



RETROSPECTIVE HISTOLOGICAL ANALYSIS OF CNS TUMOURS –A STUDY AT A TERTIARY CARE HOSPITAL IN JHARKHAND.

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ABSTRACT

BACKGROUND: CNS tumors comprise 1-2% of all malignancies. CNS tumours encompass a broad spectrum with regards to age, location, histology and clinical outcomes. This article aims to study the incidence of CNS tumors in different age groups and also to study the major histologic subtypes of brain tumours.

MATERIALS AND METHODS: This study was done at Rajendra Institute of Medical Sciences (RIMS), Ranchi, from Jan 2015 to April 2018.

RESULTS: Our study included 104 patients between 2-70years age group with CNS tumors that were histologically confirmed. The most common tumour was astrocytoma (51.92%) followed by meningioma (31.73%).

CONCLUSION: This article will help to evaluate the burden of CNS tumours in different age groups in our region. It will also help to study major histological subtypes of CNS tumours.

KEYWORDS : CNS tumours, Astrocytoma, Meningioma.

INTRODUCTION

CNS tumours comprise <2% of all malignancies¹.The central nervous system consists of cerebrum, cerebellum, brain stem, spinal cord, meninges,12 paired cranial nerves and the blood vessels supplying these structures. The incidence of CNS tumours varies greatly with age and gender. Among adults, metastases, glioblastoma multiforme and meningioma are the most common CNS neoplasms. Among children pilocytic astrocytoma, medulloblastoma and ependymoma are far more common. Tumours often differ in their radiographic features and propensity for certain anatomic sites. Advances in diagnostic imaging, surgical techniques, radiotherapy and generation of newer chemotherapeutic agents over the past few years have helped in treating the treatment outcome.²

The article aims to evaluate the burden of CNS tumours in different age groups in our region and to study the major histologic subtypes of brain tumours.

MATERIALS AND METHODS

The study was done in Rajendra Institute of Medical Sciences (RIMS), Ranchi, Jharkhand. Data were collected from Jan 2015 to April 2018 and included all patients with clinical and radiological suspicion of CNS tumours undergoing biopsy or resection as part of their diagnostic or therapeutic evaluation. The sections were stained by hematoxylin and eosin and immunohistochemistry was selectively used. All tumours covered by World Health Organization (WHO) 2016 classification scheme were included.

RESULTS

Our study included 104 patients with a clinical and radiological diagnosis of CNS tumours. Patients included 59 (56.7%) males and 45(43.3%) females. Glioma was the most common tumour(51.92%) followed by meningioma(31.73%),schwannoma(10.58%).

ependymoma(1.92%),neurofibroma(1.92%),hemangioblastoma(0.96%),medulloblastoma(0.96). Astrocytoma was more common in age group 41-50years,Schwannoma and Meningioma were more common in 31-40years. There were 10 cases(18.51%) of grade I ,25 cases(46.29%) of grade II ,16 cases(29.63%) of grade III and 3 cases(5.6%) of grade IV astrocytic tumours.33 cases of grade I meningioma was reported.

HISTOLOGICAL TYPES	N	%
Astrocytoma	54	51.92

Meningioma	33	31.73
Schwannoma	11	10.58
Ependymoma	2	1.92
Neurofibroma	2	1.92
Hemangioblastoma	1	0.96
Medulloblastoma	1	0.96
Total	104	100

TABLE 2: DISTRIBUTION OF LESIONS ACCORDING TO SEX

HISTOLOGICAL TYPES	M	F
Astrocytoma	34	20
Meningioma	15	18
Schwannoma	7	4
Ependymoma	1	1
Neurofibroma	1	1
Hemangioblastoma	1	0
Medulloblastoma	0	1

TABLE 3: DISTRIBUTION OF LESIONS ACCORDING TO AGE

HISTOLOGICAL TYPES	0-10	11-20	21-30	31-40	41-50	51-60	61-70
Astrocytoma	0	11	13	9	16	4	1
Meningioma	1	5	4	10	9	3	1
Schwannoma	0	2	1	5	3	0	0
Ependymoma	0	1	0	1	0	0	0
Neurofibroma	0	0	1	1	0	0	0
Hemangioblastoma	0	0	1	0	0	0	0
Medulloblastoma	1	0	0	0	0	0	0

TABLE 4: DISTRIBUTION ACCORDING TO WHO CLASSIFICATION

HISTOLOGICAL TYPES	WHO GRADING				TOTAL	
	I	II	III	IV	N	%
Astrocytoma	10	25	16	3	54	51.92
Meningioma	33	0	0	0	33	31.73
Schwannoma	11	0	0	0	11	10.58
Ependymoma	1	1	0	0	2	1.92
Neurofibroma	2	0	0	0	2	1.92
Hemangioblastoma	1	0	0	0	1	0.96
Medulloblastoma	0	0	0	1	1	0.96

DISCUSSION

In our study, astrocytoma was found to be most common tumour (51.92%). The same was found by Aryal G. et al (2011)³ in Nepal. Sex distribution showed that meningioma affects females more than

males, as it was noted by Surawicz et al⁴. According to WHO classification, majority of lesions belonged to Grade I. But in astrocytoma, Grade II lesions were more common.

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