ORIGINAL ARTICLE

Incidence of Malignant Hematological Disorders in patients with Pancytopenia/ Bicytopenia: a bone marrow study in Kohat

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ABSTRACT

Aim: To determine the malignant hematological disorders causing pancytopenia. Bone marrow examination of 148 cases of suspected hematological disorders was carried out in a DHQ KDA Hospital, Kohat from Jan. 2011to Dec. 2013.

Results: Among the malignant hematological disorders i.e., 49(33.1%) cases, Leukemias were 35(23.6%), MDS 3(2%), Multiple Myeloma 4(2.7%), lymphoma 5(3.4%) and Met. BM deposits 2(1.4%). Out of 35 cases of leukemia, 21(14.2%) were AML and 6(4.1%) were ALL.

Conclusion: Among leukemias, AML is the most prevalent malignant hematological disorder and the major cause of bicytopenia and pancytopenia in the bone marrow aspirates performed.

Keywords: Pancytopenia, AML, leukemia

INTRODUCTION

Pancytopenia is defined as a decrease in all the three cell lines of blood. It is not a disease entity but a triad of findings that may result from a number of disease processes, the important ones of which are myelodysplasia, leukemia, megaloblastic anemia, aplastic anemia, infiltration of bone morrow due to lymphoma and solid tumors[1]. Red blood cell indices help us to classify anemias as microcytic, normocytic, and macrocytic depending on low, normal or high MCV[2]. Most of the causes of pancytopenia present with nor-mal RBC indices[3] but causes like megaloblastic anemia, aplastic anemia, myelodysplastic syndrome and paroxysmal nocturnal hemoglobinuria present with high MCV[4]. Out of these causes megaloblastic anemia is one of the most common causes of pancytopenia which is easily preventable as well as treatable with timely treatment with Folic acid and Vitamin B12[5].

MATERIALS AND METHODS

This prospective study was carried out among 148 patients with suspected hematological disorders, attending in a DHQ KDA Hospital, Kohat from Jan. 2011to Dec. 2013. All age group patients referred for bone marrow study were included. Bone Marrow was collected by bone marrow aspiration needle from posterior iliac spine of each selected patient after giving local anaesthesia by 2% Lidocaine hydrochloride.

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RESULTS

The detail of results is given in tables 1, 2, and 3

Table 1: Age distribution (n=148)

Age(yrs)	n	%age
<10	33	22.3
10-19	24	16.3
20-29	17	11.5
30-39	24	16.2
40-49	11	7.4
50-59	11	7.4
>60	28	18.9

Table 2: Gender distribution (n=148)

Sex	n	%age
Males	73	49.3
Females	75	50.7

Table 3: Bone marrow findings (Malignant hematological disorders) (n=148)

Bone marrow findings	n	%age
Leukemias	35	23.6
AML	21	14.2
ALL	6	4.1
CML	4	2.7
CLL	4	2.7
Multiple myeloma	4	2.7
Met. BM deposits	2	1.4
MDS	3	2.0
Lymphoma	5	3.4
Non malignant hematological disorders	99	66.9

DISCUSSION

In this study, out of 148 study population, maximum 33(22.3%) were in <10 years age group and lowest 11(7.4%) were in 40-59 years age group (Table 1). Out of 148 cases, 73(49.3%) were males &

75(50.7%) were females (Table 2). In one study by Kibria et al (2010)[6], out of 177 study population, maximum 41 (23.16%) were in 10-19 years age group and lowest 6 (3.39%0 were in > 70 years age group and out of 177 cases, 111 (62.71%) were male & 66 (37.29%) were female. Male –Female ratio was 1: 0.59.

In our study in Kohat, out of 148 cases, maximum 35(23.6%) were leukemias. Other malignancies in our study at Kohat were Multiple myeloma (2.7%), MDS (2%), and lymphoma (3.4%). A study conducted by Kibria et al (2010)[6], maximum 49 (27.69%) were AML, which was commonest malignancy. In contrast to the study in Pakistan among children, Rahim et al, reported only 6.36% AML and maximum 17.92% were ALL.[7] Other malignancies in this study were CML 7.34%, Multiple

myeloma 1.69% and MDS (9.04%). The incidence of ALL in this study is lower as compared to India and China[8].

Keisu M et al (1990)[9] in Israel & Euorpe studied 100 cases of Pancytopenia and commonest cause was newplastic diseases i.e 32% while 2nd common cause is aplasitc animia (19%). In another study by Tariq et al (2010), out of 50 cases, 19 (36%) were with neoplastic disorders[10]

CONCLUSION

Among leukemias, AML is the most prevalent malignant hematological disorder and the major cause of bicytopenia and pancytopenia in the bone marrow aspirates performed in DHQ KDA /LMH Hospital, Kohat

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