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EVALUATION OF PRIMARY EXTRANODAL NON-HODGKIN LYMPHOMA: A RECORD BASE STUDY

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Abstract

INTRODUCTION: Non-Hodgkin lymphoma (NHL) is a group of lympho proliferative, malignant disorders arising in lymph nodes having heterogeneous, histological, and clinical characteristics. The typical clinical presentation is with lymphadenopathy or an extranodal mass. Systemic 'B' symptoms of fever, night sweats or weight loss are present in up to one third of patients at diagnosis. Extranodal lymphoma is prognostically important in any lymphoma. Hodgkin lymphoma is usually confined to the lymph nodes. Extralymphatic extension or involvement of spleen in a case of primary nodal disease upstages the disease in group III. National cancer database report on NHL shows patient with primary extranodal disease tend to present in lower stage than the primary nodal disease.

MATERIAL AND METHODS: Tissue was processed routinely in 10% formalin and 5 µ paraffin sections were stained with hamatoxylin and eosin. Immunohistochemistry (IHC) was performed in the department of pathology using a panel of antibodies depending on the morphology. Immunohistochemical analyses were performed manually on the paraffin embedded tissue sections by using a panel of monoclonal antibodies. Primary nodal NHL with secondary extranodal involvement and plasmacytomas were also excluded from the study. All cases were classified based upon morphologic and immunophenotypic criteria according to World Health Organization (WHO) 2008 classification while Clinical stage of NHL was defined according to the Ann Arbor classification.

RESULTS: 100 NHL were diagnosed. Of them, 21 (21%) cases were Primary extranodal NHL (pENL)s. out of 21 cases 14 (67%) were male and 7(33%) were female. majority of the patients in our study were in the 5th decade of life.

CONCLUSION: Primary extranodal lymphomas shows a diversity in lymphoid malignancies. Gastrointestinal tract was the most commonest site for Primary extra nodal lymphomas while, diffuse large B-cell lymphoma was the most common histological subtype.Most common site for Extranodal NHL was Gastrointestinal tract 10 (47.6%) followed by Nasophryns 4(19%). In kidney 3 (14.3%, Bone 2(9.5%) and 1(4.8%) each in breast and brain was diagnosed.In histological subtypes 76.2% were DLBL, 14.3% were MALTOMA, 4.8% each were BL and NK/T cell lymphoma.

Introduction:

Non-Hodgkin lymphoma (NHL) is a group of lymphoproliferative, malignant disorders arising in lymph nodes having heterogeneous, histological, and clinical characteristics[i]. Non-Hodgkin's lymphomas (NHL) arise from a single

mutant lymphoid cell which gives rise to a malignant clone. The genetic changes which are associated with lymphomatous transformation have been extensively investigated and have contributed greatly to knowledge of tumourigenesis in general. Chromosomal abnormalities can be identified in more than 85% cases of NHL specimens[ii,iii].The typical clinical presentation is with lymphadenopathy or an extranodal mass. Systemic 'B' symptoms of fever, night sweats or weight loss are present in up to one third of patients at diagnosis[iv].

Extranodallymphoma is prognostically important in any lymphoma. Hodgkinlymphoma is usually confined to the lymph nodes. Extralymphatic extension or involvement of spleen in a case of primary nodal disease upstages the disease in group III. National cancer database report on NHL shows patient with primary extranodal disease tend to present in lower stage than the primary nodal disease[v].

Over the past few years lymphomas arising in the extra nodal sites have shown a rapid increase in incidence particularly in central nervous system, gastrointestinal tract (GIT) and the skin[vi]. This may be correlated to immunosupression due to AIDS or immunosuppressive treatments, infections such as Helicobacter pylori, Chlamydia psittaci, Borreliaburgdorferi, and Campylobacter jejuni, autoimmune disorders and environmental factors. The types of lymphoma can be encountered vary widely from one extranodal site to another. Extra nodal lymphoma is further classified as primary and secondary. Secondary lymphoma indicating that the lymphoma first presented in an extra nodal site[vii].

Staging and accutare localization of the disease are essential for deciding the treatment outcome and prognosis. Most histopathologists in the United Kingdom and Europe have used the Kiel classification[viii], whereas the National Cancer Institute Working Formulation[4] has been used in the United States[4].

