CLINICOPATHOLOGICAL FEATURES OF HODGKIN LYMPHOMA IN PATIENTS OF PESHAWAR REGION

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ABSTRACT

Aim: To study the age incidence, common pathohistologic subtypes, and clinical presentation of patients with Hodgkin lymphoma (HL) in local population.

Materials and Methods: This retrospective study was carried out by reviewing medical record for all lymph nodes biopsies with the diagnosis of HL in Rehman Medical Institute Peshawar from year July 2011 to Jan 2018 **Results:** Total of 31 lymph node biopsies were examined. Twenty nine (94%) cases were diagnosed with Classical Hodgkin lymphoma (CHL) and only 2(6%) were diagnosed with nodular lymphocyte predominant (NLPHL) type. Among all our cases 65% were males and 35% were females and mean age of presentation was 28.42 years. The major site of lymph node involvement from where biopsy was taken for histological diagnosis was found to be the cervical group of lymph nodes involving 58% of the cases. Histological subtyping of the cases in the study indicates that mixed cellularity HL constitute 22 cases (76%) making it the most predominant subtype followed by nodular sclerosis 7 cases (24%).

Conclusion: Patients are predominantly males and the most common presentation was cervical lymphadenopathy. Major bulk of the patients with Hodgkin lymphoma suffer from classical Hodgkin's lymphoma and the most dominant subtype was mixed cellularity Hodgkin's lymphoma.

Key words: Hodgkin's lymphoma, Mixed cellularity, Nodular sclerosis, Lymphocyte predominant.

INTRODUCTION

Hodgkin's lymphoma (HL) is a curable cancer and one of the leading group of lymphoid neoplasms.[1,2] It is morphologically characterized by the presence of Reed Sternberg (RS) cells and/or its variants along with few reactive lymphocytes, histiocytes (macrophages) and granulocytes.[2]

Annual incidence of Hodgkins lymphoma is three per 100,000 person per year.[3] Hodgkins lymphoma was first explained by scientist Thomas Hodgkin in 1832 and is now named after him.[4]

Hodgkin's lymphoma is classified into either classical Hodgkin lymphoma (CHL) or nodular lymphocyte predominant Hodgkin lymphoma in accordance with 2008 WHO classification.[5] Classical Hodgkin lymphoma is further divided into four histological subgroups, nodular sclerosis, mixed cellularity, lymphocyte-rich, and lymphocyte depleted.[6] Classical Hodgkin lymphoma accounts for 95% of all cases of Hodgkin lymphomas and nodular lymphocyte predominant type comprises of rest of the 5%.[7]

Hodgkin's lymphoma exhibits marked variations among different populations.[8] There are characteristic epidemiologic, clinical, and pathological features reported according to various geographic areas.[9] Socioeconomic level of a country has been reported to have considerable influence on the clinical presentation of patients suffering from this disease. [9,10] In developing countries HL is more commonly seen in children and its incidence decreases with age, whereas in developed countries, young adults are mostly affected by HL and its incidence increases with age. [11]

HL histologic subtypes are also associated with biological and prognostic differences.[12] Previous studies show that NSCHL in young adults is characterized by a mediastinal mass and good prognosis.[6] Epidemiologic variation has also been reported in histological subtypes of HL.[13] In the West the most frequent subtype of HL is nodular sclerosis (NS) (60-75%), followed by mixed cellularity (MC) (20-25%), lymophocyte rich (LR) (rare), lymphocyte dominant (LD) (5%) and nodular lymphocyte predominant (NLP)(5%).[2] Nodular sclerosis is the most common subtype of CHL, its incidence rates have been relatively stable over time, whereas studies have documented persistently declining rates for mixed cellularity.[13]

Although there are various publications on this disease from Western countries and rest of the world in medical literature, very few studies are available in Pakistani population.[14-16] It was the scarcity of existing data in the literature among patients of our region that has led us to carry out this study. We have studied our

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patients with aim to observe the demographic pattern and age incidence, common pathohistologic subtypes and presentation of lymph nodes involvement in our local population.

MATERIALS AND METHOD

This was a retrospective study which was conducted at Pathology department of Rehman Medical Institute. All consecutive 31 cases of Hodgkin's lymphomas diagnosed and documented at the Department of Pathology during the period of 2011-2018, were retrieved and included in this study.

All the appropriate clinical information regarding age, gender, anatomic locations of lymph nodes involved was noted. This was done with the help of medical record at the time of registration of patients. All patients of Hodgkin's lymphoma irrespective of age and gender having sufficient tumour material were enrolled. Specimens not received in 10% buffered formalin cases and samples with incomplete clinical data and cases on which the histological subtype could not be determined were excluded from the study.

HL diagnosis was established by both characteristic histopathological findings on H and E stains and immunohistochemical studies using a panel of antibodies for CD 30, CD15, CD45, PAX 5.

The cases were classified according to WHO classification. Diagnosis of Classic Hodgkin lymphoma was given for those cases in which typical RS cells were present in a mixed background comprising of lymphocytes, eosinophils and plasma cells. These cases demonstrated a positivity of CD15, CD30 and PAX5 in the RS cells. A diagnosis of NLPHL was given in cases which showed a nodular architecture, L& H cells which demonstrated positivity for CD 45.

