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Original Research

Clinico- pathological evaluation of cases of Peripheral T‑cell lymphomas

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ABSTRACT

Introduction: Peripheral T‑cell lymphomas (PTCLs) represent a heterogeneous group of non‑Hodgkin's lymphomas. The present study was clinico- pathological evaluation of Peripheral T‑cell lymphomas. **Methods:** The present study was conducted on 56 cases of Peripheral T‑cell lymphomas of both genders. The study protocol was approved from institutional ethical committee. A basic panel of antibodies including CD3, CD2, CD5, CD7, CD4, CD8, Ki67, CD30, CD20, Epstein–Barr virus-latent membrane protein 1 (EBV-LMP1) were performed and additional immunostains such as CD56, Granzyme B, Alk-1, follicular helper T-cell marker PD1 were performed as necessary. **Results:** Out of 56 cases, males were 34 and females were 22. The most common type was PTCL NOS in 22, mycosis fungicides in 10, Cutaneous ALCL in 6, NK cell leukemia in 7, NK/T cell lymphoma in 3, angioimmunoblastic TCL in 2 and Hepatosplenic TCL in 6 cases. The difference was significant (P< 0.05). The most common location was lymph nodes in 21, oral cavity in 10, nasal cavity in 8, lung in 5, spleen in 7 and central nervous system in 5. The difference was significant (P< 0.05).**Conclusions:**Authors found that PTCL NOS was most prevalent form of PTCL in their study. Other variants were mycosis fungicides, Cutaneous ALCL, NK cell leukemia, NK/T cell lymphoma, and angioimmunoblastic TCL.

Key words: Immunostains, Non‑Hodgkin's lymphomas, Peripheral T‑cell lymphomas

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INTRODUCTION

Peripheral T‑cell lymphomas (PTCLs) represent a heterogeneous group of non‑Hodgkin's lymphomas (NHL) with an aggressive behavior and poor clinical outcome. These neoplasms are rare accounting for <15% of all NHLs in the West, with variations in different geographic regions. PTCL, not otherwise specified (NOS) is the most common subtype in Western literature and other Indian studies. It has marked morphologic and immunophenotypic heterogeneity. PTCL NOS does not correspond to any of the specifically defined T‑cell lymphomas in the World Health Organization and hence is a diagnosis of exclusion.[1]

Patients with PTCLs demonstrate more aggressive clinical features than those with B-cell lymphoma, including B-symptoms, diffuse disease, extranodal disease, increased serum lactate dehydrogenase (LDH) levels, increased serum beta-2- microglobulin levels, bulky disease, elevated Ki-67, and overexpression of p53.[2]The approach to treat PTCL has traditionally been similar to that for diffuse large B-cell lymphoma. However, outcomes are poor when PTCL is treated according to strategies established for aggressive B-cell lymphomas, with early relapse, progression- free survival (PFS) of less than 1 year, and overall survival (OS) of less than 2 years. Various new scoring systems, either subtype specific or non-specific with better risk stratification, have been compared; however, no single scoring system has been considered unanimously superior. CHOP-based regimens have shown poor results in T cell lymphomas, with the notable exception of anaplastic large cell lymphoma (ALCL), ALK positive.[3]The present study was clinico- pathological evaluation of Peripheral T‑cell lymphomas.

MATERIALS & METHODS

The present study was conducted in the department of general pathology. It comprised of 56 cases of Peripheral T‑cell lymphomas of both genders. The study protocol was approved fromm institutional ethical committee.A detailed immunomorphologic analysis was done in all cases. A basic panel

of antibodies including CD3, CD2, CD5, CD7, CD4, CD8, Ki67, CD30, CD20, Epstein–Barr virus‑ latent membrane protein 1 (EBV‑ LMP1) were performed and additional immunostains such as CD56, Granzyme B, Alk‑ 1, follicular helper T‑ cell marker PD1 were performed as necessary. Immunohistochemistry testing was performed on the Ventana automated immunostainer using the manufacturer's protocol. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of cases

Total- 56		
Gender	**Males**	**Female**
Number	34	22

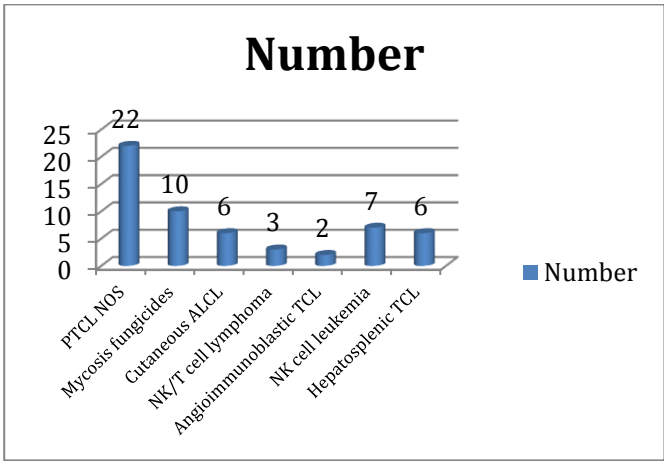
Table I shows that out of 56 cases, males were 34 and females were 22.