MATERIAL AND METHODS

Present cross-sectional study was carried out in the department of pathology at Vedanta Institute of Medical Sciences Dahanu, Palghar, Maharashtra. Tissue was processed routinely in 10% formalin and 5 µ paraffin sections were stained with hamatoxylin and eosin. Immunohistochemistry (IHC) was performed in the department of pathology using a panel of antibodies depending on the morphology. Immunohistochemical analyses were performed manually on the paraffin embedded tissue sections by using a panel of monoclonal antibodies. Primary nodal NHL with secondary extranodal involvement and plasmacytomas were also excluded from the study.

All cases were classified based upon morphologic and immunophenotypic criteria according to World Health Organization (WHO) 2008 classification[ix] while Clinical stage of NHL was defined according to the Ann Arbor classification[x].

OBSERVATIONS AND RESULTS

During the study period, 100 NHL were diagnosed. Of them, 21(21%) cases were Primary extranodal NHL (pENL)s. out of 21 cases 14 (67%) were male and 7(33%) were female. majority of the patients in our study were in the 5th decade of life.

Table 1: site of Extranodal NHL

Site	N=21	%
Gastrointestinal tract	10	47.6%
Nasophrynx	4	19.0%
Kidney	3	14.3%
Bone	2	9.5%
Brain	1	4.8%
Breast	1	4.8%
Total	21	100.0%

Most common site for Extranodal NHL was Gastrointestinal tract 10 (47.6%) followed by Nasophryns 4(19%). In kidney 3 (14.3%, Bone 2(9.5%) and 1(4.8%) each in breast and brain was diagnosed.

In 2 cases of gastric lymphoma of mucosaassociated lymphoid tissue *H. pylori* was detected in gastric biopsy

Table 2: **Common histological subtypes in primary extranodal lymphomas of gastrointestinal tract**

histological subtypes	N=21	%
DLBL	16	76.2%
MALTOMA	3	14.3%
BL	1	4.8%
NK/T cell	1	4.8%

DLBL: Diffuse large B cell lymphoma, Maltoma: mucosa associated lymphoid tissue lymphoma, BL: Burkitts lymphoma, NK Natural killer cell

In histological subtypes 76.2% were DLBL, 14.3% were MALTOMA, 4.8% each were BL and NK/T cell lymphoma.

DISCUSSION

Lymphomagenerally originates in lymph nodes. Infiltration of malignant lymphomatous cells in the organs other than lymph node is termed as extranodal lymphoma. Almost any organ in the body can be affectedextranodallymphoma. The most frequently involved system is GI tract followed by Waldeyer's ring, lung, liver, spleen, bone and and skin[xi]. Primary extra nodal lymphomas constitute about 24-48% of lymphomas according to the studies[xii]. Tumoursoriginating from non lymph-nodal tissue is termed as primary extranodallymphoma , whereas hematogenous spread of disease from lymph nodes to extranodal tissue is secondary extranodal lymphoma[xiii].

Our study reported 21 of extranodal NHL of which 14 (67%) were male and 7(33%) were female. Majority of the patients in our study were in the 5th decade of life.

Most common site for Extranodal NHL was Gastrointestinal tract 10 (47.6%) followed by Nasophrynx 4(19%). In kidney 3 (14.3%, Bone 2(9.5%) and 1(4.8%) each in breast and brain was diagnosed.Panel of markers like , LCA, CD99, HMB45, chromogranin, vimentin, and desmin was used. In nasophrynx cases IHC with high molecular weight cytokeratin was done to exclude a nonkeratinizing undifferentiated carcinoma.

Primary breast lymphoma incidence ranges from 0.04% to 0.5% of all breast malignancies as shown in the studies[xiv]. In our study it was 4.8%. This was significantly higher than other studies. Primary NHL of the brain was 2% of NHL's and 5% of brain tumors[xv]. In our study it was 4.8%.

Gastrointestinal tract was the most commonest site(47.6%). Singh *et al*.[xvi] showed extranodal lymphomas constitute 44% with the most common site being the head and neck, whereas a study conducted by Padhi *et al*.[xvii] from Southern India showed extranodal lymphomas constituted 22% and the most common site being the central nervous system.

Diffuse large B-cell lymphoma (76.2%) was the most common histological subtype in our study followed by 14.3% MALTOMA, 4.8% each BL and NK/T cell lymphoma. These resulrs were similar to Mishra P et al.[xviii]

CONCLUSION

Primary extranodal lymphoma shows a diversity in lymphoid malignancies. Extra nodal lymphomas should be accurately diagnosed for treatment outcome and prognosis of the patients.in our study Gastrointestinal tract was the most commonest site for Primary extra nodal lymphomas while, diffuse large B-cell lymphoma was the most common histological subtype.

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