Clinical Spectrum of Gelatinous Bone Marrow Transformation

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Gelatinous bone marrow transformation (GMT) is a rare disorder which has been represented in literature as case reports (except two studies).

Object of the Study: An attempt by the present study was made to study the clinical spectrum associated with GMT.

Methodology: All subjects whose bone marrow aspiration showed pink purple material on Leishman stain underwent a detailed history, clinical examination and investigation (biochemical / microbiological / radiological). Additionally in each subject the smear was stained with special stains of periodic acid Schiff and Alcian blue.

Summary of Results: Out of total 1498 marrows, 65 showed evidence of GMT. All of these had anaemia. The associated clinical spectra of diseases noticed were (a) Infection (31), (b) Nutritional deficiency (5), (c) Haematological disorders (17), (d) Malignancy (3) and (e) Miscellaneous (9).

Conclusion: Based on the heterogeneity of associated clinical disorders, GMT indicates severe illness and not a particular disease. GMT may be a result of bioregulatory process (which presently need further prospective studies) that are activated in different pathologic conditions but resulting in similar lesion in the bone marrow and so till then it may be concluded that GMT is a symptom of bone marrow.

A Study of Fever-associated Thrombocytopenias

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Introduction: Patients with acute febrile illnesses in a tropical country like India usually have an infective etiology and may have associated thrombocytopenia. Sometimes non-infectious diseases like primary haematological disorders may also present with fever and thrombocytopenia.

Aim: To study the profile of thrombocytopenias associated with acute febrile illnesses and to determine the etiology of these febrile illnesses.

Methodology: A total of 109 patients (76 males and 33 females) admitted under Dept. of Medicine, St. Stephen’s Hospital from March 2002 to June 2003 and having the following criteria were included in the study: (1) Age > 12 years (2) Fever ≥ 100° F at least once a day and duration ≤ 15 days (3) Platelet count < 1,00,000/µl

Results: 62 pts (56.8 %) had platelets between 50000 to 100000/µl, 28 pts (25.7 %) had counts between 20000 to 50000/µl, 10 pts (9.2 %) had counts between 10000 to 20000/µl, 6 pts (5.5 %) had counts between 5000 to 10000/µl and 3 pts (2.7 %) below 5000/µl. At the time of follow up, the platelets showed rising trends in 69 pts (63.3 %), initial fall in counts followed by rising trends in 17 pts (15.6 %) and continuously falling counts in 8 pts (7.3 %).

Bleeding manifestations - 45 pts (41.3 %)

1. Petechiae/Purpura 10 pts (22.2 %)
2. Gl bleed 10 pts (22.2 %)
3. Epistaxis 7 pts (15.6 %)
4. Bleeding gums 6 pts (13.3 %)
5. Hematuria 5 pts (11.1 %)
6. Haemoptysis 3 pts (6.7 %)
7. Others 4 pts (8.9 %)

Leading causes

1. Septicaemia 29 pts (64.4 %)
2. Typhoid fever 16 pts (35.5 %)
3. Dengue 15 pts (33.3 %)
4. Megaloblastic anemia 13 pts (28.8 %)
5. Malaria 10 pts (22.2 %)
6. Haem. malignancy 4 pts (8.9 %)
7. Unknown 20 pts (44.4 %)

Conclusion: In our study, Septicaemia was the leading cause of fever-associated thrombocytopenia. Though in a majority of patients thrombocytopenia was transient and asymptomatic, but still in a significant number of cases, thrombocytopenia lead to various bleeding manifestations and thus influenced the clinical profile of these febrile illnesses.

Stem Cell Transplantation - Our Experience in Armed Forces, Command Hospital, Pune

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BMT is the medical treatment by which non-functioning deficient bone marrow or malignant cells are eliminated using high dose chemotherapy with or without radiotherapy. This is followed by bone marrow or peripheral blood stem cell replacement or rescue in order to restore hematological and immunological functions.

A total of thirteen patients underwent stem cell transplantation in last three years at our center Command Hospital, Pune. The median age of patients was 28 years (range 4-60 years). There were 7 male and 5 female patients. Eleven patients underwent autologous transplant and two underwent allogeneic transplant. The indications for autologous transplantation were myeloma (3), Hodgkin’s disease (3), germ cell tumor (3), and one each in breast carcinoma and neuroblastoma. While indications for allogeneic transplant were, thalassemia in one patient and chronic myeloid leukemia in one patient. The conditioning regimen used was high dose melphalan, ICE chemotherapy, BEAM therapy, BU CY2 and BUCY4. Bone marrow was collected in three patients and rest ten patients underwent PBSC collection using Haemonetics CS-3000. The median dose of MNC re-infused was 4.30 x 10^8 cells /kg (range 2.24-8.74) recipient body weight. The median days of engraftment were 14 days (range 9-32 days). Two patients died during peri-transplant period, one of multiple myeloma and the other of germ cell tumor due to regimen-related toxicity. GVHD prophylaxis used in allogeneic transplant were methotrexate and cyclosporine. The commonest complication was febrile neutropenia in autologous transplant and GVHD in allogeneic transplant.

