ISNACC-S-06

An analysis of intraoperative ultrasound-guided gross total resection in glioblastoma multiforme**Surg C dr Vidhu Bhatnagar, Surg Cmde K I Mathai, Surg Cdr Vimal Vibhakar**

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Background: Glioblastoma multiforme (GBM) constitutes 50% of gliomas and is the most common and lethal primary tumour of the central nervous system. The lifespan of a patient without treatment is only about 6 months. Treatment protocols include surgical resection followed by radiation and chemotherapy. The extent of surgical resection has a direct bearing on life expectancy and quality of life. At our centre, we used intraoperative ultrasound guidance for tumour resection. **Methodology:** A retrospective, descriptive analysis of 22 consecutive GBM patients for recurrence-free survival managed at the neurosurgical centre of our tertiary care institute, from September 2014 to September 2015. Pre- and post-surgery computed tomography scans helped analyse the extent of resection. **Results:** Five of the eight frontal GBM's, four of eight temporal GBM's and two of the four parietal GBM's underwent gross total resection of tumour as confirmed by post-operative imaging. No permanent neurological deterioration persisted for more than 3 weeks even after gross total resections close to eloquent regions. A minimum period of 6 months follow-up was achieved in all patients in this series. There was no operative or perioperative mortality in this cohort. Nine of the 11 patients who underwent gross total resection did not manifest tumour recurrence at 6 months of follow-up. Five of the nine patients who underwent subtotal resections were symptomatic with headaches and developed radiological evidence of tumour progression within a 6 month period. **Discussion:** Glioblastomas were believed to originate from malignant transformation of differentiated glial cells. Conventional treatment includes maximal safe surgical resection followed by radiotherapy with concurrent and adjuvant temozolomide. Tumour recurrence is early and inevitable and often occurs within the radiation field. The aim of surgery is to achieve maximal excision without producing a debilitating deficit. Aids to maximal excision include intraoperative fluorescein staining of tumours and intraoperative magnetic resonance imaging. In our study, gross total resection was achieved using ultrasound guidance intra-operatively which correlated with longer recurrence-free survival.

ISNACC-S-07

Pulsatility index correlates with opening intraventricular intracranial pressure**Narender Kalaria, Nidhi Bidyut Panda, V. K. Grover, Hemant Bhagat, Rajesh Chhabra¹, Shiv Soni, Rajeev Chauhan**Departments of Anaesthesia and Intensive Care and ¹Neurosurgery, Post Graduate Institute of Medical Education and Research, Chandigarh, India

Background: Increased intracranial pressure (ICP) is life-threatening complication of a variety of neurologic insult. Various non-invasive methods have been employed to estimate ICP, transcranial Doppler (TCD) is one of them. Increase ICP leads to decrease in diastolic flow velocity (FV) and mean FV in major intracranial vessels resulting in increase in pulsatility index (PI) derived by TCD. Hence, the present study was designed to find a correlation between TCD derived PI with opening intraventricular ICP. **Methodology:** A prospective, observational, double-blinded study was conducted in Post Graduate Institute of Medical Education and Research, Chandigarh. Thirty-two patients of age 8–60 years with clinical features of raised ICP posted for endoscopic third ventriculostomy or ventriculoperitoneal shunt were enrolled after getting Institute Ethics Committee clearance and written informed consent from patient's kin. A 2 Mz probe of TCD was insonated through temporal window to measure FV in middle cerebral artery (MCA) pre-operatively, and PI was calculated. A standard anaesthesia protocol was followed in all cases. Opening intraventricular ICP was measured through a ventriculostomy catheter inserted into lateral ventricle and pressure measured without loss of cerebrospinal fluid. Spearman correlation test was used to correlate PI with intraventricular ICP. Receiver operating characteristic curve was drawn at different values of ICP to find out the corresponding PI. **Results:** MCA FV was measured by TCD in all 32 patients. The systolic and mean velocity varies from 69.3–144 cm/s to 25–89.3 cm/s, respectively. The opening intraventricular ICP values ranged from 9 to 44 mmHg. PI had a strong significant positive correlation with intraventricular ICP. At ICP cut-off value of 20 mmHg, PI was ≥ 0.92 (70.6% sensitivity and 66.6% specificity; $P = 0.009$). **Discussion:** PI correlates well with opening intraventricular ICP, so it can be used to diagnose intracranial hypertension and guide ICP reduction therapy.

ISNACC-S-08

An observational study comparing the recovery time in patients receiving additional anticonvulsant dose versus those receiving regular dose during supratentorial craniotomy**Rosen Roy Mathew, Ramamani Mariappan**

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