed (HBV& HCV) infection were found in 2%(8), 2.5% (10), 0.2% (1) of children, respectively.Of HCV infected children 8 person had positive HCV-RNA.1 case with mixed infection (100%) progressed to chronic hepatitis. Conclusion: Children with cancer at high risk for hepatitis BandC infections due to immunosuppression secondry to chemotherapy and multiple transfusions of blood products during the course of their disease. We observed an increased incidence of chronic hepatitis B&C infection. This suggests that HBV and HCV infections are serious causes of morbidity and mortality in children with cancer.

Abstract: 520 Poster: 427

A HARD TO TREAT PSEUDOMEMBRANOUS ENTEROCOLITIS: A CASE WITH NEW DIAGNOSED ACUTE MYELOID LEUKEMIA

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Cancer patients seem to be predisposed to the development of Clostridium Difficile diarrhea as a consequence of chemotherapy alone. If they were receiving antibiotics then this risk increases. We here present a case with pseudomembranoz enterocolitis which developed while the patient was using vancomycin to treat neutropenia in Acute Myeloid Leukemia (AML) due to induction therapy. Our patient who was 43 years old female was admitted to hospital for induction chemotherapy. During therapy neutropenia developed. Imipenem 500mg four times a day, amikacin 1gr once daily, vancomycin 1gr twice daily, caspafungin first day 70mg, there after 50mg daily, were started. Diarrhae with mucus and abdominal pain started on tenth day of chmeotherapy. Her feces which was in decayed sour cherry form. Colonoscopy demonstrated the presence of raised, yellowish-white, 2-to 10-mm plaques (pseudomembranes) overlying an erythematous and edematous mucosa. Biopsy of pseudomembranous plaques revealed an inflammatory exudate composed of mucinous fibrinous material containing polymorphonuclear cells indicating the diagnosis of pseudomembranous colitis. Stool toxin test was negative. Its sensitivity and specificity are 67% and 99% respectively. Because of the lower sensitivity, repeating this test several times might be necessary in patients in whom the probability of pseudomemranous colitis is high and an initial test result is negative. The patient`s antibiotic therapy could not be stoped because of her neutrophenic state, but peroral metranidazole 500mg twice two times daily was added to her therapy. The patient was also put on an ursodeoxycholic acid 250mg twice daily therapy as it had been shown to attenuate the severity of acute inflammation and inhibit the development of toxic megakolon in experimental colitis. The patient`s symptoms improved in the first week of the treatment. At control colonoscopy mucosa was healed. At consolidation therapy the patient developed neutropenic fever but no enterocolitis sign or symptom occurred. The patient has kept her remission state of AML during follow-up period up to now. In previous reports no pseudomembranous enterocolitis was found in AML patients on vancomycin therapy. Metranidazole treatment worked in our patient, even the patient was on vancomycin therapy and she was in neutrophenic state. Ursodeoxycholic acid might have helped to limit inflamation in our patient which is a new information for pseudomembranous enterocolitis.

Abstract: 521 Poster: 428

BM ASPIRATION & BX, AND IT CHEMOTHERAPY, UNDER GENERAL ANESTHESIA REPORT OF 1200 CASES IN 7 YEARS FOR THE FIRST TIME IN IRAN)

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Background: Bone marrow aspiration & Biopsy, Intrathecal chemotherapy, and lumbar puncture are procedures that are performed with different indications in diverse group of disorders, especially in hematology & oncology patients. The most important adverse effect of these procedures is "pain" that causes imcompliance and delayed management of these patients, notably in children. For relieving "pain", there are many methods of local or general anesthesia. Material & Methods: In this article, we introduce performing these procedures under general anesthesia for the first time in Iran in pediatric hematology oncology wards (Ali- Asghar and Shahid Dastgheib Hospital, shiraz) in seven years (1998-2005). These procedures were performed in about 1000 cases, mostly acute leukemias (90% ALL & AML) and others (10%) including CML, NHL & HD, neuroblastoma, retinoblastoma, aplastic anemia, and ITP. General anesthsia was induced by Pentothal, Fentanyl, and Midazolam in the operating room. No significant complication was observed, except for postop nausea & vomiting, and convulsion in one case in whom IM ketamine was used. This research project has been completed in three arms, including efficacy of Propofol for inducing general anesthesiea, Droperidol as anti-emetic drug, and EMLA cream for local anesthesia as an alternative method for general anesthesia, that the result of the recent two projects are reported separately. Conclusion: Performing these painful procedures under general anesthesia is safe and effective (in the ultimate prognosis of the patients), and should be routinely done in other centers, especially in the Hematology & Oncology wards.

Abstract: 522 Poster: 429

FATAL DISSEMINATED MUCORMYCOSIS IN A PATIENT WITH MANTLE CELL NON-HODGKIN`S LYMPHOMA: AN AUTOPSY CASE

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A patient with mantle cell non-Hodgkin`s lymphoma presented herself with fever, nausea, right upper quadrant pain on the 7th day of R-CHOP chemotherapy. After hospitalization with the suspicion of acute cholesistitis she received antibiotherapy with G-CSF because of emerging neutropenia at the 10th day of chemotherapy. Abdominal computed tomography revealed small infarcts in the spleen and kidneys. The echymotic lesion which developed on her right lateral malleolus became bullous in the following days and treated as ecthyma gangrenosum. Altough the patient was afebrile with a normal neutrophil count on the third day of antibiotherapy she developed acute renal failure and deteriorated rapidly. The patient underwent hemodialysis but died on the 10th day of hospitalization. Post mortem autopsy findings showed ischemic infarction and necrosis of parenchyma due to mycotic thrombosis of arteries and veins of many organs (heart, lung, diaphgram, kidneys, spleen, gut mucosa) as well as invasion of vessel walls and parenchyma by mucor as seen in the picture. We reviewed mucormycosis in the light of this case. Figure 1. Necrosis of cardiac muscle and mycotic thrombosis in the lumen of vessel IRON METABOLISM

Abstract: 523 Poster: 430

EVALUATION OF ERYTHROPOIETIN AND SOLUBLE TRANSFERRIN RECEPTOR LEVELS FOLLOWING INTRAVENOUS TREATMENT OF IRON DEFICIENCY

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Background: Low hemoglobin levels and inadequate tissue oxygen, stimulate erythropoietin (EPO) production in proportion to the degree of hypoxia. Also it is known that soluble transferrin receptor (sTfR) levels are indicators of both iron deficiency anemia and increased erythropoietic activity. Aim: In this study, serum EPO and sTfR levels were investigated following the intravenous correction of iron deficiency. Patients and Methods: A total of 40 children (18 females and 22 males) with iron deficiency anemia admitted to Erciyes University of Pediatric Hematology Department between June 2002 and December 2004 were included in this study. Diagnosis of iron deficiency anemia was established by measurements of complete blood cell count, serum iron and iron binding capacity and serum ferritin levels. All children had intravenous iron treatment for four or five days. Total iron requirement (IV ferrous hydroxyl sulphate) were calculated using the following formula: (body weight x 80 x 3.4 x 1.5 x (desired hemoglobin / subject`s hemoglobin) /100). Serum EPO and sTfR levels were measured before and after the treatment. Results: At the end of treatment, serum EPO levels were significantly lower compared with pretreatment levels respectively (38.7 ± 45.9, 140.9 ± 54.5, $p<0.05$). Also serum sTfR values were significantly higher than initial values after the treatment respectively (4.37 ± 0.84, 3.84 ± 1.17, $p<0.01$). Conclusion: Although serum hemoglobin levels did not increase sufficiently with intravenous iron treatment, decrease in serum EPO levels were significant. This decrease in serum EPO levels seem to be caused by the increased EPO receptors and erythropoietic activity. EPO receptors located on the surface of progenitor erythroid cells, bind serum EPO, thus serum EPO levels decrease. STfR provides a quantitative estimation of total erythropoietic activity and is also an index of functional iron deficiency. The results of this study demonstrate that stimulated erythropoietic activity is more efficient than iron deficiency to increase serum sTfR levels.

Abstract: 524 Poster: 431

SERUM PROHEPCIDIN LEVELS AND CORRELATION WITH IRON STATUS IN NEONATES

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Background: A recently isolated peptide hormone, hepcidin, is thought to be the principal regulator of iron homeostasis. Overexpression of

hepcidin was shown to result in severe iron deficiency anemia and hepcidin gene removal result in hemochromatosis in mice. Aims: The aim of this study was to evaluate prohepcidin levels in preterm and term infants and to determine the relationship between prohepcidin and iron status. Methods: Twenty-six preterm and 16 healthy term appropriate for gestational age babies were included in the study. Babies were divided into 3 groups according to their gestational age; terms (>37 weeks), preterms between 33-36 weeks and preterms £32 weeks. Complete blood count, serum iron and ferritin concentrations, iron binding capacity, transferrin saturation and pro-hepcidin levels were studied in venous blood samples. Results: No significant difference was observed among groups in terms of demograpic data, prohepcidin levels and iron parameters. Prohepcidin levels did not correlate with gestational age, however, the levels were higher compared to the results obtained from adult and children studies (482±371.9 ng/ml in terms, 341.7±268.5 in preterms between 3336 weeks and 629.5±525.5 in preterms <32 weeks). Conclusions: This is the first study that determined the prohepcidin levels and its correlation with iron status in newborn infants. Future clinical trials are required to determine hepcidin levels in unhealthy infants.

Abstract: 525 Poster: 432

OCULAR CHANGES IN THALASSAEMIA MAJOR PATIENTS TREATED WITH DESFERRIOXAMINE AND POTENTIAL OCULAR TOXICITY OF DIFFERENT CHELATION THERAPIES

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The aim of the study was to investigate the signs of ocular toxicity in a total of 48 patients with thalassaemia major who were previously administered desferrioxamine (DFO) for iron chelation therapy and to prospectively evaluate the potential ocular toxicity of different chelation therapies. The best corrected visual acuity of the patients was tested using a Snellen chart and funduscopic examination was performed using indirect ophthalmoscopy by the same ophthalmologist. Monocular pattern visual evoked potentials (VEP) were recorded by using `Medelec Neuropto System`. Amplitude and latency of the p100 wave were measured for each eye. The VEP of 32 healthy age-matched subjects were recorded as control group. The electro-oculographic (EOG) testing was carried out by one experienced technician unaware of the participants` visual acuity or the appearance of their fundi. The EOG was recorded in accordance with ISCEV standards. The LIC and serum ferritin levels were measured in all patients. Following the baseline examinations, 12 patients were included into one of following 3 arms each, for 1-year study: L1 (75 mg/kg daily) was given either in combination with DFO (40-50 mg/kg twice weekly) or as single agent. L1 was supplied by LIPOMED AG, Switzerland. The patients who were registered in DFO single agent arm received 40-50 mg/kg s.c. DFO, 5 days a week. Ocular examinations were repeated for all patients at study end. The LIC and serum ferritin measured at study end were also considered. Visual acuity was found affected at baseline in only one patient (0.5/0.6) in whom VEP delayed latency was detected (146/168 msec) (Table 1). There were no pathologic changes at fundus examinations and the EOG displayed normal Arden ratio in all patients at baseline and at study end. There was no significant difference between the patients and control group regarding the mean latencies of the p100 wave. However, when iron load at baseline was taken into consideration, the patients who had lower LIC and ferritin, showed significantly delayed latency of the p100 wave when compared to the control group (see table 1). All treatment regimens resulted in a decrease of LIC and ferritin while the latency of p100 wave didn`t differ significantly at study end compared to baseline in each arm. One of the patients registered in the L1 single agent arm, developed acute cerebellar syndrome on the 52nd week of therapy. Bilateral delayed latency in VEP was accompanied by symptoms like ataxia, ear ringing, dizziness and diplopia which recovered after cessation of L1 therapy. The condition was considered possibly related to the L1 therapy. The long-term effects of relatively new chelator deferiprone regarding ocular toxicity need to be followed up. VEP seems to be a sensitive and early indicator of ocular neurotoxicity in patients receiving long-term DFO. Patients with a low iron burden seem to be more affected by delayed latency in VEP and particularly need to be observed closely.

