

ABSTRACT NO:01  
RESEARCH ARTICLE**When Diagnosis Is Not Enough: Management Challenges and Outcomes of CNS Tumours in Children Under Three Years in the Largest Public-Sector Center in Pakistan**Rahat ul Ain <sup>1</sup>, Laeeq ur Rehman <sup>2</sup>, Rabia Qaiser <sup>3</sup>, Mahvish Hussain <sup>4</sup>, Amber Goraya <sup>5</sup>, Mahwish Faizan<sup>6</sup>**Abstract**

**Objective:** TCNS tumours in children under three years pose unique challenges, especially in resource-limited settings. The objective of this study was to evaluate the demographics, management challenges, and outcomes of these children at Pakistan's largest public-sector paediatric referral centre.

**Methods:** This prospective observational cohort study included all children under three years presenting with CNS tumours at The Children's Hospital Lahore, from January 2023 to December 2025. No formal sample size was calculated. Non-probability consecutive sampling technique was used. Written informed consent was obtained from the parents/legal guardians of all participating children. The study was approved by the Institutional Review Board/Ethics Committee of CHL/UCHS. Data were analyzed using descriptive statistics (SPSS v26).

**Results:** A total of 115 children with radiologically suspected CNS tumours were included (mean age  $1.92 \pm 0.90$  years; male: female ratio being 1.4:1). The median monthly household income was USD 90, (IQR 58) and 27(24%) travelled >600 km for treatment. Median diagnostic delay was 2.0 months (IQR 1.0–4.0); 49(43%) were diagnosed within one month, while healthcare- and patient-related delays accounted for 24(21%) and 42(36%) of cases, respectively. Vomiting (n=41, 36%), focal neurological deficits (n=24, 21%), and motor regression (n=8, 7%) were the most common presenting features. Consanguinity was present in 42 (36%) patients. Tumours were infratentorial (n=56, 49%), supratentorial (n=53, 46%), or spinal (n=6, 5%), with the cerebellum the most common primary site in 48 (42%). Only 38 (33%) patients received definitive treatment (surgery and/or chemotherapy), while the remainder did not receive any tumour-directed therapy. Low-grade glioma was the most common diagnosis in 11(9.5%) followed by embryonal tumours in 9(7.8%), ependymoma in 8(6.9%), choroid plexus tumours in 6( 5.2%), and high-grade glioma/DIPG in 3(2.6%) each. Median time to treatment initiation was 0.9 months (IQR 0.5–2.0). Median overall survival in treated vs untreated patients was 13.0 vs. 2.5 months (log-rank  $\chi^2=8.13$ ,  $p=0.004$ ). Overall survival was in 25 (22%) patients, 45(39%) were lost to follow-up, while 45(39%) patients died, including 17 postoperative deaths (50% of surgically treated patients) and 28 deaths from progressive disease while awaiting surgery. Survivors had a median Lansky score of 100 (IQR 80–100).

**Conclusion:** Despite relatively early diagnosis and referral, limited access to definitive treatment and substantial surgical mortality resulted in high loss to follow-up and poor survival. However, survivors achieved excellent functional outcomes.

**Keywords:** Central Nervous System Neoplasms; Infant; Treatment Outcome

**DOI:** <https://doi.org/10.47391/JPMA-7ANOS-ABS-2>

(JPMA 76:S3(Supple-1); 2026)

.....  
<sup>1-6</sup>The Children's Hospital Lahore, University of Child Health Sciences, Lahore, Pakistan

**Correspondence:** Rahat ul Ain **Email:** [dr.rkashif@yahoo.com](mailto:dr.rkashif@yahoo.com)

**ORCID ID:** 0000-0001-8492-1293