

ABSTRACT NO:05 RESEARCH ARTICLE

Ten year retrospective cohort of primary Intracranial Germ cell tumour in children adolescents and young Adults at a tertiary centre in a Low- to middle-Income country: Prevalence, Treatment, and Outcomes

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Abstract

Objective: To describe the demographic characteristics, clinical presentation, radiological findings, tumour characteristics, histological subtypes, and associated complications (including comorbidities, raised intracranial pressure, and obstructive hydrocephalus) among children, adolescents, and young adults diagnosed with intracranial germ cell tumours.

Methods: This retrospective cohort study included all patients up to the age of 25 years diagnosed with IGCTs, through tissue biopsy, MRI, CSF cytology, and serum/CSF tumour markers (AFP and β -hCG), at the Aga Khan University Hospital, Karachi. Data were collected on presenting complaints, tumour characteristics, surgical intervention, chemoradiotherapy regimen, and outcomes.

Results: Twelve patients were identified; 7 (58.3%) were male, with a mean age at diagnosis of 13.25 ± 6.78 years. Germinomas accounted for 7/12 (58.3%) cases and non-germinomatous germ cell tumours (NGGCTs) for 5/12 (41.7%), including immature and mature teratoma, yolk sac tumour, and mixed germ cell tumour. Most tumours were found in the pineal region 7/12 (58.3%). The most frequent presenting symptoms were headache 9/12 (75.0%), vomiting 8/12 (66.7%), and visual abnormalities 6/12 (50.0%). Isolated AFP increase was seen in 5/12 (41.7%) patients and half were tumour marker negative. Chemotherapy was administered in 10/12 (83.3%) patients, most commonly carboplatin-etoposide 7/12 (60%), followed by ICE-based regimens 4/12 (30%). Radiotherapy was delivered in 5 (41.7%), primarily using IMRT or VMAT, including whole-brain, ventricular, or craniospinal protocols with tumour-bed boost based on disease extent. Overall survival was 11/12 (91.7%), with one mortality in a patient with yolk sac tumour.

Conclusion: This study serves as the first comprehensive characterization of IGCTs in Pakistan, demonstrating favourable outcomes similar to international studies.

Keywords: Intracranial germ cell tumor (IGCT), Pediatric neuro-oncology, Germinoma

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