

Heamatologic Malignancy Trends in Incidence at NORIN Cancer Hospital Nawabshah-SBA

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ABSTRACT

Objective: To study the different trends in incidence of hematological malignancies (HM) in divided decades of life from interior of Sindh province.

Methods: This cross sectional, convenient study was carried out at Oncology department, NORIN Cancer Hospital. Total 885 patients from different cities of Sindh diagnosed as hematological malignancy were included. The duration of study was from October 2012- March 2018, 5 years and five months period. All cases were entered into excel and analyzed by SPSS 20. All the patients' data were recorded after the written permission of Ethical Review Committee, NORIN Cancer Hospital Nawabshah.

Results: The total number of patients registered with various hematological malignancy were 885 during 2012-2019. Lymphoma combined NHL and HL (Non-Hodgkin Lymphoma and Hodgkin Lymphoma) were 522(59%) of total HM, followed by Leukemia combined were 333(38%), and Plasma cell neoplasm the Multiple Myeloma represent the 30(3%). The male predominance is noticed in every category. NHL is more prevalent in pediatric group, while HL is more prevalent in adults and middle age groups.

Conclusion: Thee most common hematologic malignancy in adults were HL and NHL, followed by Leukemia, Lymphoid than Myeloid, and Multiple Myeloma. All the categories are represented with male predominance. In pediatric age group, the NHL is more prevalent.

Key Words: HM, Lymphoma, Leukemia, NHL, HL, Plasma Cell Neoplasm, Multiple Myeloma

Article Citation: Chandio SK, Chandio MA, Parveen K, Brohi QR, Chandio GA, Lal B. Heamatologic Malignancy Trends in Incidence at NORIN Cancer Hospital Nawabshah-SBA J Peoples Uni Med Health Sci. 2018;8(3):185-89.

INTRODUCTION:

Malignancies of hematopoietic system are a heterogeneous group of diseases originates from bone marrow and lymphatic system with diverse incidence in different parts of world.

These malignancies are broadly categorized into lymphoma and leukemia. Multiple Myeloma, and then further grouped into Hodgkin and non-Hodgkin lymphoma, acute and chronic, lymphoid and myeloid leukemia¹. The rare categories are Myelodysplastic syndrome, Polycythemia Vera, and primary Myelofibrosis².

During year 2012 hematological malignancies approximately comprises 6.5% of total cancer incidence worldwide³. In developed world, these malignancies are fourth most commonly diagnosed cancer in both sexes, and significantly more prevalent in adults than in children⁴.

The data from Pakistan reflects variances in the distribution of hematologic malignancies in different cities. The study conducted in 1989-99 NHL was in 3rd common malignancy of male,

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during 1998-2002 Bhurgri⁵ in Hyderabad NHL was 2nd commonest in male population. In year, 2000-2002 at Larkana the NHL were on top of the list in male malignancy. In year 2000-2007 the Leukemia were the commonest malignancy in both sexes in Multan. During 2007-20012 in Abbottabad the Hodgkin lymphoma were commonest in male while Leukemia were on top in female cancers. In Karachi year 2014 NHL were second commonest in male and 3rd commonest in female cancers. NHL were on 4th number in list in Lahore during 2010-2012⁶.

METHODS:

The study is cross sectional, convenient, and it is carried out at the Oncology department, NORIN Cancer Hospital. Total 885 patients from different cities of Sindh diagnosed as hematological malignancy were included. A specially designed proforma was used to collect the data. All the demographic features, Complete blood picture results, histopathological diagnosis, Bone marrow aspiration cytology, and Cytogenetic analysis were included where required. These hematological malignancies were categorized according to the W.H.O Classification. The duration of study were from October 2012 to March 2018, 5 years and five months period. The collected data was entered in excel and analyzed using SPSS 20, and frequencies of different variables were determined. All the patients' data were recorded after the written permission of Ethical Review Committee, NORIN Cancer Hospital Nawabshah.

RESULTS:

Over 5 years, 885 patients with hematologic malignancies were received and entered in the system. The Lymphoma comprises 522(59%) of cases, Leukemia were 333(38%) of cases and Plasma cell malignancy were 30(3%) of all cases, with male predominant and accounted for 574 (65%) and female accounts for 311 (35%) of the total number of cases

with the male/female ratio of 2:1. The age ranges from 06 months to above 74years.

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The table-II shows the frequency of lymphoma variants. Here the Non-Hodgkin lymphoma were 356(68%) and 166(32%) were Hodgkin Lymphoma. The male preponderance in both NHL were 237(45.4%) and 119(23%) were female, while in HL male were 117(22.4%) and female were 49(9.2%).

The frequency and distribution of leukemia in both sex is presented in table number 03, the lymphoid leukemia is more prevalent with male predominance in both conditions. Male affected with Lymphoid Leukemia were 152(46%) and female were 90(27%), while Myeloid Leukemia was seen in 61(18%) and 30(9%) were females. The sum of both leukemia is as 64% males are sufferer and remaining 36% were females.

