INTRODUCTION: Hydrocephalus associated with central nervous system (CNS) tumours in children presents a significant treatment challenge. We have analysed its incidence, risk factors and management at a single institution.

METHODS: Retrospective review was undertaken of consecutive children with CNS tumours and hydrocephalus admitted at single institution between January 2011 to December 2015. Data collected included demographics, tumour location, histology, incidence of hydrocephalus, treatment details, and outcome.

RESULTS: 168 patients were treated with a mean age of 4.1 years (range, 0.2 to 17.1 years), male-to-female ratio of 1:1, and a rate of hydrocephalus of 49%. 34% were posterior fossa tumours (PFT) and 66% were supratentorial tumours (STT) with a rate of hydrocephalus of 89% and 29%, respectively ($p < 0.05$). Amongst the PFT group, hydrocephalus was treated by primary debulking alone (37%), temporary CSF diversion (external ventricular drain/lumbar drain) (14%), and permanent CSF diversion (endoscopic third ventriculostomy/VP shunt) (49%). The corresponding proportions amongst the STT group were 38%, 25% and 37%, respectively. Age < 5 years versus > 5 years was associated with a permanent CSF diversion rate of 53 vs 37% ($p < 0.05$) respectively. ETV prior to debulking was associated with a failure rate of 12.5% (PFT group) and 22% (STT group). The incidence of VPS/EVD-related infection was 6.4%. CONCLUSION: There is a particularly high prevalence of hydrocephalus in children with posterior fossa tumours. Treatment approaches include debulking, temporary and permanent CSF diversion. CSF diversion is challenging, commonly complicated by repeat procedures, and attendant risks of infection and blockage.