Abstract: 526 Poster: 433

THE ROLE OF HFE MUTATION (C282Y) ON IRON METABOLISM IN BETA THALASSEMIA PATIENTS

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Introduction: Beta thalassemia is a serious genetic disorder whose patients receive regular blood transfusion and subsequently develop iron overload with secondary hemochromatosis. Hereditary hemochromatosis is also characterized by life-long increased iron absorption and progressive iron storage that results in organ damage similar to that observed among beta thalassemia patients. It has been shown that two mutations, which have been identified after isolation of HFE gene, are responsible for the majority of the cases. The C282Y mutation has been well characterized as being the primary mutation responsible for hereditary hemochromatosis in all the population studies screened throught the world. Purpose: This study was planned in order to determine the role of C282Y mutation, which is supposed to be responsible for majority of hereditary hemochromatosis, in development of secondary hemochromatosis in beta thalassemia patients; and to determine prevalence and allele frequency of this mutation in healthy control group. Patients and Methods: Eighty-seven beta thalassemia major 8.3 (age range: 3-30 and 13 beta thalassemia intermedia patients, mean age: 16.4 years), who were followed in the Pediatric Haematology Unit of Hacettepe University, Ankara were included in the study. One hundred healthy children constituted the control group. Mutation analysis was performed on DNA extracted by standard methods from peripheral blood leukocytes. To detect the presence of the C282Y mutation, PCR amplification of the HFE region was performed accordingly to Feder et al. Results: Neither heterozygous nor homozygous C282Y mutation was not detected in patients with beta thalassemia and control group. Conclusion: The results of our study show very low frequency of HFE C282Y mutation and doubt its possible role in iron overload in beta thalassemia patients. We suggest, genetic factors other than the HFE C282Y mutation are involved in an abnormal iron accumulation in these patients. For this reason, in our country in which beta thalassemia incidence is high, it is important to study other genetic factors that can be affect iron metabolism. Beside this, wider researches are needed in order to determine exact prevalence of HFE gene mutation in Turkish population because of high incidence of relative marriages and the presence of wide variety of ethnic origins in Turkey. Acknowledgment: This study was supported in part by TUBITAK (number: SBAG-AYD-417)

Abstract: 527 Poster: 434

IRON STATUS IN LOW-INCOME PREGNANT TURKISH WOMEN AT TERM

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Aim: Iron -deficiency anemia (IDA), is one of the most common medical disorders in pregnancy, especially in developing countries. However, conventional markers for assessing iron status tend to be less reliable in pregnancy. Our aim was to study the usefulness of soluble serum transferin receptor (sTfR) as a marker for iron deficiency and to define iron status in low-income pregnant Turkish women at term. Methods: One-hundred and sixty-four low income healthy pregnant women accepted for term delivery at Ege Gynecology and Obstetry Hospital were studied for iron status. Subjects with thalassemia trait, anemia of the other causes, multiple pregnancy and blood transfusion history for any reason were excluded. One-hundred and thirty-two subjects were included in the study in the final analysis. Erythocyte indices were studied with an automatic coulter (Symex SE, 9000). Ferritin and sTfR levels were measured by an immunoturbidimetric and nephelometric method (Dade Behring, Dutch), respectively. Ferritin<15ng/dL and sTfR>1.8 mg/dL were accepted as iron - deficiency (ID) in addition Hb<11 g/dL were considered IDA. Subjects were evaluated in "IDA", "ID" and " control"groups in terms of hematological parameters. Data were calculated on SPSS 10.0 Windows Programme Pearson Correlation test, One-Way Anova, post-hock Bunferroni were used. Results: The mean chronological age, gestational age and number of parity of the subjects were 26.4±4.7 yrs, 39.4±1 weeks and 2±1.1, respectively. 72 (52.3%) women had IDA and 15 (13.6 %) had ID. All of the hematological parameters showed statistical difference between the IDA, ID and the control groups, except MCHC ($p<0.05$). Ferritin, sTfR and sTfR index showed statistical difference both in IDA vs control and ID vs con-

trol groups. Calculated sensitivity, specifity, positive and negative predictive values for sTfR (>1.8 mg/dL) were 70%,72%,83% and 55% respectively. 30% of the subjects were not on iron supplementation and 35% did not receive routine prenatal care. Conclusion: High prevalance of iron deficiency anemia is documented. Ferritin and sTfR are highly correlated and ferritin remains the gold standart for the diagnosis of IDA. sTfR seems to be a spesific and sensitive marker of iron deficiency in pregnancy and may be a better test in ill and hospitalized patients where ferritin may be normal or elevated, despite iron deficiency. These data also suggest that prenatal care and iron supplementation should be considered as major determinants for normal maternal iron status.

Abstract: 528 Poster: 435

THE INCIDENCE OF HYPERSEGMENTATION IN IRON DEFICIENCY ANEMIA AND THE INVESTIGATION OF TREATMENT EFFECT ON HYPERSEGMENTATION

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Neutrophil hypersegmentation (NH) is a finding commonly seen in megaloblastic anemias secondary to the deficiency of vitamin B 12 and/or folic acid. Iron deficiency anemia (IDA) may cause hypersegmentation in neutrophills as well. The aim of the present study was to investigate the incidence of hypersegmentation in children diagnosed with IDA and to demonstrate the effect of iron treatment on the NH in children with IDA. The cases with infections, the deficiency of vitamin B 12 and/or folic acid, chronic renal failure, drug exposures, systemic diseases and mylelodysplastic syndrome were excluded. Thirty-four children with diagnosis of IDA were included in the study. Pre and post treatment peripheral smear tests were assessed for each case. Hundred neutrophils were examined from each patient, i.e. a total of 6800 neutrophils. NH was defined as >5 % of the neutporhils with 5 lobes or the presence of the presence of at least one neutrophil with six or more lobes. Of 34 cases, 24 (70.6%) cases had NH before the treatment. Peripheral smear tests were repeated for the patients with the improved clinical and laboratory findings of IDA after the treatment. NH was also detected in 21 (61.7%) cases after the treatment. This decreased hypersegmentation ratio was not statistically significant. In 16 (66.7%) of 24 cases detected with NH before the treatment, NH sustained after the treatment. Of 10 cases without NH before treatment, 5 (50%) developed NH after the treatment. As a conclusion, NH is a common finding in patients with IDA. In the present study, after iron treatment of patients, NH sustained in some cases and unexpectedly some cases without NH before treatment demonstrated NH following iron treatment. This finding suggests that iron deficiency is not main cause of NH in those patients. There is need to studies which will explain the mechanisms of NH.

Abstract: 529 Poster: 436

IRON DEFICIENCY ANEMIA AND PLASMA GHRELIN LEVELS IN STAGES OF DEVELOPMENT

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Background: Ghrelin stimulates food intake and induces metabolic changes leading to an increase in body weight and body fat mass. Plasma ghrelin levels decrease in obesity, and elevate in cachexia. Iron deficiency anemia (IDA) is the most frequently seen cause of nutritional anemia, i.e. a type of starvation One of the well-known clinical features of IDA is poor appetite. There is no available study related to levels of ghrelin in IDA Aim: Since ghrelin stimulates food intake and increases appetite during starvation, changes in progression to IDA are intended to disclose. Our aim was to determine possible effects of ghrelin (if present) on alterations (decreases) in appetite in IDA, and lag in development. Methods: The patients were categorized in four 16.56 months; Group II groups [Group I (Control, C), n= 25, 82.4 20.71 months; Group III (iron deficiency, (hypoferritinemia, IDec), n= 30, 57.5 13.21 months] 19.87 months; Group IV (IDA), n= 25, 31.55 IDef), n= 28, 50.21 Informed consent was obtained from parents. Control group was defined as cases with normal hemoglobin (Hb), serum iron (SI), transferrin saturation (TS), and ferritin (F) [>12 ng/ml] values. Group IDec Hb: N, SI: N, TS: N, F <12 ng/ml; Group Idef, Hb: N, SI: decreased TS <16%, F <12 ng/ml and Group IDA, Hb and SI decreased, TS

<16%, F <12 ng/ ml. We studied plasma ghrelin levels before mealtimes. Results: Mean value of ghrelin was detected to be 27.81 68.62 pq/mL, and 177.66 74.35 pq/mL, 309.66 85.56 pq/ml, 332.26 396.53 pq/mL in control, Groups IDec, IDef and IDA respectively (Table 1). A statistically significant difference was detected between Groups I, and III (p<0.01), I, and IV, II, and IV, III, and IV (p<0.001). Summary/Conclusions: A significant positive correlation was demonstrated between iron status of the body and levels of ghrelin Therefore decreases in levels of ghreline can induce loss in appetite and lag in development in IDA.

Abstract: 530 Poster: 437

CHANGE OF SERUM IRON PARAMETERS IN PATIENTS WITH CHRONIC PARANCHIMAL LIVER DISEASE

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Transferrin, the iron binding protein in blood is produced in the liver. Total iron binding capacity (TIBC) reflects serum transferrin level because there is no other iron binding protein in blood. Since transferrin saturation (TS) (serum iron/ TIBC) is an important test used for diagnosis of iron deficiency and hemochromatosis, examining the levels of TIBC and establishing how it changes in different stages of chronic liver diesase is important for interpretation of TS in patients with a hepatic disorder. TS might be measured falsely high if transferrin level was reduced due to decreased hepatic production. In this study, serum iron parameters of patients admitted with chronic hepatitis (N= 17) and hepatic cirrhosis (n= 85) in different stages were analysed. TS was over 50% (20 patients, 28,2%) in more patients than expected. TIBC was statistically different in Child-Pugh class A, class B and class C patients (303±82, 248±83 ve 188±76, p< 0.001). There was a good negative correlation between Child-Pugh score and TIBC (r= -0.53, p< 0.001). On the other hand serum ferritin (r= 0.39, p< 0.001) and TS levels (r= 0.49, p< 0.001) increased as Child-Pugh score progressed. Ferritin was increased in many of the patients. But TS was normal in half of these patients and increases in ferritin levels were only mild. Just one patient with increased TS had a high ferritin level arousing a suspicion of iron overload. Mild elevations of ferritin in our patients could be explained by hepatocyte injury. In conclusion, elevation of TS is a common laboratory finding in hepatic cirrhosis. This finding should not be connected to iron overload. The true reason is impaired transferrin production in parallel to the severity of hepatic damage. The elevation of TS and the increase of serum ferritin level should also be considered during differential diagnosis of iron deficiency anemia in patients with hepatic disease.

Abstract: 531 Poster: 438

DOES MATERNAL IRON DEFICIENCY AFFECT IRON STATUS OF THE NEWBORNS AND EARLY INFANTS?

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Aim: It is still contoversial that maternal iron deficiency affects iron status of the newborns and early infants. The aim of this study is to investigate the effect of iron deficiency of late pregnancy on the iron status of the newborns and early infants and to define soluble transferrin receptor (sTfR)`s role in the these assessments. Methods: Seventy-eight pregnant women who were admitted for term delivery in Ege Gynecology and Obstetry Clinics and their 78 full-term babies were included in the study. Erythrocyte indices, ferritin and sTfR levels were studied both in the mothers (within the last 24 hrs before delivery) and their babies (umblical cord blood and venous blood at the end of 4th month). Erythrocyte indices were studied with an automatic coulter (Symex SE, 9000); ferritin and sTfR levels were studied with an immunoturbidimetric method and nephelometric method (Dade Behring, Dutch), respectively. Ferritin< 15ng/dL and/or sTfR>1.8 mg/dL were accepted as "iron deficient" both for the mothers and the babies. In addition, Hb<11 g/dL and <10.3 g/dL were accepted as "iron deficiency anemia" for the mothers and their four

months old babies, respectively. Babies born from the mothers whose iron status were assesed were than evaluated prospectively in three groups; Group I: Babies with Maternal Iron Deficiency Anemia (MIDA), Group II: Babies with Maternal Iron Deficiency (MID) and Group III: Control (babies from mothers with normal iron status). Data were calculated on The SPSS 10.0 Windows programme and Kruskall- Wallis, Pearson Correlation test and One-Way Anowa were used for statistical analysis.Values <0.05 were accepted significant. Results: The mean chronological, gestational age and number of pregnancy of the pregnant women were 25.8 ±3.9 years, 39.9±0.1 weeks and 1.9±0.9, respectively. Mean weight of the babies at birth and at four months were 3375.6±483 g and 7010±750 g respectively. While 38.2% of the babies with MIDA and 33.3% of the babies with MID developed iron deficiency anemia at four months; 47.8% and 21.7% of the babies with normal maternal iron status developed iron deficiency and iron deficiency anemia, respectively (p<0.05). While all of newborns had normal iron status 66.6% of overall babies developed either iron deficiency or iron defriciency anemia at their four months. There were no statistical difference within the groups in hematological parameters at cord blood and at 4 months. sTfR values of the mothers and the 4 month old babies showed negative correlation with ferritin and MCH and positive correlatin in RDW Conclusion: It is shown that the iron status of the newborns and the early infants is not influenced by the iron deficiency of their mothers and thatiron deficiency anemia and/or iron deficiency is seen in high percentages in early infancy irrespective of the maternal iron status.

Abstract: 532 Poster: 439

OUR INTRAVENOUS IRON THERAPHY EXPERIMENT IN A PATIENT WHO HAS ABNORMAL IRON ABSORPTION

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Iron deficiency anemia is a common health problem worldwide and it impairs growth and intellectual development in children. Oral iron supplementation is considered as first-line treatment. Most patients responds favorably to oral iron treatment but in some cases parenteral iron treatment is needed. 12 years old a girl patient who has been followed with iron deficiency anemia and received oral iron therapy for a year consulted us with dizziness and headache. In the physical examination she had pale skin, hyperdinamic heart and 2 / 6 systolik murmur. The patient did not have organomegali. Laboratory findings as Hb: 4 gr /dl, hematokrit:18,5 %, MCV: 48 fl, platelet: 215000 /mm3, WBC: 8800 / mm3, retikülosit: 1.2, serum iron: 12 mg /dl (Range:20-200), ferritin < 1,5 mg/L. Her total capacity of iron coupling was 495 mg /dl (R: 250 - 400 mg /dl). Red blood cells transfusions given to the patient as 10 cc / kg. In the iron absorption test iron absorption was found as reduced. Antigliadin antibody and stool blood was negative. Her menstrual cyclus regular. The patient had abnormal iron absorption but normal zinc levels. During her Hb was 6,5 gr / dl, 2,5 ml intravenous iron threapy was given and later two days a week 5 ml /day. She received total amount of the 10 dose. On the fifth day of the control Hb: 8,5 gr /dl and reticülocyte: 5. At the end of the tenth dose Hb: 12 gr / dl, hemotokrit: 37 %, and MCV: 79,5 fl were found. Parenteral iron treatment can be used when severe gastrointestinal side effects are seen, in the abnormal iron absorption and in the anemia seen in chronic renal insufficiency. In recent years, successful results have been gained with effective and reliable intravenous iron supplementations. With intravenous iron treatment, the need of blood transfusion of the patients has reduced.