Stem cell transplantation has become an accepted modality of therapy in many hematological and non-haematological conditions. A continued
effort in understanding the HLA system, conditioning regimen and GVHD will make marrow transplantation a safer and more widely used therapy.

86 Study of Interferon Regulating Factor in Chronic Myeloid Leukemia
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Hematological malignancy is unique in the sense that defects in hemopoiesis even the genetic effects can be studied in the peripheral blood. Hemopoiesis is a complex process, governed by down- or up-regulation by a number of transcription factors. Interferon regulating factor is such a factor, which has got two types, IRF1 and IRF2. It has been found that IRF1: IRF ratio is important for therapeutic response to interferon. The idea of the present study is to find out this ratio before starting costly interferon therapy.

We have investigated six patients of CML before undergoing any chemo- or radiotherapy. Cells separated from peripheral blood by density gradient sedimentation are treated by standard phenol/chloroform to isolate total RNA and genes are studied by RT/PCR method.

Results show high IRF1/IRF2 ratio in 4 (four) of them. Two were treated with interferon in a dose of 5 milliunit/day by a pen and showed good clinical and hematological response starting from 7th day up to a follow-up period of 1 year. The other two have been started with interferon therapy but did not report later on.

Hepatic Disorders

87 Evaluation of Liver Functions in Falciparum Malaria
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Liver functions were evaluated in thirty patients of Plasmodium falciparum malaria (PF). Falciparum was present in peripheral blood film in 26 and in remaining 4 cases it was demonstrated by positive ICT. Beside routine investigations, hepatic and renal functions were carried out in each patient and were repeated on 4th and 7th day. Liver biopsy was done in 5 cases. The mean age of patients was 35.4±12.8 years. There were 26 male and 4 female. Alteration in sensorium was found in 19, oliguria in 9 and hemoglobinuria in 2 cases. Jaundice was present in 19 patients. Splenomegaly was seen in 8, hepatomegaly in 17 and pallor in 28. Hypoglycemia was found in 6 and metabolic acidosis was seen in 10 patients where as electrolyte disturbances were seen in 26 cases. Prothrombin index was deranged in 13 and serum bilirubin was raised in 19 (mean 7.5±9.5mg%). The jaundice was predominantly hepatic in 4, haemolytic in 7 and combined in 8. All patients with jaundice had increased transaminases and they were >200 IU in 11 cases. Mean AST and ALT were 168.1±11.9 and 173.73±158 IU, respectively. Blood urea was raised in 24 and creatinine clearance was decreased in 22 and 18 cases had acute renal failure of which 16 were jaundiced. Hyperparasitemia had a positive correlation with serum bilirubin (r= + 0.225) as well as blood urea (r= + 0.495). Transient mild proteinuria (mean 0.56±0.7g/day) was seen in 15 and no case had nephrotic range proteinuria. Liver biopsy revealed evidence of reticuloendothelial cell proliferation and hemozoin pigmentatation. Mortality was 33.3% and coma, severe anemia/thrombocytopenia, hyperparasitemia, hepatic and/or renal dysfunction, were associated with poor out come. Therefore, to improve survival in falciparum malaria early management of these parameters is recommended.

88 Clinical Profile of Chronic Liver Diseases in a Tertiary Care Centre in Kolkata
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Present study is a profile study of CLD patients admitted at S.S.K.M hospital for a period of last 4 yrs. Objective of our study is to highlight the pattern of presentation, etiological profile, severity at the time of presentation.

Total number of patients studied were 91, of whom male were 72 (79%) and female 19 (21%).

Most of the patients were between 31 to 50 years 49 (54%). Commonest mode of presentation was swelling of abdomen 48 (52%), followed by Jaundice 36 (40%) and GI bleeding 22 (24%). As to etiological profile in contradistinction to many previous study, Alcohol 37 (41%) was the cause of largest number of CLD. Hepatitis B 28 (31%) found to be at 2nd position. There is a small incidence of Hepatitis C 7% virus as interferon etiological factor. Dual infection (HBV + HCV) occurred in 3 (3%) patients. Other etiological factors are autoimmune disorder 3 (3%), Wilson disease 2 (2%), Budd Chiari syndrome 2 (2%) etc. As to the severity of presentation most of the patients belonged to Child B 46 (51%), suggests that CLD remains asymptomatic till the late stage. Next comes Child C 32 (35%) and then Child A 13 (14%). Mean Prothrombin time of patients were 19.75 ± 17.21 second, whereas that of control were 12.59 ± 1.38 second. Regarding endoscopic findings esophageal varies found in 71 (78%), portal hypertensive gastroopathy 12 (13%), red colour sign 15 (16%) and peptic ulcer in 6 (7%) cases. Most of the patients 63 (69%) presented with high SAG (>1.5) suggesting SAG as useful parameter to diagnose portal hypertension.

Message : Though hepatitis B and C are problems so far CLD is concerned unless we became aware to menace, of alcoholism, this will remain a problem on health scenario of our country. Though CLD due to hepatitis C at this present moment is much less than hepatitis B, without greater awareness and facilities of C detection, this may overtake ‘B’ as the main cause of CLD in near future next to alcohol.