A STUDY OF MALIGNANT LYMPHOMAS IN THE CNS

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ABSTRACT

BACKGROUND

Extranodal malignant lymphomas arising in the CNS in the absence of lymphoma outside the nervous system at the time of diagnosis; these tumours need to be differentiated from secondary involvement of the nervous system in systemic lymphomas. The incidence of PCNSL has markedly increased world-wide from 0.8-1.5% up to 6.6% of primary intracranial neoplasms.

The main interest of the study is to study the malignant lymphomas in the CNS. According to our study, there is a clear male predominance and further study has to be conducted to find out the demographic variations of the disease.

METHODS

The sample size included 100 cases of intracranial neoplasms that turned in the Department of Medicine in KVJ Medical College, Sullia and different local private hospitals of Sullia and Mangalore.

RESULTS

Here was one case (1%) of Primary Central Nervous System lymphoma (PCNSL), Non-Hodgkin's type is studied in a 50-year-old male which was located in left basifrontal region.

CONCLUSION

There is a clear male predominance and further study has to be conducted to find out the demographic variations of the disease.

KEYWORDS

Malignant, Lymphoma, Central Nervous system, Tumour.

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INTRODUCTION: Extranodal malignant lymphomas arising in the CNS in the absence of lymphoma outside the nervous system at the time of diagnosis; these tumours need to be differentiated from secondary involvement of the nervous system in systemic lymphomas.

The incidence of PCNSL has markedly increased world-wide from 0.8-1.5% up to 6.6% of primary intracranial neoplasms.[1] Mainly, as the consequence of the AIDS epidemic in immunocompetent patients, the incidence has increased in some but not all series and populations.[2] Prior to the introduction of highly effective antiviral therapy [HAART], the incidence in AIDS patients [4.7 per 1000 person- years] was about 3600-fold higher than in the general population.[3] with 2-12% of AIDS patients developing primary CNS lymphomas mainly during later stage of AIDS.[4] HAART has reduced the occurrence of all non-Hodgkin's lymphomas with incidence rate of 0.4 for primary and secondary brain lymphomas in AIDS patients.[4] It accounts for 1% of all intracranial tumours.[5]CNS involvement occurs in 22% of post-transplant lymphomas, about 55% being confined to the CNS.

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PCNSL affects all ages, with a peak incidence in immunocompetent subjects during the sixth and seventh decade of life, and a male: female ratio of 3.2. In immunocompromised patients, the age at manifestation is lowest in individuals who have an inherited immunodeficiency [10 years] followed by transplant recipients [37 years] and AIDS patients [39 years, 90%]. In a profile of 26 cases from Western India, mean age at diagnosis was 59 years and male to female ratio is found as 1.6:1.[5]

About 60% of PCNSL involve the supratentorial space, including the frontal [15%], temporal [8%], parietal [7%], and occipital [3%] lobes, basal ganglia/periventricular regions [10%]; and corpus callosum [5%], posterior fossa [13%] and spinal cord [1%] are less commonly involved. Approximately 25-50% are multiple [60-85% in AIDS and post-transplant subjects]. Secondary meningeal spread is seen in 30-40% of PCNSL. While primary leptomeningeal lymphoma may account for up to 8% of these tumours.[6] Primary dural and epidural malignant lymphomas are very rare.[7] Ocular diseases [which may antedate intracranial lesions] are present in 15-20% of cases, and distant metastases in 6-10%.[8] Since occult lymphoma has been reported in up to 8% of patients presenting with brain lymphoma, complete systemic staging is recommended.[9]

AIMS AND OBJECTIVES: To study the malignant lymphomas in the CNS.

MATERIALS AND METHODS: The sample size included 100 cases of intra-cranial neoplasms that turned in the Department of Medicine in KVJ Medical College, Sullia and different local private hospitals of Sullia and Mangalore.

The cases were studied in an inter-department co-ordination. Most of the cases were diagnosed by clinical approach and confirmed by the Department of Radiology and The Department of Pathology.

RESULTS: There was one case (1%) of primary central nervous system lymphoma (PCNSL), Non-Hodgkin's type is studied in a 50-year-old male which was located in left basifrontal region.

Microscopically-tumour cells composed of mature lymphocytes, plasmacytoid lymphocytes with slightly peripherally placed nucleus and occasional plasma cells. The cells are seen spreading along the blood vessel (perivascular spread of tumour cells). Mitotic figures are sparse. This low-grade B-cell lymphoma seen invading the meninges and the brain parenchyma. (Fig. 1).