Abstract: 533 Poster: 440

COMPARISON OF THE EFFICACY OF SINGLE, TWO OR THREE DOSES DAILY FERROUS SULFATE THERAPY IN CHILDREN WITH IRON DEFICIENCY ANEMIA

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Background: Iron deficiency anemia is a major problem of public health and it effects the psychological and physical development, behaviour and performance of children. Especially in infancy, it inhibits the development of motor development and cognitif functions. Because of that to prevent iron deficiency anemia, early diagnosis and appropriate treatment of iron deficiency anemia is

very important. Aim: We aimed to compare the efficacy of ferrous sulfat therapy among one, two or three dose per day therapy. Methods: This study was performed in Pediatrics Clinic of Ankara Education and Investigation Hospital. Ninety children included in the study and were seperated into 3 groups. Ferrous sulfate (Ferrosanol B sirop, Adeka) was given 6 mg/kg/day once a day to first group, twice a day to second group, and 3 times a day to third group before meals for 3 months. Results: Fifty-five of cases (61%) were male, 35 (39%) female. Mean age was 24 months (range 8-72 month). The improvement rate of anemia in first and third months was found to be 80% and 86% in once a day therapy; 70% and 93%, twice a day therapy; 83% and 86% three times a day therapy($p>0.05$), respectively. Side effects such as iron-staining of the teeth, constipation, diarrhea,and abdominal pain were minimal and similar in three groups. Conclusions: One dose administration is as effective as 2 or 3 dose administration and there is no difference in side effects. So that we think that one dose administration is appropriate in iron deficiciency anemia. MYELODYSPLASTIC SYNDROMES

Abstract: 534 Poster: 441

METABOLIZING ENZYME POLYMORPHISM STUDIES IN THE MYELODYSPLASTIC SYNDROMES

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BACKGROUND Myelodysplastic syndromes (MDS) are clonal stem cell disorders characterized by pancytopenia and a high risk for transformation into acute leukemia. Among possible etiological factors of primary MDS occupational and environmental exposures to various chemical substances, such as alkylating agents, organic solvents, pesticides and smoking are considered. Gluthatione S-transferases (GSTs) are a large family of drug-metabolizing enzymes that participate primarily in detoxification mechanisms of genotoxic agents. The genes encoding GSTM1 and GSTT1 are polymorphic in human beings, and their variants with gene deletion do not express the enzyme. Therefore it is hypothesized that genetic polymorphism of GSTM1 and GSTT1 may influence the risk of the development of MDS. AIM The aim of our case - control study was to investigate the relationship between GSTM1 and GSTT1 genetic polymorphism and the risk of MDS METHOD The study population comprised one hundred MDS patients and one hundred hospitalized controls matched for age and sex. Subtype distribution of the MDS were: RA: 43, IRSA:19, RAEB/ RAEB-t: 30, Hypoplastic: 3, 5q-: 5. Controls were diagnosed for various unrelated diseases including hypertension, 2nd type diabetes, obliterative arteriosclerosis, metabolic syndromes, such as hyperuricacidaemia or hyperlipoproteinaemia. Exclusion criteria for controls were malignancies and immunpathological disorders. Mean age was 68 yrs both for the patients and their controls. The sex ratio also was the same in the two groups, male/female: 45/55. GSTM1 and GSTT1 genotyping was carried out by multiplex PCR. RESULTS GSTM1 genotype frequencies were similar among cases and controls. There were 52.3 % positive genotypes, i.e. homozygous or heterozygous carrier of the gene, and 47.7 % null genotypes (homozygous gene deletion) in the group of MDS patients, and 51.5 % positive and 48% null genotypes among controls, respectively. There was no statistically significant difference between cases and controls for the GSTT1 polymorphism either, 80.2 % positive and 19.8 % null genotypes among cases, whereas 74.7 % positive and 25.3% null among controls. The frequencies of the combined GSTM1-GSTT1 genotypes were not significantly different in cases and controls. CONCLUSIONS Our first results suggest that GSTM1 and GSTT1 genetic polymorphisms may not influence the risk for MDS significantly in the Hungarian population. Literature data are controversial, both positive and negative findings have been reported. The available data suggest that the effect of GSTT1 and GSTM1 genetic polymorphisms on the risk of development of MDS may be weak if any and may vary in different geographical and ethnic populations that might necessitate further investigations.

Abstract: 535 Poster: 442

MYELODYSPLASTIC SYNDROME WITH PROFOUND IMMUNODEFICIENCY IN THE SAME FAMILY: PRESENTATION OF TWO CASES

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Introduction: The patterns of humoral and cellular immune defficiencies such as hypogammaglobulinemia, low counts of B lymphocytes and their precursors, defficiency in neutrophilic granule membrane glycoproteins, decrease in peripheral blood T lymphocytes counts(mainly CD4+ population), defect of antibody-dependent and lectin-induced polymorphonuclear cytotoxicity can be seen in myelodysplastic syndrome. Here, we present a 2 siblings from a same family. Case 1: We reported a 30 year old male, with a recent history of 9 month antituberculose therapy presented with pancytopenia since April 2003 to our institution. He was admitted to the hospital with the complaints of high fever, weakness, epistaxis. He had also many exudative skin lesions. The complete blood count was as follows: hemoglobin 8,2 g/dL, total white blood cell, neutrophils, lymphocytes and platelets 2,05 x 109/L, 1,43 x 109/L, 0,487 x 109/L and 20,0 x 109/L; respectively. Ferritin level was 3353 mg/dL without the history of blood transfusion. Primary hypothyroidia, hypogonadotrophic hypogonadism and hypogammaglobulinemia was also detected. Bone marrow biopsy disclosed dysplasia in the erythroid series and mild dysmorphism in all series. FISH analysis did not detect del 5q or del 7q. With conventional cytogenetic method, trp(1)(q25qter) and del(11)(q23) were detected clonally. Later he was hospitalized several times because of infections. He died 1 month after his last hospitalization. Case 2: The sister of the first case was a 42 years-old female. She was admitted to the hospital with high fever and butterfly like hemorrhagic crusty skin lesions on the face, which have been present for the past 1 year. The complete blood count was as follows: hemoglobin 10,2 g/dL and total white blood cells, neutrophils, lymphocytes and platelets 1, x 109/L7, 1,4, 0,2 x 109/L and 28,0 x 109/L; respectively. Ferritin level was 272 mg/dL x 109/L. Hypogammaglobulinemia was present. ANA and AntidsDNA were negative. Both thyroid and gonadal functions were normal. Conventional cytogenetic analysis of bone marrow aspiration revealed der(1), del(6)(p22), del(11)(q23) and der(20). She was admitted to the hospital several times because of recurrent infectious attacks. Three month later she died, too. Conclusion: Congenital MDS may be present with the same family and it may be associated with severe immunodefficiency which can be fatal.

Abstract: 536 Poster: 443

QUANTITATIVE EVALUATION OF ACTIVE CASPASE-3, BCL-2 AND CLEAVED PARP IN PATIENTS WITH MYELODYSPLASTIC SYNDROMES AND ACUTE MYELOID LEUKEMIAS

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Background: Excessive progenitor cells apoptosis contributes to the ineffective hematopoiesis and peripheral cytopenias in early myelodysplastic syndromes (MDS) whereas leukemic progression arises through genomic lesions that abrogate apoptotic control mechanisms, allowing long survival and expansion of neoplastic clones. However, the nature of the molecular mechanisms underlying aberrant apoptosis in MDS remains obscure. Aim: To evaluate the quantity of proteins with key role for the apoptotic process -active Caspase-3, Bcl-2 and cleaved PARP, in patients with MDS and acute myeloid leukemias (AML). Materials and methods: Cell lysates were analyzed in 9 patients with MDS [Refractory anemia, RA (n=1), Refractory anemia with ringed sideroblasts, RARS (n=2), Refractory cytopenia/ trilineage dysplasia, RC/TLD (n=3), Refractory anemia with excess of blasts, RAEB (n=2), Chronic myelomonocytic leukemia, CMML (n=1)] and 10 patients with AML. The levels of Caspase3, Bcl-2 and cleaved PARP were measured using BD CBA Human Apoptosis Kit and flow cytometry. Results: The levels of the studied parameters are presented according to the subtype of the disease in Table 1. A significant difference was found in the quantity of the anti-apop-totic protein Bcl-2 between MDS and AML patients (mean 1199.9±1033.9 vs. 4171.5±1922.8, respectively, p=0.003), the lowest levels observed in patients with RA and RARS and fourfold higher -in patients with AML. Moreover, the results indicated activation of mechanisms of the early apoptotic stages in RAEB, including activated Caspase-3 showing the highest values (.=0.023) and activation of ICE-like proteases, resulting in the highest levels of cleaved PARP [due to proteolysis of Poly (ADPribose) Polymerase, an enzyme involved in DNA repair and genomic maintenance]. Conclusion: Different levels of the key markers of programmed cell death established in patients with MDS and AML might reflect differences in the biology of the two disorders. Further investigations of a larger number of patients will benefit more detailed elucidation of the pathogenetic mechanisms in defined MDS subtypes.

Abstract: 537 Poster: 444

EFFECT OF ERYTHROPOIETIN ON PLATELET IN PATIENTS WITH MDS

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Aim: We decide to study the effect of erythropoietin on the platelets in patients with myelodisplastic syndrome (MDS). All patients suffered from primary MDS but none of them received any special treatment. From our study patients that suffered from diseases or they were receiving medication that affect the function of platelets were excluded. Furthermore patients with platelet count<50,000ìl were excluded also because we were unable to check the aggregation of platelets. Material: 41 subjects were studied, 15 normal subject (10 men and 5 women mean age 66,6 7,4 years old) years old) and 26 patients (17 men 9 women with mean age 70,9 suffered from all types of MDS according to FAB criteria (9 with RA, 3 with RARS, 7 RAEB, 4 with CMML and 3 with RAEB-t). We divided them in 2 groups: 1st- 7 Patients receiving human recombinant erythropoietin (rEPO) with mean dose 30.000 iu subcutaneous weekly and 2nd- 19 without rEPO. Methods. 1- The platelet function was studied in Platelet Ionized Calcium Aggregometer (PICA) using Ristocerin, ADP, Collegen and Adrenalin as stimulators. 2- The expression of platelet glycoproteins (GPIb, IX, IIb, IIIa and P-selektin) was studied using the flow cytometry and special monoclonal antibodies. This way the percentage of glycoprotein expressed in platelet membrane and MFI were estimated. We performed the statistical analysis of our results using the t-test with common standard deviation.. Results: our results concerning the aggregation test and flow cytometry are presented in Tables 1,2 and 3. From the study of our results we can see that 1)while the decrease of aggregation between the patients under EPO and normal subjects is statistically non significant (p<0.1)the decrease of the corresponding values between the patients that did not received EPO and normal subjects was statistically very significant for all stimulators (p <0.001). 2) the patients under EPO show an important increase of platelet expressing GPIID percentage grater than the expressed percentage of patients without EPO (60% vs. 46,1% correspondingly, p<0.001). 3) The difference of expressed MFI was not statistically significant. Conclusion: The findings of our study show us that erythropoietin improves the function of platelets in patients with MDS, probably through the increase of expressed percentage in their membrane.

Abstract: 538 Poster: 445

MARKED IMPROVEMENT PRODUCED AFTER LAPAROSCOPIC SPLENECTOMY IN HYPOPLASTIC REFRACTORY ANEMIA

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Background. Despite many arguments, the role of the immune system in the pathogenesis of hypoplastic myelodysplastic syndrome (hMDS) remains controversial. Recently immunosuppressive therapies including prednisolone, antithymocyte globulin, and cyclosporin A are used to treat cytopenia in some patients with hMDS with encouraging results. The adverse reactions, the risk of the leukemic transformation and the high costs are limiting factors in their use. Therefore, the splenectomy, which proved to be effective in some cases of aplastic anemia, could be a better alternative method for the correction of the immune disturbances and to induce improvement in some patients with MDS. However, until now it is not included in the current therapeutical procedures of hMDS. Case report. A 20 years old male patient was admitted for the first time on November 2002 for pallor and asthenia without other signs or symptoms on clinical examination. The screening laboratory tests showed marked anemia and thrombocytopenia, morphological features of myelodysplasia in the peripheral blood, mild increase of serrum lactic dehidrogenase - 654 UI (N < 617), positive test for hemosiderinuria and negative Ham and sucrose lysis tests, negative tests for autoimmunity. The HLA antigen DR15 was absent. On biopsy, the bone marrow (BM) appeared marked but not uniform hypoplastic (< 20% overall cellular density), increased number of small lymphocytes and, by immunohistochemistry, no more than 3% CD34 cells. The spleen was in normal limits on echography. Because no improve-

ment by high-doses corticotherapy was obtained and Cyclosporine A was avoided, laparoscopic splenectomy has been performed on January 2003, without intraoperative incidents. After splenectomy, no need of transfusions and a slow but continuous improvement of the peripheral blood counts up to normal values and an increase of BM cellular density but with the persistence of the other morphological dysplastic features have been noted. Conclusions. Splenectomy performed in hMDS can induce a normalization of the peripheral blood counts and even significant increase of the BM cellular density but with the persistence of the morphological dysplastic features. Laparoscopic splenectomy is a preferable option due to lower risk of bleeding and of systemic infections. Further studies are necessary to establish the real utility of the laparoscopic splenectomy in MDS.

