

Letter to the Editor

Profile of non-Hodgkin lymphoma: An Indian perspective

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Dear Editor,

Non-Hodgkin lymphoma (NHL) subtype, pattern of presentation as well as patient population, varies with geographical regions. The World Health Organization (WHO) 2016 lymphoma classification clarifies the diagnosis and management of NHL in relation to the stages of lymphomagenesis. It refines the diagnostic criteria to incorporate the expanding genetic/molecular landscape of NHL.^[1] In view of comparative data regarding the distribution of NHL subtypes in India is scarce in the literature, we did this retrospective analysis of newly diagnosed patients with NHL treated in a tertiary care

center. A total of 390 cases of adult (>18 years) NHL over a period of 27 months (May 1, 2013 and July 31, 2015) were registered in the Department of Medical Oncology at our institute (AIIMS, New Delhi). The individual NHL cases were retrospectively reviewed according to the WHO lymphoma classification 2016 revision, immunophenotypic expression and morphology. B-cell lymphomas formed 347 (89%) whereas T-cell lymphomas formed 43 (11%) of the NHLs. Diffuse large B-cell lymphoma (DLBCL) was the most common subtype which was present in 267 (68.5%) cases. Follicular lymphoma (FL), mantle cell lymphoma (MCL), marginal zone B-cell lymphoma, small lymphocytic lymphoma, and Burkitt's lymphoma amounted to 35 (9%), 20 (5%), 9 (2.3%), 5 (1.3%), and 5 (1.3%) of all NHLs cases, respectively. Among the T-cell lymphomas, peripheral T-cell lymphoma not otherwise specified (PTCL-NOS) was the most common subtype 15 (3.85%), followed by anaplastic large-cell lymphomas, T-cell lymphoblastic lymphoma, NK/T-cell lymphoma, and angioimmunoblastic T-cell lymphoma which accounted for 9 (2.3%), 7 (1.8%), 5 (1.3%), and 2 (0.75%) of all NHL cases, respectively. Details of all NHL are given in Table 1.

The present study of North Indian population shows key differences in the presentation as compared to the developing country and other parts of India. Details of epidemiological studies are summarized in Table 2.

Classifying NHL according to B- and T-cell type has therapeutic and prognostic significance. Epidemiology of the Indian subcontinent is marked different from that of the Western literature in view of marked preponderance of high-grade lymphoma especially DLBCL. In this study, 68.5% patients were DLBCL, which is significantly higher as compared to previous reported study from India and the West.^[2-6] FL and MCL were the second and third most common subtype of B-NHL, and PTCL-NOS is the most common T-cell lymphoma in adult. The younger average age (median 50 years) of our patients is consistent with the pattern seen in most other malignancies in India, due to the effect of a younger population

Table 1: Non-Hodgkin lymphoma subtypes in adults

Non-Hodgkin lymphoma (n=390)	n (%)
B-cell lymphoma	347 (89)
DLBCL	267 (68.5)
FL	35 (9.0)
MCL	20 (5.0)
Marginal zone (nodal and extranodal)	9 (2.3)
SLL	5 (1.3)
NHL-others (BL, SLVL, PMBCL, etc.)	11 (2.8)
T-cell lymphoma	43 (11)
PTCL-NOS	15 (3.85)
ALCL	9 (2.3)
T-cell lymphoblastic lymphoma	7 (1.8)
NK/T-cell lymphoma	5 (1.3)
AITL	2 (0.75)
Others	5 (1.3)

DLBCL: Diffuse large B-cell lymphoma, FL: Follicular lymphoma, MCL: Mantle cell lymphoma, SLL: Small lymphocytic lymphoma, BL: Burkitt's lymphoma, ALCL: Anaplastic large-cell lymphoma, PTCL-NOS: Peripheral T-cell lymphoma not otherwise specified, AITL: Angioimmunoblastic T-cell lymphoma, SLVL: Small splenic lymphoma with villous lymphocytes, PMBCL: Primary mediastinal B-cell lymphoma, NK: Natural killer

Table 2: Subtype distribution of lymphoma across India and the west (USA)

	Nimmagadda <i>et al.</i> ^[2]	Arora <i>et al.</i> ^[3]	Naresh <i>et al.</i> ^[4]	Sahni and Desai ^[5]	SEER database (USA) ^[6]	Present study
Number of patients	1431 (total 1723, 16.8% are HL)	4026	2773	935	77,490	390
Type of lymphoma (%)						
DLBCL	55	46.85	33.8	50.2	31.67	68.5
FL	11	10.51	12.6	13.1	32.81	9
ALCL	3	5.04	4.1	4.8	1.11	2.3
PTCL	2.7	5.91	1.9	4.6	3.27	3.9
BL	2.5	3.38	1.8	3.0	1.42	1.3
MCL	1.8	1.59	3.4	2.1	2.18	5
Others	24*	26.7*	36.8*	21.2*	27.5*	10*

*Others includes: Angioimmunoblastic T-cell lymphoma; adult T-cell lymphoma/leukemia; enteropathy-associated T-cell lymphoma; extranodal NK/T-cell lymphoma, nasal type; hairy cell leukemia; hepatosplenic T-cell lymphoma; lymphoblastic lymphoma; nodal marginal zone B-cell lymphoma; subcutaneous panniculitis-like T-cell lymphoma; lymphoplasmacytic lymphoma; primary cutaneous CD30-positive lymphoproliferative disorders; splenic marginal zone B-cell lymphoma; mycosis fungoides/Sézary syndrome; PMBCL. Small lymphocytic lymphoma. DLBCL: Diffuse large B-cell lymphoma, FL: Follicular lymphoma, ALCL: Anaplastic large-cell lymphoma, PTCL-NOS: Peripheral T-cell lymphoma not otherwise specified, BL: Burkitt's lymphoma, MCL: Mantle-cell lymphoma, CLL/SLL: Chronic lymphocytic leukemia/small lymphocytic lymphoma, NK: Natural killer, PMBCL: Primary mediastinal B-cell lymphoma

pyramid in our country.^[7,8] The present study of North Indian population shows key differences in the NHL subtypes as compared to the developed world and other parts of India.

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Conflicts of interest

There are no conflicts of interest.

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