

**Background:** Resection of brain tumours has been associated with increased blood loss and blood transfusion. Achieving proper haemostasis forms one of the most important intraoperative goals in such surgeries. Tranexamic acid has been used to reduce blood loss in various settings, but its efficacy and use in neurosurgery is very limited. The purpose of this randomised, double-blinded, placebo-controlled, parallel trial was to evaluate the efficacy of Tranexamic acid on blood loss and quality of surgical field in meningioma resection surgeries. **Materials and Methods:** 30 patients, aged 18–65 years undergoing elective meningioma resection surgeries were included in the study. They received either Tranexamic acid or placebo at a loading dose of 25 mg/kg and infusion of 1 mg/kg/hr during surgery. The intraoperative blood loss was measured. The surgical field was assessed by the surgeon using 5-point Likert scale. **Results:** The patients who received Tranexamic acid had significantly less blood loss compared to the placebo group ( $616.42 \pm 393.42$  vs  $1150.02 \pm 416.1$ ,  $P = 0.02$ ), which accounted for 46.43% reduction in blood loss. It also reduces the intraoperative blood transfusion requirement (0 vs 6,  $P = 0.0016$ ). The quality of the surgical field was significantly better in the Tranexamic acid group with a median score 4 compared to 2 in placebo group ( $P < 0.001$ ). The blood collected in closed suction drain 24 hours post surgery was less in the Tranexamic acid group compared to placebo group ( $84.7 \pm 50.4$  vs  $127.6 \pm 62.2$ ,  $P = 0.047$ ). **Conclusion:** Tranexamic acid reduces perioperative blood loss and transfusion requirement with improved surgical field in patients undergoing meningioma resection surgeries.

#### Post-operative cerebral vasospasm prophylaxis using hypertensive therapy alone in cerebral aneurysm clipping: Our experience at KIMS

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**Background:** To discuss the institutional experience in the management of post operative vasospasm in cerebral aneurysms using hypertensive therapy. **Materials and Methods:** It is a retrospective descriptive study done in patients with cerebral aneurysms who were managed by surgery at KIMS hospital between Jan 2009 to Oct 2014. Totally 200 patients are included in this study. **Results:** As per the age distribution there were 39 patients with age < 40 yrs, 52 aged 40–49 yrs, 58 aged 50–59 yrs, 39 aged 60–69 yrs and 12 aged > 70 yrs. As per WFNS grading criteria 106 patients were Gr I, 52 were Gr II, 20 were

Gr III, 17 were Gr IV and 5 were Gr V. 178 patient had ruptured aneurysm and 22 patient were with un-ruptured aneurysm. Of the 200 patients 61 patient developed post op vasospasm requiring treatment with Papaverine through intra-operatively placed reservoir. Of this 61 patients 10 patients had vasospasm during 1–2 days, 33 during 3–4 days, 13 during 5–10 days, 2 during 11–15 days 1 during 15–20 days and 2 patients developed vasospasm after 20 days post ictus respectively. **Conclusions:** Using only hypertensive therapy as prophylaxis for post op vasospasm 61 patients of the total 200 developed vasospasm, and 48 patients had vasospasm during 3<sup>rd</sup> to 15<sup>th</sup> day post ictus. To conclude the incidence of cerebral aneurysm is more common in females after 50 years. Most are ruptured status with WFNS Gr I. Prophylactic administration of Hypertensive therapy alone can decrease the incidence of post op vasospasm 30.5% in our study when compared to conventional use of triple H therapy where the incidence in various trials is inconclusive.

#### Attenuating emergence response: Fentanyl or dexmedetomidine, which is better?

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**Background:** Fentanyl is often used to attenuate the emergence haemodynamic response following general anaesthesia which when untreated could cause post-craniotomy intracranial haematoma. We compared dexmedetomidine with fentanyl and placebo, for attenuating haemodynamic response during emergence and extubation. **Materials and Methods:** One hundred fifty ASA grade I and II normotensive patients, aged 18–55 years undergoing elective surgeries under general anaesthesia were randomized into 3 groups. Ten minutes prior to extubation, patients received intravenous bolus infusion of saline 0.9%, fentanyl 1 µg/kg and dexmedetomidine 1 µg/kg respectively over 10 minutes period. Heart rate (HR), blood pressures, extubation quality (5-point scale), sedation and recovery scores were recorded at regular intervals. Rescue drugs used were noted. **Results:** At extubation, HR increased by  $49 \pm 19\%$  with saline compared to  $27 \pm 14\%$  with fentanyl and  $15 \pm 15\%$  with dexmedetomidine ( $P < 0.001$ ). Systolic blood pressure increased by  $43 \pm 13\%$  with saline compared to  $23 \pm 13\%$  with fentanyl and  $16 \pm 14\%$  with dexmedetomidine ( $P < 0.001$ ). Hypertensive response (>30% increase from baseline) was seen in 86%, 18% and 6% of patients ( $P < 0.001$ ) for a duration of  $15 \pm 14$  minutes,  $4 \pm 2$  minutes and  $6 \pm 5$  minutes with saline, fentanyl and dexmedetomidine