Abstract: 539 Poster: 446

THE SIMULTANEOUS DIAGNOSIS OF KAPOSI SARCOMA AND MDS RAEB-II IN A HUMAN IMMUNODEFICIENCY VIRUS NEGATIVE PATIENT

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Background: Kaposi sarcoma (KS) is a multicentric neoplasm of viral etiology arising from endothelial cells and/or pericytes. It has four forms: classic or Mediterranean, endemic or African, posttransplant or acquired immunodeficiency syndrome (AIDS)-associated KS. The association between KS and lymphoreticular tumours is well established. Only a few KS patients with AML have been reported. Here, we present the first adult patient with HIV-negative KS and MDS (RAEB-II). Case Report: A 75-year-old male was admitted to our department in May 2005 with a swollen left lower extremity and purple macules and papules over his pretibial area. On physical examination, he had bilateral cervical and inguinal lymphadenopathies, 2 cm of splenomegaly. Laboratory data were as follows: hemoglobin, 11.6 g/dl; hematocrit, 35.8%; leucocytes, 3400/mm3; platelets, 284000/mm3; ESR, 13 mm/hr; LDH, 272 U/L (N<192). Peripheral blood smear showed 70% neutrophils, 1% basophil, 22% lymphocytes, 7% monocytes; erythrocytes and neutrophils had dysplastic features. The examination of the bone marrow aspiration showed dysplastic features of all 3 lineages with 16% myeloblasts. Flow cytometric analysis of the bone marrow confirmed the presence of about 15% myeloblasts. Thorax and abdominopelvic CT scans revealed mediastinal, intraabdominal, inguinal lymphadenopathies and splenomegaly. The histopathologic examinations of the skin and inguinal lymph node biopsies were compatible with KS. Blood samples tested by ELISA failed to show antibodies against HIV-1. The patient`s karyotypic analysis was normal (46, XY). The patient was decided to be treated like AML and induction chemotherapy with cytosine arabinoside and idarubisin was started. The KS lesions faded to some extent; but, they did not disappear. The patient is currently using imipenem+amikasin for his episode of febrile neutropenia; and his whole blood count parameters began to improve. Conclusion: The simultaneous appearance of KS and MDS has not been reported before. We propose that our patient`s immunosuppression associated with a potentially oncogenic virus might have contributed to the appearance of KS. The patient is still being followed up at our hematology clinic.

Abstract: 540 Poster: 447

CYTOKINETIC OF BONE MARROW AND BLOOD CELLS AND DETECTION OF CHLAMYDIA TRACHOMATIS INFECTION IN LEUKOCYTE CULTURES OF PATIENTS WITH MYELODYSPLASTIC SYNDROMS

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Complexity of etiology and pathogenesis of Myelodysplastic syndromes (MDS), difficulties with diagnosis and prognosis, makes it necessary to investigate cytokinetic of blood and bone marrow cells. For this aim we used original leukocyte culture methods that enables to reveal malignant nature of blast cells according to their proliferative activity, estimate functional activity of immunocompetent cells according to macrophage-lymphocyte rosettes (MLRos) formation and reveal Chlamydia trachomatis inclusions. 33 pa-

tients with MDS were studied. Results of our research support necessity of changing MDS classification from FAB to WHO: inclusion of syndrome of refractory pancytopenia with multilineage dysplasia (RPMD) -30% of our patients had this syndrome and exclusion of RAEB in transformation as in cultures of patients either with RAEB or RAEB-t according to FAB classification active proliferation of blast cells was revealed. These patients composed 43%. Patients with RA composed 27 % (1 case RA with ringed sideroblasts). In cultures of 8 patients (3 with RA and 5 with RPMD) proliferation of blast cells predicted development of RAEB before its clinical onset. Among these patients low proliferate activity of blast cells (blasts constituted 5-15% of cells in culture smears) predicted that these patients would remain at the stage of RAEB and not develop AML (4 cases); in these cases only very mild cytostatic therapy may be useful. In other 4 patients and in the patients with RAEB active proliferation of blast cells were observed in vitro (blasts constituted 30-80 % of cells in culture smears similarly to AL patients) showing that AML was impending. Morphocytochemical features of blast cells in vitro reflected the type of impending AML. We suppose that these patients need definite cytostatic therapy. Revealing of high indices of MLRos in 70% of MDS patients underlined possible role of immune conflict in development of cytopenia. Detection of inclusions of C trachomatis in cultures of 5 MDS patients showed existence of chlamydial infection. In 1 patient with RA and in 1 patient with RCMD antichlamydial therapy separately appeared most successful. Patients became transfusion independent for several months though the patient with RCMD later required also immunosupprresive therapy with Cyclosporin A. Considering complexity of pathogenesis of MDS, cultural studies are necessary for the diagnosis and right strategy of therapy. Proliferate activity of blast cells in vitro predicts the outcome of MDS. Absence of blasts in culture confirms the diagnosis of RA or RCMD whereas their presence points to the diagnosis of RAEB and their active proliferation predicts the development of AML. High indices of MLRos show necessity of immunosuppressive therapy. As far as C trachomatis infection appears not only burdensome, but even crucial to some patients with MDS, definite attention must be paid on the detection and treatment of this infection

Abstract: 541 Poster: 448

MAST CELLS PRESENCE IN THE SPLEEN OF PATIENTS WITH IDIOPATHIC MYELOFIBROSIS

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Idiopathic myelofibrosis (IMF) is chronic myeloproliferative disease characterized by splenomegaly, immature granulocites and erythroblasts in the blood and bone marrow, so as bone marrow fibrosis. Mast cells (MC) participate in broad spectrum of bilogical processes including diseases associated with chronic inflamation, tissue remodeling and pathologic fibrosis. As there is not enough avable data about presence and role of MC in IMF, the aim was to analyze MC in spleen of IMF patients. From 46 patients with IMF, 8 were splenectomized and their samples were paraffin embeded, cuted and stained with silver, Van Gieson for fibrosis identification and Toluidine blue, Giemsa and Spicer method for MC identification. Control spleen samples were taken from accidantely died persons during autopsies. MC were rarely detected according to all used methods in control spleens, but MC presence were evident in IMF spleen samples. MC were smaller than normal, oval shaped, highly granulated and scattered in connective tissue septa and parenchyma of spleen, usually local9ized perivasculary. The numer of MC increased with enlargement of the spleen, so as and the fibrotic fields which become more numerous too. Results have shown that MC are rare cell population in normal spleen, but their presence increase in IMF. Distribution and staining properties of MC have shown heterogenity, so it is supposed that they may initiate repair processes, tissue remodeling and dysplastic transformation in spleen. Activation of MC, followed by tissue injury and fibrotic phase are the part of IMF and effects of MC need to be discussed more in future.

Abstract: 542 Poster: 449

CHILDREN`S PRIMARY MDS AND DEVELOPMENT IN ACUTE LEUKAEMIA

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Background: Myelodisplastic syndrome(MDS) is a heterogenous group of clonal stem cell disorders. MDS in children and adolescents is a rare clonal hematopoietic disorder charac terised by multilineage dysplasia. Its clinical course is variable, ranging from spontaneous short remission to rapid transformation to therapy resistant acute leukemia. According FAB criteria more than 80% of children`s primary MDS belong to the more advanced stages. Method: Between 1995-2003y 10 patients with primary MDS (6boys,4girls;aged from 9m-to 15y)were diagnosed in our unit. Diagnosis based on peripheral blood and bone marrow aspiration biopsy materials, cytomorphology, cytogenetic analysis (G-banding,routine analysis) and immunophenotyping (Flow cytometry) 4 pts. Control of BM smears were mand atory of each two weeks. The patients were classified according FAB group. 2 patients had RA, 5 pts RAEB, 3 pts RAEB-t. At first 4 admitted pts suspected to haemolitic anemia, due to high reticulocytosis (30-163%) but Coombs direct and indirect testes were negative. Patients characteristics and treatment options are presented in tab 1. The chromosomal disturbances were detected in 4 cases,5have normal karyotype. 7 pts developed AML,from there 4cases of AML-M6, 2 ALL, one lost.Results: As initial therapy pts were treated according their condition with RBC and platelets transfusion, by use of acidi folici, corticosteroids, r-hEpo(Recormon) and low doses of C-ARA. After transformation in acute leukemia by chemotherapy AML BFM 87,93, ALL BFM90, CAPIZZI+VP16. One 13y old girl after complete remission underwent allogenic bone marrow transplantation, but relapsed after 8 months. Only 9m old boy is alive and well.2 pts died with systemic fungal infection, 7 patients with chemotherapy were died with vary complications

Abstract: 543 Poster: 450

CYTOGENETICS FINDINGS IN 133 TURKISH PATIENTS WITH MYELODYSPLASTIC SYNDROME

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Myelodysplastic syndromes (MDS) are a group of myeloid hematopoietic malignant disorders. Clonal chromosome abnormalities are found in 30-50% of primary MDS. Although chromosomal losses and gains are predominantly characterized, a specific chromosomal aberration has not been defined. The aim of this study was to identify the specific and predominant chromosomal abnormalities in Turkish patients with MDS. Chromosome analyses were performed in 133 cases of MDS using direct and 24 hours culture of bone marrow cell and GTG banding technique and in some cases FISH technique was used to solve the complex rearrangements. Their median age was 58.4 years and the disease was equally frequent in two sexes (67 female: 66 male). Cytogenetically, abnormal karyotypes were observed in 55 cases (41.3 %), 22 of whom had numerical changes, 25 structural changes and 8 both numerical and structural changes. The most frequent chromosomal abnormalities were deletion of 5q, monosomy 7, loss of chromosome Y, deletion of 20q, and structural changes of chromosome 1. Some rare rearrengements were also encountered including t(1;21), t(11;17) and also complex karyotypes were observed in 3 cases. Cytogenetic results are discussed with the clinical features and prognosis of our patients and are compared the related literatures.

Abstract: 544 Poster: 451

LACK OF MAJOR RESPONSE ON CYCLOSPORINE THERAPY IN IMMUNOLOGICALLY ACTIVE PATIENTS WITH MYELODYSPLASTIC SYNDROME: A PRELIMINARY REPORT

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Supportive therapy remains the mainstay of therapy for the patients with myelodysplastic syndrome (MDS). It has been reported that immunosuppressive therapies might be effective for a certain subset of patients with MDS. We aimed to investigate the effect of cyclosporine (CyA) in patients with MDS who have positive immunologic activation parameters. The Study group consisted of 7 patients (6 refractory anemia; RA,

and 1 refractory anemia with ringed sideroblast; RARS). Bone marrow was normocellular in 1, hypercellular in 4, and hypocellular in 2 cases. All of the patients were transfusion dependent. Immunologically active MDS patients were defined by an increase in two or more parameters including erythrocyte sedimentation rate, C reactive protein, beta 2-microglobulin, interleukin-6, tumor necrosis factor-alpha. CyA was given at a dose of 3-5 mg/kg per day. No major response was observed in a period of six months. Two patients (one of RA, and one of RARS) showed a minor response in which the first effect of this therapy was evident after a period of 3 months. An increase in the platelets and leukocyte count was seen in two patients. The responded cases to CyA had hyperplastic bone marrow. Five cases of RA did not respond to CyA therapy. No severe infection and/or renal complication was observed during therapy. In conclusion, CyA could not be an effective option of therapy in patients with MDS even they have positive immunologic activation parameters associated with MDS.

Abstract: 545 Poster: 452

CASE OF A PATIENT WITH MYELODYSPLASTIC SYNDROME AND MILLIARY TUBERCULOSIS

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BACKGROUND: Due to abnormalities to cellular immunity, patients with Myelodysplastic Syndrome (MDS) are predisposed to infections. Despite this fact, only sporadic reports of tuberculous infection, especially extra-pulmonary, in patients with MDS have appeared. AIMS: In order to draw clinician`s attention to this emergent pathogen and to stress the laboratory`s ability for quick Mycobacterium isolation and determination of antibiotic susceptibilities within a few days, we report on the case of a patient with diagnosed MDS and milliary tuberculosis. CASE REPORT: A 68-year-old patient, with already diagnosed MDS, was hospitalized due to fever of unknown origin (FUO). There were no indications of pulmonary involvement. Within the course of investigation a bone marrow biopsy was performed. Bone marrow aspiration was directly inoculated into tuberculosis-specific MB/ Bact Blood Culture Bottles and placed in the MB/Bact automatic colometric detection system (MB/BacT System -Organon Teknika). After 7 days of inoculation a positive signal was given. Identification of Mycobacterium tuberculosis complex was made by AccuProbe System (Gen-Probe). Reverse hybridization (GenoType System) verified the presence of Mycobacterium tuberculosis. Drug susceptibility test with the proportional method revealed no resistance. A combined antituberculous chemotherapy was given and full recovery of the patient was achieved. CONCLUSION: Bone marrow investigation is of great relevance in our effort to confront challenges such as FUO in patients with MDS. Early bone marrow biopsy not only reveals the histological picture and demonstrates disease process such as granulomatous disorder, but also gives us the opportunity of timely detection and isolation of Mycobacterium along with quick antibiotic susceptibility determination. The presence of Mycobacterium should never be ruled out if no pulmonary symptoms or signs are present and it always should be included in the differential diagnosis of FUO in patients with MDS.

