Diagnostic outcomes of pancytopenia after bone marrow examination in lady reading hospital, a tertiary care hospital in Peshawar

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Objective: To determine the causes of pancytopenia after bone marrow examination to identify the correct etiology to assist in implementing timely and appropriate treatment.

Study design: Cross sectional retrospective descriptive study. Place and duration of the study: Haematology unit, Department of Pathology of Lady Reading Hospital, MTI, Peshawar from 01.01.2012 to 31.12.2012.

Material & Methods: A retrospective analysis data of total 181 patients including all ages and both gender, who presented with pancytopenia and underwent bone marrow examination was performed. Hemoglobin level below, white blood cell count of less than 4x109 U/I and platelet count less than 150x109/uL was taken as the criteria for pancytopenia. Cell counting was performed by automated cell counter and platelet count was confirmed by peripheral blood film examination. The findings were recorded in a Performa and results were drawn accordingly.

Results: During this study period 181 patients fulfilled the criteria for pancytopenia. Age of study subjects ranged from 1 to 80 years (mean age 26 years). 102 (56.4%) were male and 79 (43.6%) were females; giving male to female ratio of 1.2:1. Among 181 cases, the commonest diagnosis for pancytopenia was aplastic anemia with 64 (35.4%) diagnoses. Megaloblastic anemia was the second commonest diagnoses with 52 (28.7%). 31.2 (17.6%) were diagnosed with acute leukemia which included 20 (11%) and 12 (6.6 %) cases of acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML) respectively. Chronic lymphocytic leukemia was prevalent with 2 (1.1%) diagnoses, while 4 (2.2%) patients were diagnosed with myelodysplastic syndrome (MDS) and 3 (1.7%) with Plasma Cell Disorder/Multiple Myeloma (MM). 2 (1.1%) patients were diagnosed with bone marrow metastasis. Mixed deficiency anemia was found in 5 (2.8%) patients while 9 (5%) patients were diagnosed with peripheral destruction. Storage cell disorder (Gaucher's disease) was diagnosed in 2 (1.1%) patients. 5 (2.8%) patients were diagnosed with visceral leishmaniasis and 1 (0.6 %) patients were diagnosed with plasmodium vivax malaria.

Conclusion: Aplastic anemia was the commonest cause of pancytopenia followed by megaloblastic anemia and bone marrow examination is very efficient procedure to diagnose the causes of pancytopenia.

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