The frequency of Plasma cell malignancy was recorded 20 (67%) cases in male and 10 (33%) were recorded in female.

Table-IV, shows that among all hematological malignancy 14% cases were children up to 10 years of age. The most common group of adults involved were 41-50 years of age 18%. The least common group involved were above 70years of age 4%. In children the common disease were NHL while in adults it was HL.

DISCUSSION:

In this study, total 885 diagnosed patients were registered with hematological malignancy, the overall 10312 cancer cases were registered indicating the hematological cancers account for 9% of all cancer cases. The results are

Table-I: Frequency of Hematologic Malignancy Variants (n=885)

S.No	Disease	Frequency	Male	Female	Total
1	Lymphoma	522(59%)	354	168	522
2	Leukemia	333(38%)	213	120	333
3	Plasma Cell Malignancy	30(3%)	20	10	30
	Total	100%	587(66%)	298(34%)	885

Table II: Frequency of Lymphoma Variants (n=522)

S.No:	Disease	Male No (%)	Female No (%)	Total No (%)
1	NHL	237(45.4)	119(23)	356(68)
2	HL	117(22.4)	49(9.2)	166(32)

Table III: Frequency of Leukemia Variants in Both Sexes (n=333)

S.No:	Disease	Male No (%)	Female No (%)	Total No (%)
1	Lymphoid Leukemia	152(46)	90(73)	241(73)
2	Myeloid Leukemia	61(18)	30(9)	92(27)
	Total	213(64)	120(36)	333(100)

Table-IV: Hematopoietic Malignancy in Divided Age Groups (n=885)

S NO	DISEASE	0-10YRS	11-20YRS	21-30YRS	31-40YRS	41-50YRS	51-60YRS	61-70YRS	ABOVE 70YRS	TOTAL
1	NHL	48	35	21	18	20	16	6	2	166
2	HL	17	23	45	46	81	81	40	20	353
3	Lymphoid	47	34	43	36	30	26	15	4	235
4	Myeloid	9	7	21	20	19	13	7	5	101
6	Plasma Cell Neoplasm	-	-	2	1	11	10	5	1	30
	Total	121	99	132	121	161	146	73	32	885
		(14%)	(11%)	(15%)	(14%)	(18%)	(16%)	(8%)	(4%)	100%

comparable with same results of Errahhali et al Morocco⁶, the higher percentages 18.5%, 20% and 24.8% were reported from Nigeria, Iran and Yemen respectively⁷⁻⁹.

The Lymphoma, including both HL and NHL both collectively were 59% of hematologic malignancy in our study, among them the NHL is 68% and HL is 32% of total Lymphoma burden. 54.77% were seen in Europe by Rodriguez-Abren¹⁰. The study in KPK Pakistan shows the 10% Lymphoma prevalence by Khan S et al⁴. The NHL is 40% of all HM in our study and results are comparable with the results from Bangladesh Hossain S² where NHL were 16.6% of hematologic malignancy. Hodgkin lymphoma in our study were 19% of hematologic malignancy, these results are consistent with results from Morocco by Errahhali⁶ 16% while the results from Bangladesh² were 3.9%.

The Leukemia were 38% of total HM in our study the results are consistent with the study of Broccia G¹² where leukemia were 35.1% while Bangladesh² and Morocco⁶ were in contradiction with our results where leukemia were 46.5% and 10.6% of total HM respectively.

The lymphoid leukemia is 27% of all HM in our data while 40.5% of LL were seen in KPK⁴ and 17.8% in Bangladesh² and 8.4 were seen in Morocco.⁶ The Myeloid leukemia were 10% in our study the results are comparable with the results of BrocciaG¹¹ 16.9% while 29.6% seen in KPK, 2.2% recorded in Morocco⁶ and 46.5% seen in Bangladesh².

The plasma cell malignancy, Multiple Myeloma were 30(3%) of our study these results are in contradiction with results of Morocco⁶ which is 12.4% and 10%, 13% and 13.7% from Raab M et al UK¹², Smith A US¹³, and Troussard X France¹⁴ respectively.

Among pediatric age group the most prevalent disease is NHL 48 (5%) of all HM and 40% of pediatric HM. In Morocco⁶ the HL is more prevalent in patients under 20 years of age. Total male patients were 65% and total female 35%. The higher percentage of patients were seen

in 41-50 years of age, 18% of total HM the more commonly affected by HL same results were seen in Morocco⁶.

CONCLUSION:

This study provide the first HM frequency and distribution in different decades of life in male and female. The disease affect the younger age group as compared to western countries. Overall, male predominance is recorded. NHL affects the pediatric age group while HL is more prevalent in young adults to middle age group, followed by Lymphoid Leukemia and Myeloid Leukemia then Multiple Myeloma. There is a strong need to establish a cancer registry and cancer control institution for HM, aiming to serve for better screening, earlier detection and diagnosis, and better and effective treatment.

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