Data was analyzed using SPSS version 22. Mean were computed for quantitative variables like age. Frequencies and percentages were calculated for categorical variables like gender, site, and subtypes of Hodgkin's lymphoma.

RESULTS

Lymphadenopathy was the most common finding among our patients, affecting all 31(100%) of the patients at the time of diagnosis. Most common node involvement site was observed as cervical nodes 58% followed by axillary lymph nodes, inguinal nodes, supraclavicular, nasopharnx and retroperitoneal (16%, 10%, 10%, 3% and 3% respectively).

DISCUSSION

In the present study we investigated the clinicopathologic features of hodgkins lymphoma to explore the pattern of the disease in our local population in relation to available existing information from other parts

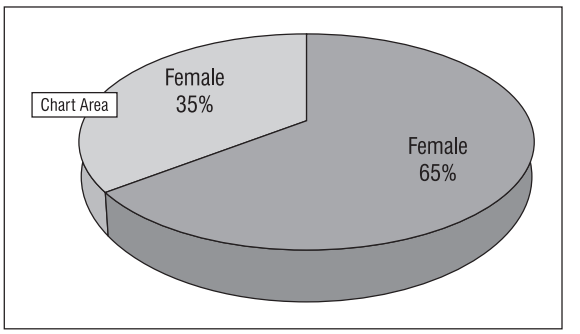

Fig 1: Distribution of cases according to gender

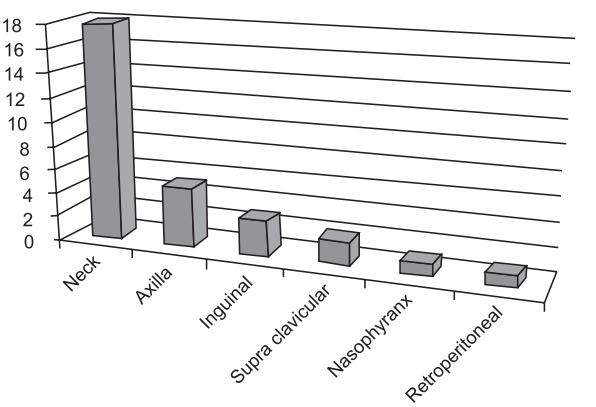

Fig 2: Lymphnodes sites involved with Hodgkin's Lymphoma at Presentation

Table 1: Demographic data of patients included in the study.

Total no of patients (n)	31
Male :Female	1.8:1
Age range(years)	5- 82
Mean age (years)	28.42
Age less than 18 years (n)	13(42%)
Male: Female	2.2:1
Age more than 18 years (n)	18(58%)
Male:Female	1.5:1

of world. The incidence of HL varies by age, geographic location, and socialeconomic class. HL accounts for 20–45% of malignant lymphoma in Western countries, but it in Asia lower incidence rate is reported.[17]

In our study we found male predominance in both adults and pediatrics age groups as reported in previous studies.[1,18,19] It has been reported in other studies that the preferential male involvement in hodgkins lymphoma is most marked in the youngest age group.[18] Our study confirmed these findings as the younger group (<18 years) shows higher male preponderance as compared to the patients more than 18 years of age. There is

Table 2: Frequency of cases according to histological subtypes.

Histological Subtype	Total Number	<18Years	>18 years	Male	Female
CHL	29 (94%)	12 (41%)	17(59%)	19(66%)	10(34%)
NS (CHL)	7 (24%)	3 (10%)	4 (12%)	4 (57%)	3 (43%)
MC (CHL)	22 (76%)	9 (40%)	13 (59%)	15(68%)	7(32%)
NLP	2 (6%)	0	2 (100%)	1 (50%)	1(50%)

further need to generate more data regarding variation in gender predominance in different age groups in our population for better understanding.

In our setup mean age of presentation of HL was observed to be 28.4 years which is in accordance to a study carried out previously in developing countries.[1,18,19] The studies carried out in western population however shows comparatively late presentation of patients than in our population.[6] Previous studies in west also reported significant differences in the time of presentation across different racial groups (lower age of presentation in blacks and Asian as compared to whites; 38years versus 42 years).[20] Racial differences or socioeconomic class variation from western population could be the reason for this discrepancy in age of presentation.

HL usually presents with lymphadenopathy.[1] It is either detected by the patient or by imaging procedures. The most common site of lymphadenopathy in patients of Hodgkin's lymphoma is usually the neck.[18,19] This is in agreement to the findings of our study where major region of lymph node involvement was observed to be the cervical region (58%) followed by the axillary region (16%).

Morphology of Hodgkin's lymphoma strongly influences the prognosis of these patients. It has been documented that MC and LD subtypes had significantly poorer outcome compared with NS or NLPHL.[3] The morphologic information in study groups of our region shows variation, when compared with western literature, which reports NS subtype predominance overtime and MC decline[8,10]. In our study, the mixed cellularity (MC) HL (76%) and NS (24%) histologic subtypes were observed to be most common. The predominance of MC in this study has been reported in other studies in Nigeria and other developing countries.[18,19,21]

CONCLUSION

HL is seen in younger age with male predominance in our population. Most common presentation is with lymphadenopathy.CHL is more common as compared to NLPHL. The most common subtype CHL is MC. All these findings are comparable to other local studies but is noticeably different from patterns noted in Western countries.

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