Abstract: 546 Poster: 453

MYELODYSPLASTIC SYNDROME ASSOCIATE WITH CHEMICAL EXPOSURE IN BOTH SIBLINGS WHO HAVE GENETIC POLYMORPHISM OF METABOLIC ENZYME

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It is known that the environmental exposures to drugs or chemicals may trigger the bone marrow failure. Although most reported cases are acquired aplastic anemia, there are only limited case reports of myelodysplastic anemia (MDS) in chemical-exposed patients. Here in, we present two chemical-exposed siblings who developed MDS. The first patient was a 27-year-old man who had started working on wood preservatives, and glues. He did not have any history of special medications or diseases, nor was he afflicted by any apparent radioactive injuries. Four years before admission, the patient submitted to a medical checkup for workers, and after this date, each year he has been admitted to the hospital for the con-

trol of his general condition. The hematologic test results showed that the patient had anemia, leukocytopenia, and thrombocytopenia since 2001. The patient transferred to Başkent University Adana Hospital for diagnosis. Results of the bone marrow aspiration showed hypercellular bone marrow with multilineage dysplasia. Cytogenetic analysis revealed normal karyotype. The findings for gene polymorphysm related to the metabolic detoxification anzymes glutathione S-transferase (GST), and Nacethyl transferase (NAT) indicated thet the patient was genetically susceptible to developing toxicity. The second patient was first patient`s brother (45-year-old), and he gave a blood sample for checkup. Same hematological abnormalities and gene polymorphysm were found in the second case who had also a history of working in the same work sites with his brother. These cases suggests that frequent exposure of chemicals related with their job may cause toxic effect that lead to a secondary MDS. People working in the work sites with any chemical exposure should be submitted to regular checkups especially for the gene polymorphysm related to the metabolic detoxification enzymes.

Abstract: 547 Poster: 454

PROTEINURIA IN PATIENTS WITH MULTIPLE MYELOMA: QUANTITATIVE AND QUALITATIVE CHARACTERISTICS AND PROGNOSTIC SIGNIFICANCE A 20YEAR STUDY IN A SINGLE UNIVERSITY CENTRE

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Introduction: There is a quite variable and non-pre-dictable correlation between the proteinuria, its light chain (LC) component, renal failure (RF) and the survival of the myeloma patients. Aim: To analyze the quantitative and qualitative characteristics of the proteinuria, its correlations with renal function, and its prognostic significance in patients with multiple myeloma (MM). Material and methods: 341 patients with MM are studied for a 20-year period (1984-2004), 186 m /155 f, mean age 62 years. The proteinuria is analyzed quantitatively and by immune electrophoresis. Four immune electrophoretical variants are described: physiological, tubular (LC and tubular proteins), mixed tubular (LC, tubular proteins and small quantity high molecular proteins); non-selective glomerular (LC and predominantly high molecular proteins). Statistics are performed using chi-square test, one-way ANOVA, Cox step-down regression analysis, survival curves of Kaplan-Meier and log-rank test (SPSS11.0). Results: Proteinuria, variable in grade was found (0,5g/l-28,4g/l) in 213 (62,5%) patients. Its frequency increases with the advance of clinical stages. Renal failure (RF) was found in 53,5% of the proteinuric patients (r=+0,35; chi-square <0,005). The grade of proteinuria does not influence the frequency of RF, nor its outcome: among the patients with marked (1,0-4,0 g/l) and intermediate (4,0-10,0 g/l) proteinuria almost equal percentage develop RF (56,4%/53,5% respectively). In the group with marked proteinuria non-reversible RF was not found, in the group with massive proteinuria in 37% the RF was reversible. The tubular variant of proteinuria was found in 54%, mixed tubular in 20.7%, glomerular in 15.45%. Physiological proteinuria (9.8%) was not found in the patients with Bence Jones and IgD myeloma. Tubular variants more frequently go with non-reversible RF (p=0,001); Tubular variants correlate with beta2 microglobulin (p=0,001) and the degree of bone marrow plasma cell infiltration (p=0,02). LC in the uroprotein were found in 183 (85,9%) patients, kappa/ lambda=1,56/1,0. Between LC proteinuria and the frequency of RF was found a moderate correlation (r=+0,46; chi squre <0,005). The frequency of BJ proteinuria increases with the grade of proteinuria (p=0,05) and is highest in the glomerular variants (p=0,02). Between the level of Ca, LDH, CRP and type/grade of proteinuria no correlation was found. Patients with physiological and low-grade proteinuria have the longest survival (MS=38 and 34 months respectively), those with mixed tubular variants and the combination RF+non-selective tubular proteinuria have the shortest survival, 19 and 7 months respectively. Conclusion: The immune electrophoretical analysis of proteinuria is a quick method, which defines the involvement of the elements of the nephron in the disease and proves the relation of tubular proteinuria with the most manifest lesions in the collector system and the development of renal failure.

Abstract: 548 Poster: 455

CHOLESTEROL LEVELS IN PATIENTS WITH MULTIPLE MYELOMA

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Background: In a few experimental and clinical studies, decrease in the levels of serum cholesterol was reported in multiple myeloma (MM). Aim of the study: To evaluate the lipid parameters in patients with MM. Material and Methods: Eighty-six patients with MM (48 men, mean age 60 ± 11 years), diagnosed in Hematology Division of Internal Medicine Department of Medical School of Adnan Menderes and Ege Universities according to Kyle-Greipp criteria, were enrolled to the study. In control gorup, there were 71 healthy persons (42 men, mean age 53 ± 8 years). Lipid parameters including total cholesterol (TC), high-density cholesterol (HDL-C), very-low density cholesterol (VLDL-C) and triglyceride (TG) were studied in both groups. One-way ANOVA and student-t test were used in comparison of the groups. Values of $p<0.05$ were accepted as significant. Results: Sixty-eight (79%) and 64 (76%) of patients were in IgG type and stage IIIA, respectively. The levels of TC, LDL-C and HDL-C in patients with MM were lower than control group ($p<0.001$). However the levels of VLDL-C and TG were not statistically significant ($p>0.05$). While the lowest levels of TC and LDL-C were in patients with stage-II, the highest levels of TC and LDL-C were in patients with stage-I (Table 1). These rates were significant ($p<0.01$ and $p<0.05$, respectively). Lipid parameters were not different in Ig types ($p>0.05$). Conclusison: We found decrease in the levels of cholesterol in patients with MM in this study. Cholesterol plays an important role in the synthesis of cell wall. This may be due to the utilization of cholesterol by plasma cells.

Abstract: 549 Poster: 456

CLOSE CORRELATIONS BETWEEN CD20 EXPRESSION AND A SMALL MATURE PLASMA CELL MORPHOLOGY AND T(11;14) IN MULTIPLE MYELOMA

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Introduction: Stratification of patients with multipe myeloma may be no less important than malignen lymphoma. To treat CD20-positive B cell lymphoma rituximab is the drug of choice. It has been previously reported that CD20-positive multiple myeloma featuring small tumor cells is a subgroup associated with t(11;14) translocation. Patients and methods: Between 1996 and 2003, chromosomal analysis by the G-banding technique was conducted in 138 patients with multiple myeloma when they were first seen at this hospital. Surface marker analysis was performed in 47 of the 138 patients during the same period and used by FACSCalibur. When the t(11;14) translocation was identified, it was determined by immunohistochemistry whether CD20 antigen was expressed or not. In CD20-positive patients, CD19 expression was also assessed and the presence of t(11;14) translocation was re-investigated by FISH analysis. Cyclin D1 expression was assessed immunohistochemically, and the size of the myeloma cells and the survival period after diagnosis were reviewed individually. Results: About 15% of patients(7/47cases) were CD20-positive, small mature myeloma cells, positive cyclin D1 in nucleus and 11;14 translocation. When single-color analysis for CD20 was performed, CD20 was positive (20% or more) and CD19 was negative (10% or less) in five patients. In these five true CD20-positive cases, cyclin D1 was expressed in the nucleus and the t(11;14) translocation was identified by FISH, although the karyotype was normal by the G-band-ing technique. In addition, small tumor cells were predominant in bone marrow. These features of the 5 patients resembled those of the 7 patients with t(11;14)(q13;q32) translocation identified by the G-banding technique. In contrast, all of the four CD20-positive, CD19-positive patients or false CD20-positive patients (due to the presence of concomitant normal B lymphocytes), had neither the t(11;14) translocation nor expression of cyclin D1. In these 4 patients, large myeloma cells were conspicuous. In some patients, two-color analysis of CD38 and CD20 was conducted. In a CD20-positive, CD19-negative patient with t(11;14)(q13;q32) translocation identified by the G-banding technique, CD20 was expressed by the fraction of strongly CD38-positive myeloma cells. Discussion: Two color analysis of CD38~CD20 antigens may be necessary to investigate CD20 expression on myeloma cells. Rituximab may be effective for the treatment of CD20-positive multipe myeloma. Autologous peripheral blood stem cell transplantation after purging with rituximab should also be evaluated.

Abstract: 550 Poster: 457

THE ALBUMIN AND M-PROTEIN RATIO DETERMINING PROGNOSIS IN MULTIPLE MYELOMA

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BACKGROUND Finding authentic prognostic factors in Multiple Myeloma (MM) happens to be a real challenge. Several attempts might be found in the literature for that purpose. It is because those factors in use for determining prognosis failed to find the group of patients at high risk at the time of diagnosis or methods, like plasma cell labelling index (PCLI) are not available in all laboratories. The so-called myeloma cytochin: IL-6 has at least dual main effect, like stimulating pathological plasma cell proliferation forming monoclonal protein and also inhibiting liver cells producing albumin. These two effect of IL-6 might be easily measured. AIM Our study aimed to find easily available routine laboratory tests for determining prognosis early in the course of the disease in Multiple Myeloma patients. METHODS In this retrospective study data of 114 consecutive multiple myeloma patients followed in our university hospital from 1981-1996 had been analysed. Male/Female ratio: 68/46, mean age: 63 yrs, subtype distribution: IgG 73, IgA 32, IgM 3, light chain: 6. At that time the therapy for MM patients were mainly the combination of Melphalan (M) and Prednisone (P) with cyclophosphamide (C), Vincristine (V), carmustine, adriamycin, like MP, VMCP or M2, and VAD protocols. Routine laboratory checkup included urine and serum protein electrophoresis studies, total blood counts, LDH, karyotype analysis, bone marrow aspiration cytology. The staging procedure was carried out according to Durie and Salmon. RESULTS Our results show that those patients who had Albumin/ Mproteint (A/M) ratio below 1 at diagnosis and it remained so in the course had significantly (p= 0,00048) shorter life span (mean: 1,5 yrs) in comparison to those having A/M above 1 continously (mean: 3 yrs). In all other respects our data were comparable to previous findings like that the early onset disease is somewhat more malignant, type IgG is more favourable than other subtypes concerning life expectancy. According to the initial WBC-estimating the cutoff value at 4,5x10 9/l-patients staring with WBC< 4,5 lived significantly (p= 0,016) shorter (24,2 months) in comparison to those having WBC > 4,5 (mean survival: 41, 7 mo). Interestingly in our cohort the initial WBC was independent from the bone marrow infiltration rate estimated by aspiration cytology analysis. Patients with stadium type III/B lived shorter (26,6 mo) than those in stadium I/A (43 mo) (p=0,11). In our cohort LDH level did not altered significantly from normal. CONCLUSIONS In MM the A/M ration might be effectively used in combination with other factors proven to be useful in determinig prognosis. As disease prognosis is determined by the therapy applied and also of disease characteristics, further studies are needed to determine whether A/M ratio will or will not be applicable for therapeutical modalities other than listed above.

Abstract: 551 Poster: 458

EFFECT OF ZOLEDRONIC ACID AND RITUXIMAB COMBINATION ON MYELOMA CELL LINES:

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Multiple myeloma is a clonal neoplastic disorder of plasma cells. Zoledronic acid has an important role in the management of multiple myeloma. Addition of rituximab to chemotherapies has become a stantart theuropathic approach in the treatment of CD20 positive non-Hodgkin lymphomas. However, its role in the treatment of multiple myeloma is arbitrary. It is well known that rituximab can augment the effect of chemotherapatic agents in non-Hodgkin lymphomas. In this study we investigated the effect of zoledronic acid and rituximab alone or in combination on ARH-77 and RPMI 8226 myeloma cell lines. XTT test was used for proliferation inhibition analysis. Different concentrations of zoledronic acid and rituximab were tested. Isobologram analyse were used as statistical test. CD20 expression of ARH-77 cells were 96% and rituximab produced significant cell proliferation inhibition (IC50 4.3 μg/mL). CD20 expression of RPMI 8226 cells were 6% and limited proliferation inhibition were observed with rituximab (IC50 45 μM). IC50 values for zoledronic acid were 39 μM and 6 μM for ARH-77 and RPMI 8226 respectively. Combination of these two drugs showed an antagonist effect on both cell lines in isobologram analyse (CI>1). Our re-

sults supported the previous findings that rituximab can be used in the treatment of CD20 positive multiple myeloma or plasma cell disorders. Regarding our findings, the antagonist effect of two the drugs should be taken into account when a combination therapy is planned.

Abstract: 552 Poster: 459

BORTEZOMIB IN REFRACTORY MULTIPLE MYELOMA - THE FIRST EXPERIENCE IN CZECH REPUBLIC

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Further advances have been made in understanding the mechanisms involved in the myeloma pathogenesis and elucidation of critical signaling pathways as thera-peutical targets. Proteasome inhibitors are the example of this new approach and bortezomib is the first agent in this class to enter clinical trials. In 6 hematological centers in Czech republic 41 patients with refractory/ relapsed myeloma had been treated with bortezomib (Velcade, Millennium Pharmaceuticals) in the last year. The initial dose 1.3 mg/m2 of Velcade was given, in 1 case the dose was adjusted due to pre-existing renal failure to 1 mg/m2. The data of 38 patients were evaluated at time of submission abstract. The response was achieved in 17 patients (45%). Three patients had complete, 11 partial and 3 minor response. In 8 cases stabilization of disease was observed and 10 patients progressed during therapy. The most common adverse events were thrombocytopenia, anemia, granulocytopenia, neuropathy, gastrointestinal complication, renal failure and fatigue. The risk of grade 3/4 thrombocytopenia was 34%, granulocytopenia 20%, anemia and/or GIT toxicity 12% and neuropathy 10%. Peripheral neuropathic pain of grade 3 was reported in 4 cases, in one patient therapy had to be stopped due to this compliacation. We confirmed promising results of phase II trials.

