BONE MARROW EXAMINATION OUTCOMES IN PATIENTS PRESENTING WITH PANCYTOPENIA IN LADY READING HOSPITAL, A TERTIARY CARE HOSPITAL IN PESHAWAR

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RESEARCH HIGHLIGHTS

A retrospective analysis of the data of total 181 patients presenting with pancytopenia, who underwent bone marrow examination, including all ages and both the genders, conducted in the Haematology unit of department of pathology, Lady Reading Hospital, Peshawar during the period of one year from Jan. 2012 to Dec. 2012 was conducted. It aimed to determine various causes of pancytopenia diagnosed on bone marrow examination in order to implement timely and appropriate treatment of the underlying cause.

Study concluded Aplastic anemia as the commonest diagnosis followed by Megaloblastic anemia and acute leukemia in pancytopenic patient in our setup. Thus gave us a real insight of the local frequency of a number of different causes presenting commonly as pancytopenia.

RESEARCH OBJECTIVES

Pancytopenia is a very common observation in routine haematological investigation.¹ which is defined as reduction of all the three formed elements of blood (i.e; erythrocytes, leucocytes and platelets) below the normal reference range. The patients are suffering from anemia, leucopenia and thrombocytopenia.^{1,2}

Establishment of a correct diagnosis is considered vital in order to promptly manage and ascertain the prognosis of that specific disorder^{3,4}. Bone marrow Examination has a pivotal role in the establishment of diagnosis in these patients, and thus can possibly prevent grave complications and mortality in these patients by early therapeutic interventions.⁵

Different studies are done to find the etiological spectrum of pancytopenia worldwide, but due to high variation in the etiological spectrum of pancytopenia according to the geographical distribution, genetic factors and local environmental conditions, the data of the other countries and cities may not be a true representative of our population. Hence this necessitated local studies in our own setups. This study, therefore, was conducted to determine the etiological spectrum of pancytopenia, based on a significantly high sample of patients in our setup using bone marrow aspiration as a diagnostic tool.

MATERIALS AND METHODS

A cross-sectional retrospective descriptive study conducted at Haematology unit of the Department of pathology at Lady Reading Hospital, Peshawar over a period of 12 months from January 2012 to December 2012. A retrospective analysis of the data of 181 patients was included in the study who presented with pancytopenia and underwent bone marrow examination. Hemoglobin% <10 gm %, WBC count <4 X 10³ /ul and Platelets < 150 X 10³ /ul was considered the criteria for pancytopenia.

Diagnostic Data of 181 patients after confirmation by a detailed microscopic examination of blood film of the peripheral blood, reticulocyte count and smears of bone marrow aspirates with a detailed morphological study of different cells, was analysed using SPSS version 20.

RESULTS

A total of 181 patients data was retrospectively analysed included all ages, where age 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 was Aplastic anemia, found in 64 (35.4%) cases. Megaloblastic anemia was the second common most diagnosis found in 52 (28.7 %) cases. 32(17.6 %) patients 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 diagnosed in 2 (1.1 %) cases. while 4 (2.2 %) cases were diagnosed with Myelodysplastic syndrome (MDS) and 3 (1.7 %) with Plasma Cell Disorder/ Multiple Myeloma (MM). 2(1.1 %) cases were diagnosed with bone marrow metastasis. Mixed deficiency anemia was found in 5 (2.8 %) cases while 9 (5 %) cases were found with peripheral destruction. Storage cell disorder (Gaucher's disease) was diagnosed in 2 (1.1%) cases. 5 (2.8 %) cases were diagnosed with Visceral Leishmaniasis and 1 (0.6 %) case diagnosed with Plasmodium Vivax Malaria.

FINDINGS

Aplastic anemia was found as the commonest outcome of pancytopenia after bone marrow examination, present in 64 patients, making 35.4 % of the total cases, which includes 33 males and 31 females, followed by Megaloblastic anemia, which was diagnosed in 52 cases constituting 28.7 % of all the cases included 28 males and 24 females Acute leukemia comprising of both Acute lymphoblastic leukemia (ALL) and Acute myeloblastic leukemia (AML) was found in 32 cases with 20 and 12 respectively. It is contributing 17.6 % of the total patient sample.

REFERENCES

1. Khan MI, Fatima SH, Ahmad N. Etiological spectrum of pancytopenia using bone marrow aspiration and biopsy. Pakistan Journal of Pathology 2017; Vol. 28 (4): 164-168.
2. Ishtiaq O, Baqai HZ, Anwer F, Hussai N. Patterns of pancytopenia patients in a general medical ward and a proposed diagnostic approach. Connective Tissue.2007; 4(5):5
3. Dasgupta S, Mandal PK, Chakrabarti S. Etiology of Pancytopenia: An observation from a referral medical institution of Eastern Region of India. J Lab Physicians. 2015; 7(2):90.
4. Guinan EC, Shimamura A. Acquired and inherited aplastic anemia syndromes. Wintrob's Clinical Hematology. 2004:1398-419.
5. Khan FS, Hasan RF. Bone marrow examination of pancytopenic children. J Pak Med Assoc. 2012; 62(7): 660-3