Table II Distribution of PTCLs

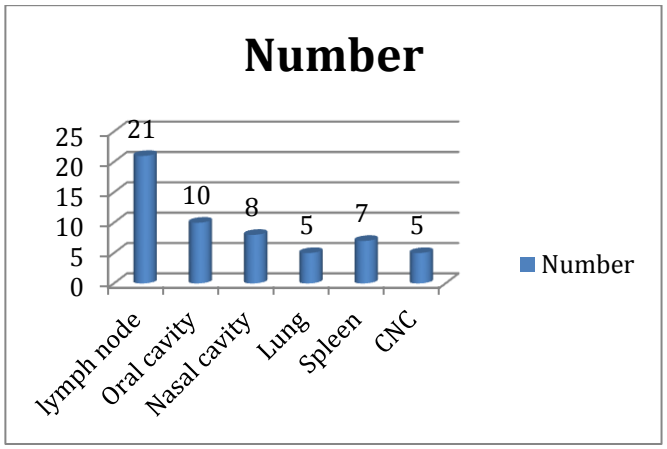
Type	Number	P value
PTCL NOS	22	0.01
Mycosis fungicides	10	
Cutaneous ALCL	6	
NK/T cell lymphoma	3	
Angioimmunoblastic TCL	2	
NK cell leukemia	7	
Hepatosplenic TCL	6	

Table II shows that most common type was PTCL NOS in 22, mycosis fungicides in 10, Cutaneous ALCL in 6, NK cell leukemia in 7, NK/T cell lymphoma in 3, angioimmunoblastic TCL in 2 and Hepatosplenic TCL in 6 cases. The difference was significant (P< 0.05).

Graph IDistribution of PTCLs



Graph II Location of PTCLs



Graph II shows that most common location was lymph nodes in 21, oral cavity in 10, nasal cavity in 8, lung in 5, spleen in 7 and central nervous system in 5. The difference was significant (P< 0.05).

DISCUSSION

The International Peripheral T Cell Lymphoma Project (IPTCLP) is the largest series describing
pathological findings and outcomes in this group of patients. International Prognostic Index (IPI) was found to be useful for prognostication of PTCL, similar to that for B cell NHLs; however, certain PTCLs such as NKTCL are associated with poor outcome even with low IPI.[4]

The approach to treat PTCL has traditionally been similar to that for diffuse large B-cell lymphoma. However, outcomes are poor when PTCL is treated according to strategies established for aggressive B-cell lymphomas, with early relapse, progression- free survival (PFS) of less than 1 year, and overall survival (OS) of less than 2 years. The exact roles of high-dose therapy (HDT) and autologous stem cell transplantation (ASCT) support remain undefined.[5] Several retrospective studies suggest that there are populations of patients with PTCL who will benefit from transplantation for whom disease status at transplantation is a major predictor of success. However, the interpretation of these studies is complicated by the heterogeneous histologic subtype frequencies and the enrollment of patients with anaplastic lymphoma kinase-positive (ALK1) anaplastic large-cell lymphoma (ALCL) in some series, who had a more favorable outcome.[6]The present study was pathological evaluation of Peripheral T‑cell lymphomas.

In present study, out of 56 cases, males were 34 and females were 22. We found that most common type was PTCL NOS in 22, mycosis fungicides in 10, Cutaneous ALCL in 6, NK cell leukemia in 7, NK/T cell lymphoma in 3, angioimmunoblastic TCL in 2 and Hepatosplenic TCL in 6 cases.

Clinical presentations of PTCL are heterogeneous with more disseminated disease (stage III or IV disease) compared with aggressive B-cell lymphomas, a poorer performance status, an increased incidence of B-symptoms, and a common extranodal localization. Patients occasionally present with eosinophilia, pruritis, hemophagocytic syndromes, or autoimmune

manifestations. Bone marrow involvement is more frequent than that observed in diffuse large B-cell lymphoma.

Diagnosis requires examination of peripheral blood or tissue biopsy for histological characterization, completed by detailed immunohistochemistry, flow cytometry, cytogenetics, and molecular genetics. Clonality should be assessed by polymerase chain reaction (PCR) for T-cell receptor gene rearrangements.[7]

The differential diagnosis of PTCL, NOS is broad because this category encompasses cases that do not meet any criteria of any specific subtype. PTCL, NOS exhibit a broad morphologic spectrum that overlaps considerably with reactive hyperplasia and other T‐cell lymphomas, B‐cell lymphomas, and Hodgkin's lymphomas. PTCLs exhibit varied morphologic heterogeneity as compared to B‐cell lymphomas and the cytologic features are less predictive of clinical aggressiveness in PTCLs.[8] We observed that most common location was lymph nodes in 21, oral cavity in 10, nasal cavity in 8, lung in 5, spleen in 7 and central nervous system in 5.

CONCLUSION

Authors found that PTCL NOS was most prevalent form of PTCL in their study. Other variants were mycosis fungicides, Cutaneous ALCL, NK cell leukemia, NK/T cell lymphoma, and angioimmunoblastic TCL.

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