Abstract: 553 Poster: 460

A VAD THERAPY RESISTANT MULTIPLE MYELOMA TRANSFORMED FROM CLL

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The occurrence of chronic lymphocytic leukemia (CLL) and multiple myeloma (MM) in a single individual is rare and there is no consensus about the clonal relationship of the two disorders and no clinical data exists about the response to therapy. We describe a 58-years old patient who developed a stage IIIb IgA . MM 3 years after the diagnosis of Stage 0 CLL. While he was followed without any treatment for CLL, he presented with acute renal failure. Work-up for acute renal failure revealed hypercalcemia, anemia and lytic bone lesions. A bone marrow biopsy was carried out and he was diagnosed as MM. In bone marrow biopsy 98.5 % of cells were plasmocytes. In the serum immunelectrophoresis IgA and kappa were elevated. The conventional cytogenetic analysis was normal. VAD (vincristine, adriamycin,dexamethasone) chemotherapy was started and after 5 courses of therapy bone marrow biopsy was reevaluated, revealing that both B-chronic lymphoproliferative disorder and plasma cell neoplasia persist. In addition to this, the amount of Paraprotein and Beta2 mcg level were unchanged after 5 courses of VAD therapy. So the patient was accepted as refractory to VAD therapy and thalidomide + dexamethasone therapy was started. Although the results of Thalidomide therapy was good it was stopped after 1 month, because of severe neurotoxicity. Bortezomib (Velcade) therapy is planned.MM and CLL are closely related B-cell cancers. Second malignancies are frequent complications in patients with CLL. Although the caryotypic analysis was normal in our patient, in the previous reports, cases mostly have abnormal cytogenetics. We didn`t perform molecular analysis. There are some reports showing that plasma cells and CLL cells have the same clonal origin. The unresponsiveness to the first line (VAD) therapy may be due to drug resistance gained by malignant transformation during CLL. We didn`t perform any clonality assay to our patient. Although VAD therapy is not a standart therapy for CLL, resistance of the CLL cells to the VAD therapy may support that they may have the same drug resistance pattern coming from the same clone. If this is true we may expect the same re-

sponse pattern to bortezomib in both types of malignant cells.

Abstract: 554 Poster: 461

ARTERIAL THROMBOSIS IN REFRACTORY MULTIPLE MYELOMA PATIENT TREATED WITH THALIDOMIDE AND DEXAMETHASONE: CASE REPORT

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Background: An increased incidence of deep venous thrombosis has been described in multiple myeloma (MM). Its pathogenesis is multifactorial but the presence of other states of inherited or acquired thrombophilia can increase this hypercoagulability. Recently, thalidomide has been used to treat refractory MM and an increased risk of thrombosis has been reported when this drug combinated with other chemotherapeutic agents. Aims: In this study, we present a MM patient who developed arterial thrombosis concluded in a chronic infarction of the bilateral posterior lobes of the cranium during treatment of thalidomide. Case: A 48-year-old man with stage III B IgG lambda; MM was treated with conventional chemotherapy (4 cyclus VAD) at diagnosis and he achieved partial response. The disease relapsed while the patient was planned to be transmitted for autologous peripheral stem cell transplantation to another hospital and thalidomide was initiated at 200 mg/d in combination with 4-d cycles of dexamethasone. He tolarated the dose well and the dose was increased to 400 mg/d 2 weeks later. Before thalidomide was initiated his blood urea nitrogen and serum creatinine levels rised to 151 mg/dL and 19.7 mg/ dL, respectively. He was started bicarbonate haemodialysis (HD) for four hours every two days. In the second month of treatment, the patients presented with progressive drowsiness. On examination he had normal physical examination and his renal functions improved due to HD. Laboratory studies showed: haemoglobin 7.7 g/dL, platelet count 42000/µL, and normal leucocyte count, prothrombin time, activated partial thromboplastin time, fibrinogen level and urinanalysis without proteinuria. There was no a evident neuropathy except confusion. The cranial MR showed that a chronic infarction of bilateral posterior parietal lobes were evident, which was suggestive of arterial thrombosis. Except for lytic lesions of the cranial bones, the computed tomography of the cranium before treatment with thalidomide was normal. Genetic mutations related with cardiovascular risk were studies in the patients; FV G1691A(Leiden), FV H1299R (R2), Prothrombin G20210A, MTHFR C677T, A1298C, beta;-Fibrinogen -455 G-A, Factor XIII V34L, GPIIIa L33P (HPA1), HFE C282Y, Apo B R3500Q and Apo E2/E3/E4 were normal and 2 heterozygote mutations (MTHFR A1298C and PAI-1) were detected. Conclusion: The side effects of thalidomide are well recognized and include peripheral neuropathy, sedation, constipation, hypothroidisim, skin rashes and venous thorombosis. Thoromboembolic episodes are usually venous but arterial occlusion is rare. Thalidomide can alter the interactions between cancer cells and coagulation factors induce prothrombotic factors and activate platelets and vascular endothelial cells. We presented a rare case of arterial thrombosis during thalidomide treatment.

Abstract: 555 Poster: 462

BENIGN MONOCLONAL GAMMOPATHY ASSOCIATED WITH DIFFUSE PLANE XANTHOMATOSIS AND BUDD CHIARI SYNDROME

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Background: Diffuse plane xanthomatosis is an uncommon condition characterized by yellow-orange plaques involving the eyelids, neck, upper trunk, buttocks and flexural folds. Histologically the lesions are characterized by a perivascular infiltrate consisting of foamy macrophages. Over half of the reported cases are associated with monoclonal gammopathy, cryoglobulinemia, or myeloproliferative disorders. We present a patient with benign monoclonal gammopathy associated with diffuse plane xanthomatosis and Budd Chiari Syndrome. Case: A 60-year old man was admitted to our hospital with complaints of fatigue, weakness, and skin pigmentation on eyelids, neck, upper chest and back, buttocks and upper arms and legs accompanied by itch for about three years (Figure 1). We detected pancytopenia, low serum albumin, and high globulin, an erythrocyte sedimentation rate of 90 mm/h, hyperlipidemia, impaired liver function tests, splenomegaly and esophageal varices. Markers for viral, autoimmune and other causes of chronic

liver disease were all negative. Liver biopsy was normal except for minimal cholestasis. Magnetic resonance portography showed thrombus in vena cava inferior at the level of diaphragma (Figure 2). Protein C, protein S, antithrombin III levels were normal. Factor V Leiden and prothrombin gene mutations, lupus anticoagulant, anticardiolipin antibodies, and cryoglobulin were negative. Complement C3c and C4 levels were decreased. Protein electrophoresis showed monoclonal gammopathy. Serum IgG 24.7 g/L (7.5-15.6), and kappa light chain, 18.6 g/L (6.3-13.5), were high. Bence Jones proteinuria was negative. Serum and urine immunoelectrophoresis confirmed IgG kappa type monoclonal gammopathy. Direct radiographies did not show lytic lesions or vertebral compression fractures. Rectal biopsy was negative for amyloidosis. In bone marrow biopsies there was no increase in plasma cells. With these findings the patient was considered to have benign monoclonal gammopathy. Skin biopsies from hyperpigmented areas revealed diffuse perivascular foamy histiocyte infiltration consistent with diffuse plane xanthomatosis. Conclusion: This is a rare case of benign monoclonal gammopathy associated with diffuse plane xanthomatosis and Budd Chiari Syndrome. Diffuse plane xanthomatosis is an uncommon condition of which association with monoclonal gammopathies is well known. The condition may arise as a result of perivascular deposition of lipoprotein-immunoglobulin complexes and complement consumption in this patient supports this hypothesis. Since we could not find any other cause, thrombus formation in inferior vena cava in this patient may be because of M protein. But it is not clear whether there is a causal association between benign monoclonal gammopathy, diffuse plane xanthomatosis and Budd Chiari Syndrome.
Figure 1. Diffuse plane xanthomatosis in a male patient with benign monoclonal gammopathy and Budd Chiari Syndrome

Abstract: 556 Poster: 463

EPIGENETIC DYSREGULATION OF THE DAP KINASE/ P14/HDM2/P53/APAF-1 APOPTOSIS PATHWAY IN MULTIPLE MYELOMA: PROGNOSTIC VALUE OF DAP KINASE METHYLATION

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Dysregulation of apoptosis, and thus the p14/DAP kinase/HDM2/p53/Apaf-1 pathway, is potentially important in carcinogenesis. Multiple myeloma (MM) is a disease characterized by survival advantage, and thus impaired apoptosis, of the neoplastic plasma cells. We analysed the potential dysregulation of the DAP kinase/p14/HDM2/ p53/Apaf-1 apoptosis pathway by gene hypermethylation in MM. Methylation of p14, DAP kinase and Apaf-1 was studied by methylation-specific polymerase chain reaction (MSP) with primers for methylated (M-MSP) and unmethylated (U-MSP) alleles 6 cell lines, and 60 primary myeloma marrow samples. Apart from complete methylation of DAP kinase in WL2, p14, DAP kinase and Apaf-1 were completely unmethylated in the six myeloma cell lines. 5-AC treatment of the completely methylated WL2 cell line showed re-appearance of the unmethylated allele and expression of DAP kinase transcript. DAP kinase was methylated in 31 (51.7 %) while p14 and Apaf-1 were completely unmethylated in all the primary myeloma samples. There was no correlation between DAP kinase methylation and age, sex, immunoglobulin subtype or Durie-Salmon stage at diagnosis. Median OS for patients with and without DAP kinase methylation were 34 months and 80 months ($p=0.005$). In multivariate analysis, only DAP kinase methylation remained an independent factor predicting inferior overall survival ($p=0.007$). In conclusion, DAP kinase, but not p14 and Apaf-1, of the DAP kinase/ p14/HDM2/p53/Apaf-1 pathway is frequently methylated in MM, and is of prognostic value in MM. Moreover, this is the first data on Apaf-1 methylation in MM.

Abstract: 557 Poster: 464

MULTIPLE MYELOMA-RELATED ANEMIA TREATED WITH-ERYTHROPOETIN:

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Anemia is a frequent problem in patients with multiple myeloma which sometimes requires regular blood transfusions. Aim of the study: We analyzed the effect of erythropoetin-beta on the hemoglobin level in patients with myeloma-related anemia. Material and methods: Five patients (3M/2F) with myeloma-related anemia, median age 63 years (range 44-78) were evaluated. Clinical staging according to Durie-Salmon classification was: II-B one patient, III-A one patient and III-B 3 patients. Three patients were in the onset of the disease, one was with advanced myeloma and one was in remission. They were all treated with conventional chemotherapy (4 pts according to VMCP and one patient according to MP). The median time from diagnosis to initiation of erythropetin was 20 months (range 3 months to 6 years). The mean Hb level was 7.7g/dl (range 6.9-8.6). Epoetin beta (Recormon-Roche) was administrated at a dose of 10,000 IU 3 times/weekly. Iron supplementation was not given to any patient because there was no evidence of ferro deficit. Results: Three out of five patients (60%) responded. Major and minor responses were defined as no need for transfusions and an increase of Hb level by >2gr/dl and >1gr/dl respectively. There were 2 major and one minor response. One patient achieved an increase of Hb level >2gr/dl within 4 weeks and the other within 6 weeks. The third responder became transfusion independent within the first 4 weeks of treatment but achieved an increase in the Hb level >lgr/dl even within 6 months and >2gr/dl within 10 months. No side effects were detected in these patients. Conclusion: Epoetin beta is a potent and safe agent that determines a rapid erythroid response in some patients with myeloma-related anemia and provides these patients to have a good quality of life.

Abstract: 558 Poster: 465

UNILATERAL BREAST INFILTRATION OF WALDENSTROM MACROGLOBULINEMIA IN A PATIENT WITH THE DIAGNOSIS OF BREAST CANCER TREATED WITH MASTECTOMY

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Waldenström Macroglobulinemia (WM) is a pleomorphic lymphoproliferative disorder that is characterized by the production of a monoclonal immunoglobulin M (IgM) protein and infiltration of the bone marrow with a mixture of small lymphocytes, lymphoplasmacytoid cells, and mature plasma cells. Although the neoplastic clone predominantly infiltrates the bone marrow, it can also infiltrate other organs including mostly lymph nodes, liver, and spleen. Breast infiltration has been rarely reported as case presentations in literature. We hereby report a case with breast infiltration of WM who has been followed up with the diagnosis of breast cancer for two years. Sixty seven year-old women presented with diffuse hardness in the right breast in 2001. In her history, she has a diagnosis of breast cancer in the left breast in 1998. Total left mastectomy was performed, and pathology was invasive ductal carcinoma with no axillary lymph node involvement. She had no complaint until 2000. Because of high sedimentation rate, she was evaluated in hematology unit and diagnosed as WM in 2000. She was screened by CT and mammography and no systemic involvement was detected and no treatment was given. In 2001, mammography of the right breast showed diffuse increase of breast density with no defined mass or microcalcifications. On US examination, whole breast tissue was hypoechoic. Biopsy from right breast revealed the WM infiltration of the breast tissue. After a short course of chlorambucil, remission was observed. In 2002, mammography and US confirmed complete regression of the findings in the right breast. Relapse had occurred at the same site in 2004, and treated with the same dose of chlorambucil without performing any biopsy because of low performance status of the patient. Remission was confirmed by mammography and US again, and the patient has been under follow-up for 10 months without any sign and symptoms. The relationship between WM and breast cancer remains to be elucidated and further studies are needed to clarify this phenomenon.