DISCUSSION:

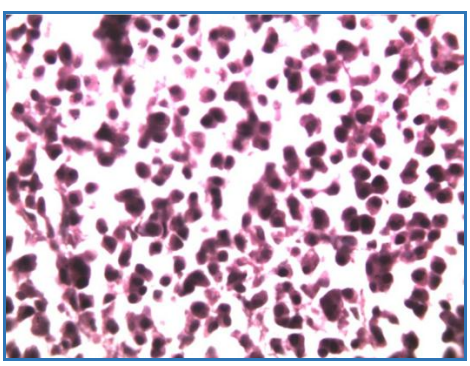

Fig. 1: Lymphoplasmacytoid lymphoma. Lymphocytes and plasmacytoid lymphocytes (arrow) are seen.

It is found that the incidence of lymphomas stands in between the study by Pankaj A et al[10] and Surawiez et al.[11]

Name of the study	% of intracranial tumours
Pankaj A et al[10]	1%
Surawiez et al[11]	4%
Present study	2.63%
Table 1: Comparison of incidence of lymphoma	

The present study showed the age incidence of 50 years which is similar to that of study by Tiwari et al.

Lymphoma	Avg. age in years
Pankaj A et al[10]	59
Bataille et al[12]	61
Tiwari et al[13]	50
Pells et al[14]	62
Present study	50
Table 2: Comparison of age incidence of lymphomas	

Male preponderance is seen in all the above studies. Similarly, in this present study, lymphoma was reported in a male patient.

Name of the Study	M:F ratio
Pells et al[14]	34:31
Poortmans et al[15]	35:17
Miller et al[16]	1.6:1
Present study	1 case in a male
Table 3: Comparison of sex incidence of lymphomas	

CONCLUSION: There is a clear male predominance and further study has to be conducted to find out the demographic variations of the disease.

REFERENCES:

1. Miller DC, Hochberg FH, Harris NL, et al. Pathology with clinical correlations of primary central nervous system non-Hodgkin's lymphoma. The Massachusetts general hospital experience 1958-1989. Cancer 1994;74(4):1383-97.
2. Corn BW, Marcus SM, Topham A, et al. Will primary central brain system lymphoma be the most frequent brain tumour diagnosed in the year 2000? Cancer 1997;79(12):2409-13.
3. Cote TR, Manns A, Hardy CR, et al. Epidemiology of brain lymphoma among people with or without acquired immunodefiency syndrome. AIDS/Cancer study group J Natlcancr Res 1996;88(10):675-679.
4. Sacktor N, Cyles RH, Skolasky R, et al. HIV-associated neurologic disease incidence changes: multicentre AIDS cohort study, 1990-1998. Neurology 2001;56(2);257-60.
5. Agarwal PA, Menon S, Smruti BK, et al. Primary central nervous system lymphoma: a profile of 26 cases from Western India. Neurology India 2009;57(6):756-63.
6. Groue A, Vyberg M. Primary leptomeningeal T-cell lymphoma: a case and a review of primary T-cell lymphoma of the central nervous system. Clin Neuropathol 1993;12(1):7-12.
7. Miranda RN, Glanz LK, Myint MA, et al. Stage IE non-Hodgkin's lymphoma involving the dura: a clinicopathologic study of five cases. Arch Pathol lab Med 1996;120(3):254-60.
8. Bronen MT, Melendon RE, Gockerman JP. Primary central nervous system lymphoma with systemic metastasis: case report and review. J Neurooncol 1995;23(3):207-21.
9. Abrey LE, Betchelor TT, Ferreri AJM, et al. Report of an international workshop on standardize baseline evaluation and response criteria for primary CNS lymphoma. J Clin-Oncol 2005;23(22):5034-5043.
10. Agarwal PA, Menon SA, Smruti BK, et al. Primary central nervous system lymphoma: a profile of 26 cases from western India. Neurology India 2009;57(6):756-63.

11. Surawiez TS, McCarthy BJ, Kupelian V, et al. Descriptive epidemiology of primary brain and CNS tumours: results from the central brain tumour registry of the United States, 1990–1994. Neuro Oncol 1999;1:14-25.
12. Bataille B, Delwail V, Menet E, et al. Primary intracerebral malignant lymphoma: report of 248 cases. J Neurosurg 2000;92(2):261-6.
13. Tiwari MK, Singh DP, Pathak A, et al. Primary central nervous system lymphoma. Experience of 46 cases with review of literature. Neurol India 2002;50(4):424-9.
14. Pells H, Schmidt-Wolf IGH, Glasmacher A, et al. Primary central nervous system lymphoma: report of 248 cases. J ClinOncol 2003;21:4489-95.
15. Poortmans PM, Kluin-Nelemans HC, Haaxma-Reiche H, et al. European Organization of research and Treatment of Cancer Lymphoma Group. High dense methotrexate-based chemotherapy followed by consolidated radiotherapy in non-AIDS related primary central nervous system lymphoma. J ClinOncol 2003;21(24):4483-8.
16. Miller DC, Hochberg FH, Harris NL, et al. Pathology with clinical correlations of primary central nervous system non–Hodgkin's lymphoma. The Massachusetts general hospital experience 1958-1989. Cancer 1994;74(4):1383-97.