Abstract: 559 Poster: 466

PRIMARY PLASMA CELL LEUKEMIA: A CASE REPORT

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Plasma cell leukemia (PCL) is a rare and aggressive form of monoclonal gammopathy. PCL characterized by the circulating plasma cells (PCs >2.000/mm3 and more than %20 PCs in the peripheral blood differential count). Two types of PCL have been described, primary PCL and secondary PCL The prognosis for primary and secondary PCL is reported as being poor with median survival of about 6-8 months. Currently, no standard therapy is available, but intensive polychemoterapy aspecially autologous and allogeneic stem-cell transplantation appears to more effective than the conventional melphalan plus prednisone. We report on a patient with primary PCL in whom first-line treatment with VAD resulted a good response. A 52 year -old male presented in May 2005 with abdominal pain and fatigue. His laboratory studies mild anemia and thrombocytopenia.He had a white blood cell count of 7000/mm3 (%56 atypical lymphoplasmacytic cell on peripheral blood smear). Serum protein electrophoresis and immunofixation study revealed monoclonal lambda light chain.Bone marrow examination revealed % 90 cellularity with replacement of normal elements by sheets of plasma cells. Flow-cytometric studies performed on the peripheral blood confirmed CD38,CD138 expression by PC.He was treated with vincristine and adriablastina and dexamethasone. After therapy his general condition and laboratory results was normal.We are planning two cycle VAD therapy after autologous stem- cell transplantation. Primary PCL is a rare haematologic malignancy characterized by the presence of high number of circulating plasma cells. primary PCL has a poor prognosis when treated conventional therapy for myeloma. New treatment approaches are needed.

Abstract: 560 Poster: 467

HLA G EXPRESSION IN A PATIENT WITH WALDENSTROM MACROGLOBULINEMIA

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Waldenström`s macroglobulinemia (WM) is a clonal disorder of small lymphocytes that show maturation to plasma cells synthesizing IgM. WM most closely corresponds to the lymphoplasmacytic lymphoma. WM is frequently associated with other lymphoproliferative and immunologic disorders, such as autoantibodies, hypogammaglobulinemia and hyperreactive B cells. Immunophenotypic studies show that CD19, CD20, CD22, FMC7 positivity. CD38, the typical marker for multiple myeloma (MM), is found only on the plasma cells. In contrast with MM, cellular immunity and unaffected immunoglobulin levels are mostly preserved. Symptoms due to monoclonal Ig M,such as raynoud phenomenon, amyloidosis, cold agglutinin hemolytic anemia and peripheral neuropathy may be predominant. Lymphadenopathy and hepatosplenomegaly are seen in 40 % of patients. In treatment, nucleoside analogues, cyclophosphamides, chlorambucil either alone or in combination with glucocorticoids are used for at least three decades. Here we report a case of WM whose HLA G expression is very high. Our patient is 52 year old man with diagnosis of WM for three years. At the diagnosis his flowcytometric analysis of bone marrow showed that CD11b,, CD20, CD22, CD45 positivity. Because of hyperviscosity symptoms (such as headache, blurred vision, papilledema in fundoscopic examination) he was treated with eight cycles CHOP (combination of cyclophosphamide, doxorubicin, vincristine and prednisone) regimen and his hepatosplenomegaly was revealed and bone marrow infiltration of lymphomononucleer cells were disappeared. Ig M levels decreased from 25 g/dl to 11 g/dl and stable at these levels for eight monts with no any complaint. One year later, Ig M levels began to increase and bone marrow infiltration was reappeared. He had recurrent diarrhea and upper respiratory tract infection although there was not any hypogammaglobulinemia. At that time we examined HLA gene expression from his peripheral blood. Soluble HLA-G levels were found very high in both plasma and serum. HLA-G expression on T regulatory cells was also increased and this increment possibly causes suppression of NK cells and may be related to frequent viral infections.

Abstract: 561 Poster: 468

AMYLOID DEPOSITION IN KNEE AND ANKLE JOINTS IN A PATIENT WITH MULTIPLE MYELOMA

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Multiple myeloma (MM) is a disease which is characterized by the production of monoclonal M protein and abnormal plasma cell infiltration of

bone marrow and other tissues in some cases. MM is sometimes complicated by amiloidosis. Amyloid infiltration in vital organs can be fatal if left untreated. Amyloid deposition in joints can be detected in the course of systemic myeloma complicating with the restriction of movements of infiltrated regions. However, amyloid deposition in bilateral knees associated with other joint invasion has been reported very rarely. We hereby present a case with the diagnosis of MM complicated with amyloid deposition in bilateral knee and ankle joints under the treatment. Fifty four years old male patient was diagnosed as lambda light chain myeloma with the complaints of anemia and bone pain. A standard dose of VAD regimen was started and joint restriction in bilateral knee and ankle developed during the chemotherapy cycles. MRI screening showed bilateral meniscal low signal changes which were characteristic findings of amyloid pigments. Patient was treated with high dose chemotherapy with autologous peripheral progenitor stem cell support. Clinical and laboratory findings were evaluated as normal after BMT. He has been still under follow up. Big joint infiltrations by amyloid deposition should be carefully considered and evaluated in patients with joint complaints in the course of systemic MM:

Abstract: 562 Poster: 469

HIGH-DOSE MELPHALAN AND AUTOLOGOUS PERIPHERAL BLOOD STEM CELL TRANSPLANTATION IN MULTIPLE MYELOMA PATIENTS -5 YEAR EXPERIENCE AT A SINGLE INSTITUTION

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Objectives: High dose melphalan therapy (MEL 200, MEL100) followed by autologous stem cell transplantation (ASCT) has been carried out in our department since September 1999 as a promising treatment modality in patients with multiple myeloma (MM). We have recently collected and analyzed our data and have compared survival in four groups of patients: MEL 100, MEL 200, aged under 60 and over 60 years. Methods: The study population consisted of 59 MM patients aged 31 - 67 year, 31 men and 28 women. MEL 100 received 25 patients and MEL 200 was given in 34 cases. 42 patients were aged under 60 and 16 patients over 60 years. Serum and urine negative immunofixation were required for complete remission (CR). Results: The overall response (OR) rate was 84% with 25.9% of patients having a complete response. Total dose of mephalan was 662.5 mg and 421.6 mg in MEL 200 and MEL 100 respectively. There were any significant differences between OR and the number of deaths between groups MEL 100 and MEL 200 of the treated patients. The age of diagnosis and the type of MEL treatment did not significantly affect overall survival and the time to progression. The dose of CD34/kg did not affect the results of any MEL treatment type and the time of granulocyte regeneration. The transplant procedures were complicated in 62.1% of the cases, the most commonly by the neutropenic fever (23.4%), diarrhea (21.9%) and different infections (33.3%). There were any significant differences between the rates of transplant related complications in the analyzed groups. Conclusions: In our group of patients with MM the age of diagnosis and the type of MEL treatment do not significantly influence the overall survival.

Abstract: 563 Poster: 470

RIB RELAPSE OF SOLITARY BONE PLASMACYTOMA

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Background: Solitary extramedullary plasmacytoma (SEP) is a rare plasma cell tumour, which involves soft tissues without any signs of systemic spread. Aim: This case report describes rib plasmacytoma that is a rare type of malignancy of the chest wall Case Report: A 57-year-old man presented in march 1995 with a 4-year history of back pain. On physical examination, there was tenderness over his thoracic vertebrae. Magnetic resonance imaging (MRI) of his spine revealed a pathologic fracture at T7-8 with abnormal bone marrow signal intensity (Fig 1). In addition, paravertebral soft tissue mass was present effacing the thecal sac. MRI of the lumbar and sacral spine was unremarkable. A computed tomography (CT)-guided biopsy of the mass revealed a plasma cell neoplasm. Skeletal survey did not reveal any other lytic lesions. Hemoglobin level, white cell count (including differential), platelet count, serum calcium, renal functions, and serum

[beta]2-microglobulin level, serum protein electrophoresis were normal. Bone marrow aspiration and biopsy from the iliac crest showed no evidence of multiple myeloma. A diagnosis of solitary bone plasmacytoma (SBP) was made and he was treated with definitive radiotherapy receiving a total of 4000 cGy. In june 2005, he developed plevral pain and on CT was found to have a large mass destroying the ribs in left side of thorax (Fig. 2). Biopsy from this revealed a plasma cell tumor. Skeletal survey, MRI, blood counts, chemistries, immunoglobulin levels, and a third bone marrow examination were essentially unchanged. Radiotherapy was designed. Clinical and analytical follow-up after radiotherapy of the lesion is essential to detect possible local or systemic recurrences. Figure 1. MR image show the mass in Th7-8

Abstract: 564 Poster: 471

ATYPICAL CLINICAL COURSE OF MULTIPLE MYELOMA: MUSCLE INFILTRATION OF MYELOMA CELLS

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A 72 years old woman having physical rehabilitation because of muscle pain and paresthesia at the right scapular region was referred to a internal medicine specialist for the progression of her pain. On her thorax MR demonstrated metastatic mass on thoracal 6th vertebra and another mass deplasing the spinal cord. Pathologic invastigation of the vertebral mass revealed suspicious of plasmositoma like findings. Bone marrow aspiration and biopsy demonstrated atypical plasma cells (IgG and kappa positive) and diagnosed multiple myeloma. Six cycles of VAD chemotheraphy and local radiotheraphy administered. After 3 years she complained oedema and pain of the left upper extremity and oedema at the lower extremities. Left upper extremity soft tissue ultrasonography (USG) is performed. USG revealed myositis and necrosis. Left upper extremity doppler USG demonstrated deep venous trombosis of the brachial vein and its distal parts. Upper extremity magnetic resonance imaging(MRI) showed pathologic signals in the bone marrow and these doppler USG and MRI findings suggested multiple myeloma but muscle groups and soft tissue findings were not typical for multiple myeloma. Tru-cut muscle biopsy from left upper extremity is performed and on the pathologic examination there have been found soft tissue and muscle invasion of multiple myeloma. In this report we have presented a case with atypical soft tissue and muscle infiltration of myeloma cells.

Abstract: 565 Poster: 472

MULTIPLE MYELOMA IS DIAGNOSED AFTER TEN YEARS OF ACUTE LYMPHOBLASTIC LEUKEMIA

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Fifty-six years old man diagnosed as ALL in 1993 had under remission with vincristine adriablastina and prednisolone. Reinduction and CNS prohylaxis applied with vincristine and intrathecal methotrexate, respectively. Continuation therapy followed with oral methotrexate and 6 mercaptopurine for two years. Peripheral smear and hemoglobin electrophoresis exhibit thalasemia minor. He was under remission for 10 years until the patient was seen at the out-patient service with fatigue. Laboratuary values were following. Leucocytes: 4500 cells/mm3, Hemoglobin: 8,9 g/L, platelets: 79000 cells/ mm3. The bone marrow biopsy revealed 30 % of focal and interstisial plasma cell infiltraton. Bone survey have multiple lytic lesions. He was diagnosed as multipl myeloma (IgA and kappa) and underwent VAD chemotherapy. It is interesting that multiple myeloma is diagnosed ten years of ALL under remission.

Abstract: 566 Poster: 473

PROGNOSTIC SIGNIFICANCE OF SERUM PHOSPHORUS LEVEL AND ITS RELATIONSHIP WITH OTHER PROGNOSTIC FACTORS IN MULTIPLES MYELOMA

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We studied on serum phosphorus level of 110 multiple myeloma (MM) patients measured at the first admission to our institution and the relationship between that and other prognostic factors. Patients` age ranged between 42 and 83 years (median: 62 years), male/female ratio was 57: 53. Serum phosphorus level was significantly correlated with creatinine, β2-microglobulin, uric acid and serum cCa, bone marrow plasma cell%, hemoglobin, leukocyte count, platelet count and bone lesions. Creatinine, bone marrow plasma cell%, leukocyte count, uric acid, bone lesions, β2-microglobulin and serum cCa was significantly higher in the MM patients with hyperphosphatemia (serum P > 3.8 mg/dl). Hemoglobin was significantly lower in those patients (P = 0.031). The survival time was significantly shorter in the MM patients with hyperphosphatemia (P > 3.8 mg/dl) (P = 0.0001). It is suggested that serum phosphorus is the significant negative prognostic factor which mostly related to renal failure in MM patients.

Abstract: 567 Poster: 474

RHABDOMYOLYSIS ASSOCIATED WITH COMBINATION THERAPY OF DEXAMETHASONE AND THALIDOMIDE

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We describe a 55-year-old patient who developed rhabdomyolysis 2 days after starting combination therapy with dexametasone and thalidomide for the treatment of refractory multiple myeloma. The patient was resistant to dexamethasone containing induction chemotherapy. After switching from VAD (vincristine, doxorubicin, and dexamethasone) to DT (dexamethasone and thalidomide) therapy, he developed a severe muscular weakness and a laboratory evidence of the muscle breakdown. Muscle pain and biochemical markers of rhabdomyolysis did not normalizee until after 2 weeks. Clinical improvement was not apparent until after 5 weeks. Myelopathy due to dexamethasone has been well documented. However, to our knowledge, rhabdomyolysis associated with thalidomide has not been reported. We can conclude that it is possible that thalidomide may induce muscle injury. In this case report, we have discussed the possible relationship between the patient`s unusual condition and the administered chemotherapy.

Abstract: 568 Poster: 475

MYELOMATOUS INVOLVEMENT OF PERICARDIUM AND FATAL CARDIAC TAMPONADE IN PATIENT WITH MULTIPLE MYELOMA

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Multiple myeloma is an incurable plasma cell malignancy. It is usually associated with lesions of the skeleton, but cardiac complications are uncommon, and can lead to significant morbidity and mortality. Pericardial effusion is a well-known condition in patients with myeloma. However, myelomatous involvement of pericardium leading to cardiac tamponade is rare condition. The article describes the case of a 47-year-old female with rapidly progressive and ultimately fatal multiple myeloma. Pericardial effusion developed during progression of the disease. Treatment with dexamethasone-containing induction chemotherapy was unsuccessful. The patient continued to deteriorate despite supportive care. Percutaneous pericardiocentesis was performed. Cytological and flow cytometric analysis of the pericardial fluid showed atypical plasma cells. Treatment with intrapericardial administration of bleomycin was ineffective. The patient continued to deteriorate despite supportive care. Severe cardiac tamponade developed, and she died three months after diagnosis. This is the 22.th reported case of multiple myeloma featuring a pericardial involvement and impending cardiac tamponade.

Abstract: 569 Poster: 476

EARLY LYMPHOPENIA AND TUMOR NECROSIS FACTOR LIGAND-RECEPTOR AS RISK FACTORS FOR CHEMOTHERAPY-INDUCED FEBRILE NEUTROPENIA: PROSPECTIVE VALIDATION IN LYMPHOMA PATIENTS

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Background: Febrile neutropenia (FN) is a frequent complication of cancer chemotherapy. Many FN events occur early in the course of chemotherapy, therefore early prediction is important. As a simple and accurate way of identifying patients who are at risk of FN, a lymphocyte count on postchemotherapy day 5 was suggested. As an another factor to predict chemotherapy-induced myelosuppression, the role of tumor necrosis factor receptors with molecular weight of 75 kd (p75-R-TNF) was suggested. Aims: We conducted this prospective study to validate the early lymphopenia and p75-R-TNF as feasible risk factors for chemotherapy-induced FN in patients with non-Hodgkin¡¯s lymphoma. Methods: From October 2003 to March 2005, chemotherapy-naïve patients with non-Hodgkin¡¯s lymphoma who were planned to receive CEOP-B or R-CHOP chemotherapy at Guro Hospital, Korea University were enrolled. Blood sampling for p75-R-TNF was done before chemotherapy initiation and was stored at -70¡É until the assay. A complete blood count (CBC) was done on the 5th day of chemotherapy. The level of p75-R-TNF was measured using ELISA kit. Results: A total of 41 patients were enrolled. The male to female ratio was 20:21, and the median age was 58 years old (range: 29-87). Indolent histologic type and aggressive type were 4 and 37 patients, respectively. Twenty patients were limited stage (stage I, II) and 21 patients were advanced stage (stage III, IV). During the study period, seven cases of FN developed. Therefore, the incidence of FN was 17.1 % (7/41 patients). Using day 5-absolute lymphocyte count of 700/uL as a cutoff, the incidence of FN was significantly higher in patients with lymphocyte counts at day 5 ¡Â 700/uL (p = 0.003). Applying the day-5 lymphocyte count ¡Â 700/uL as a cutoff, the sensitivity was 100 % (7 of 7) and the specificity was 61.8 % (21 of 34). The positive predictive and negative predictive value was 35 % (7 of 20) and 100 % (21 of 21), respectively. The level (mean¡3/4SD) of p75-R-TNF for FN group was 1333.9¡3/41352.4 pg/ml and that of non-FN group was 1033.1¡3/41203.7 pg/ml. So there was no difference in the level of p75-R-TNF (p = 0.56). Conclusions: We confirmed the early lymphopenia as a useful risk factor for FN, but we failed to confirm p75-R-TNF as a predicting factor.

Abstract: 570 Poster: 477

MANAGEMENT OF A GENERALIZED ANAPLASTIC LARGE CELL LYMPHOMA OF T-CELL TYPE WITH A DOMINANT CUTANEOUS INVOLVEMENT

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We demonstrate a 63-year-old man presented with a 4-month history of a painless, progressively enlarging, huge exulcerated cutaneous tumor localized at the left periauricular region. At the presentation, the lesion was an indurated and ulcerated skin mass with 12 cm in diameter. Biopsy was taken from the skin tumor and the histopathological examination revealed an anaplastic large cell lymphoma (ALCL) with morphological features of primer cutaneous ALCL showing CD30/CD3/CD4+; CD5/TIA-1/EMA/ALK- immunophenotype. Apart from the skin tumor, palpable lymph node enlargement (2 cm or less) in the axillar, cervical and inguinal regions was also found during physical examination. The patient experienced a 15-kg weight loss along with night sweats. Complete blood-cell count, serum biochemistry and immunoglobulins, bacterial and viral cultures, HIV-1, HIV-2 and Epstein-Barr virus antibody titers were found to be within normal range or negative. Chest radiography and computed tomographic scans of thorax and abdomen showed generalized lymphadenomegaly with involvement of liver and spleen. Based on the clinical extent and the aggressive nature of this patient`s disease, systemic chemotherapy was administered. The patient was initially treated with CHOP (cyclophosphamide, Adriamycin, vincristine, prednisone), with a total of 8 cycles administered in 3-week interval. After the sixth cycle, irradiation was given to the bulky regions. By the completion of the second cycle, the skin lesion as well as the lymphadenomegaly had completely resolved (Figure 1). Anaplastic large cell lymphoma is a primary CD30+ lymphoma of

the T-cells, but frequently showing T-cell or null-cell immunophenotype. According to the clinico-pathological features and primary localization, ALCL can be divided in two categories: 1. systemic ALCL; 2. primary cutaneous ALCL. The systemic ALCL is predominantly a nodal disease, although skin involvement is a frequent finding. Cutaneous ALCL represents a primary cutaneous CD30+ large T-cell lymphoma that clinically originate in the skin and, after a variable period of time, may progress to involve lymph nodes, peripheral blood, and/or visceral organs, although this progression occurs only in a fraction of the cases. Our patient represents an ambiguous case where a large skin mass dominated the clinical picture, nevertheless generalized lymph node involvement and hepato-splenomegaly have also been found at presentation. According to the histopathological and immunophenotypic characteristics we propose that our case represents a primary cutaneous ALCL with early dissemination, nevertheless, there is no difference in therapeutic choices if we compare disseminated cutaneous or primary systemic ALCL cases.

Abstract: 571 Poster: 478

TWO SUCCESSFUL PREGNANCY IN A PATIENT SUFFERING FROM HAIRY CELL LEUKEMIA, TREATED WITH ALFA-INTERFERON

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Hairy cell leukemia (HCL) is a rare lymphoproliferativ disorder, characterized by pancytopenia and splenomegaly. Although infrequently seen, the management of cancer during pregnancy can be difficult for patients, their families and physicians as well. The concomitant occurrence of pregnancy and hairy cell leukemia is uncommon, five reports are published in the world literature. A review of the literature does not provide a carefully formulated treatment plan. We describe the successful management of a 27-year-old woman with two spontaneous pregnancies 6 months and 24 months after the diagnosis of hairy cell leukemia. The patient underwent alfa-interferon treatment with resolution of pancytopenia and normal progression of pregnancy without any complications. Alfa-interferon was well tolerated and the treatment was without significant adverse effects on the patient or fetus. This is the first case of hairy cell leukemia with two successful pregnancies during alfa-interferon treatment in the world literature. Conclusion: If management of hairy cell leukaemia is warranted in pregnancy, Interferon-alfa is a safe and effect treatment option during all pregnancy trimesters

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Abstract: 572 Poster: 479

DIFFUSE, LARGE CELL NON-HODGKIN`S LYMPHOMA IN A PATIENT WITH SELECTIVE IMMUNOGLOBULIN A DEFICIENCY

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Background: Selective Immunoglobulin A deficiency (IgAD) is the most common well-defined immunodeficiency disorder, occurring in approximately 1 of 600 individuals. Congenital immunodeficiency diseases such as ataxia telangiectasia, the Wiskott-Aldrich syndrome, IgA deficiency, common variable immunodeficiency, and severe combined immunodeficiency have been associated with a 10,000 -fold increase in the risk of developing cancer, of which the vast majority are NHL. Case report: In early 1998 an 11-year-old boy was seen with fever, weight loss, night sweating and malaise. On physical examination he had fever, anterior and posterior cervical, mandibular, and left supraclavicular lymphadenopathy. Chest X-ray and abdominal sonography showed hilar and retroperitoneal lymphadenopathy, respectively. The first biopsy from cervical lymph nodes reported as reactive follicular hyperplasia, but after three weeks, biopsy of supraclavicular lymph node revealed diffuse, large cell (high-grade) non-Hodgkin`s lymphoma. Immunoglobulin levels: IgG= 10.2, IgA= < 0.2, IgM = 1.7. The patient received chemotherapy with COAP protocol (including prophylactic intrathecal MTX, HC, Ara-C) and then oral MTX and 6-MP for total three years. Now he is Off-chemotherapy for about 6 years, without any evidence of malignancy. Conclusion: This case report is another evidence for increased incidence of malignancies in selective IgAD. Figure 1.

Abstract: 573 Poster: 480

ADDITION OF ANTI-CD20 TO HIGH DOSE CHEMOTHERAPY WITH AUTOLOGOUS PERIPHERAL STEM CELL TRANSPLANTATION (AUTO-PSCT) PROLONG DISEASE FREE SURVIVAL (DFS) IN NON-HODGKIN`S LYMPHOMAS: A MATCHED-CONTROLLED ANALYSIS

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Aim:The reinfusion of contaminated lymphoma cells within the autograft reduces the success rate of the high dose therapy and contributes to relapse. To overcome this problem, new approaches such as addition of Rituximab, an antiCD20 chimeric monoclonal antibody, have been developed to reduce or purge residual lymphoma cells from the harvest. We retrospectively analyzed the effect of in vivo purging with Rituximab on the outcome of autologous transplantation in aggressive NHL patients. Patients and method: Forty nine patients with B-NHL, who underwent auto-APBSCT between January 1993 and February 2005 in our center were analyzed. Their median age was 43.5 years (range, 15-61) and F/M was 17/ 48. Of those 11 patients have received rituximab(R+) arm and remaining 38 have no rituximab (R-). We matched our B-NHL cohort R+ with the R- group according to age, gender, disease status at transplantation, and histopathological subtype, infused amount of CD34+ (x10e6/kg) cells. The median age, gender (M/F), diagnosis and pretransplant status of the patients in R(-) and R(+) groups were as follows 42 vs 45; 8/3 vs 6/5; Diffuse B cell lymphoma 6vs 6; Follicular lymphoma 1vs 3; marginal zone lymphoma 3 vs 0; mantle cell lymphoma 0 vs 1; Burkitt like lymphoma 1vs 1; 1st complete remission (CR1) 3 vs 5; 2nd CR 2 vs 2; chemosensitive relaps 4 vs 3; primary refractory 2 vs1, respectively. The purging protocol was: Rituximab 375mg/sqm starting after 48 hours after cyclophospahmide based mobilization regimen and prior to first apheresis and on the 28th and 35th day of post transplant (total of four doses). Results: Median neutrophil engraftment day (>0.5x10e9/L) 9 vs 10 and median platelet engraftment day (>20x10e9/L) 11 vs 11 between R- and R+ groups, respectively. Two-year`s probability of DFS and 2-year`s probability of overall survival (OS) in R(-) and R(+) groups were 63.6%±14.5% vs 90.0%±9.5%.($p<0.033$) and 53.0%±15.5% vs 75.8%±15.6 ($p=0.108$) respectively. Conclusion: Although it did not translate into significant prolongation of OS, in B-NHL patients receiving high dose chemotherapy, in vivo purging with rituxan during high dose chemotherapy have resulted in promising positive impact on DFS.

Poster

FULMINANT EBV ASSOCIATED NK/T CELL LYMPHOPROLIFERATIVE DISORDER. PROFILING 6 CASES AND LESSONS LEARNT FROM ITS MANAGEMENT

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Background Fulminant EBV associated NK/T cell lymphoprolifrative disorder is a rare and distinct clinicopathologic syndrome. In most instances, it is refractory to conventional treatment and confers a poor prognosis. Improvement in immunophenotyping techniques has allowed this entity whose nomenclature has always been marred with controversies to be better delineated. We report the clinicopathologic features of 6 patients with this disorder treated between 2002 to 2005 in a single institution. Aim We compare the clinical features and treatment approaches in relation to the survival and causes of mortality in these patients. In doing so, we hope to gather from experience means that may improve the management of a rare and fatal disease where there is no treatment consensus, and any randomised trial on its management is never feasible. Method This is a retrospective study. Patients were identified from our lymphoma registry and clinical information and data of the cases were obtained from pathological reports and attending clinicians. Results Six patients were all of Asian origins. Other than a patient aged 66 years old with a history of renal transplantation on immunosuppression, the other 5 patients were aged between 32 to 40 years with no past medical history. Five had preceding acute upper respiratory tract infection. All presented with haemophagocytic syndrome characterized by high fever, acute pancytopenia, mixed cholestatic/ hepatitic transaminitis and coagulopathy. Five patients had maculopapular rashes. Other