

IPPV with 50% Air: Oxygen. Continuous radial arterial pressure, CVP and EtCO₂ was monitored throughout surgery. During facial and auditory nerve testing, muscle relaxant was discontinued and TOF monitoring was used. Any intraoperative (VAE, haemodynamic instability) and postoperative (pneumoencephalus, macroglossia, neurodeficits) complications were noted. **Results:** In our study, 50% of patients had a drop in BP 10-20 mmHg during positioning and 15% had bradycardia during surgical retraction. Incidence of VAE was 7% and associated hypotension was seen in 2 patients. All patients developed postoperative pneumoencephalus but only 1 patient presented with temporary blindness. 1 patient had macroglossia and had to be reintubated. There was 1 case of temporary quadriplegia and 1 foot drop. There was no mortality. **Conclusion:** Despite potential complications, with appropriate patient selection and intraoperative monitoring patients will benefit from using sitting position for posterior fossa surgery.

The incidence of coagulopathy and its effect on outcome in patients with traumatic brain injury (TBI)

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Background: Coagulopathy following isolated traumatic brain injury (iTBI) is well known and studies have found an association between coagulopathy and unfavourable outcome. We conducted this study to determine the incidence and the effect of coagulopathy (both early and late) on postoperative outcome. **Materials and Methods:** In this prospective observational study the following data were collected: age, sex, mode of injury, CT diagnosis, post-resuscitation Glasgow Coma Scale (GCS), preoperative and post operative platelet count, liver function tests, intraoperative blood loss and transfusion, fluids infused, and repeat surgery for haematomas. Coagulocheck XS was used to obtain prothrombin time (PT) and International Normalized Ratio (INR) within 1st 24 hours and repeated at 48-72 hours. Coagulopathy was defined as INR \geq 1.3 and thrombocytopenia as platelet count \leq 1 lakh. Outcome measures used were length of hospital stay, GCS at discharge and mortality. **Results:** In the study population of 166 patients, mean age was 36 ± 13 years and average preoperative GCS was 8.8 ± 3.6 . The incidence of coagulopathy increased from 42.8% to 55.6% and thrombocytopenia from 3.5% to 14.7% at 72 hours. Patients with coagulopathy had lower preoperative GCS (8.6 ± 3.4 vs 9 ± 3.6 , $P = 0.02$), had greater intraoperative blood loss and received more crystalloids and colloids. However, there was no difference in the incidence of postoperative haematomas, length of stay, GCS at discharge or

mortality. **Conclusion:** The incidence of early coagulopathy is high, increases at the end of 48-72 hours and is associated with increased intraoperative blood loss and fluid requirements. However, we could not demonstrate increased mortality or poor outcome in patients with deranged coagulation.

Effect of dexmedetomidine for ICU sedation in head injury patients

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Introduction: Although neuro-intensive patients share many goals with general ICU patients, some indications are unique to the NICU population, such as maintaining adequate cerebral perfusion pressure (CPP), while controlling intracranial pressure (ICP) and mean arterial pressure (MAP). **Materials and Methods:** We compared the effect of 0.2-0.7 $\mu\text{g/kg/hr}$ dexmedetomidine infusion to a standard sedative infusion of fentanyl 0.2-1 $\mu\text{g/kg/hr}$ and midazolam 0.02-0.07 mg/kg/hr in 11 consecutive patients of Traumatic Brain Injury (TBI) admitted to the neurosurgical intensive care unit (NICU) in crossover alternation for the first 48 hours after admission, titrating sedation to the Richmond Agitation-Sedation Scale (RASS). **Results:** Patient demographics were well matched between the two groups. Hemodynamics (HR, MAP) and intracranial pressure (ICP) along with cerebral perfusion pressure (CPP) were well maintained within ($P = 0.472, 0.219, 0.328$, and 0.165) and between both the groups ($P = 0.096, 0.432, 0.478, 0.175$ respectively) and the differences were not statistically significant [Figures 2-4]. Patients in Group D had similar RASS scores to those of Group C ($P = 0.894$) [Figure 5]. GCS was positively correlated with RASS in Group D ($P = 0.467$, $P = 0.021$) and Group C ($P = 0.654$, $P = 0.001$). Amount and number of rescue boluses of sedation with midazolam were similar in both the groups ($n = 3$, $P = 0.463$), nor any adverse effects seen in either group. **Conclusion:** Dexmedetomidine is a safe alternative to conventional fentanyl and midazolam sedative infusion for TBI patients admitted to Neurosurgical Intensive Care Unit, maintaining both cardiovascular (HR, MAP) as well as cerebral (ICP, CPP) dynamics, paving the way for future exploration of dexmedetomidine for sedation for neurosurgical ICU patients.

Attenuation of extubation responses: Comparison of prior treatment with verapamil and dexmedetomidine

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Background: Tracheal extubation is almost always associated with stress response, airway response and arrhythmias. We have compared Verapamil and Dexmedetomidine on attenuation of these responses. **Materials and Methods:** Thirty patients (ASA grade I, II) scheduled for spinal surgeries under general anaesthesia were randomly divided into two groups. At the end of surgery, after return of spontaneous efforts (BIS > 80), in "Group V" Verapamil 0.1 mg/kg and in "Group D" Dexmedetomidine 0.3 µg/kg were administered bolus intravenously over one minute. Heart rate, SBP, DBP and MAP were recorded just before and 2 minutes after intravenous administration, just after oral suction and extubation and 10 minutes post-extubation. Duration of emergence and extubation, quality of extubation, Richmond Agitation and Sedation Score (RASS) and time to reach Modified Aldret Score ≥ 9 were evaluated. **Results:** Heart Rate, SBP, DBP, MAP were higher in Group V than Group D but statistically insignificant ($P > 0.05$). Extubation Quality Scores was 1 for 20%, 2 for 60% and 3 for 20% patients in Group V whereas 1 in 80%, 2 in 20% in Group D. There was occurrence of Bradycardia within 2 minutes of administration of drug in 1 patient in Group D. RASS score was in the range of -1 to +1 in > 90% patient in Group V whereas -3 to -1 in 80% cases in Group D. **Conclusion:** Single dose of dexmedetomidine (0.3 µg/kg) given before extubation produced significant attenuation of circulatory and airway responses during extubation as compared to Verapamil (0.1 mg/kg).

Comparison of peri-operative course of patients undergoing trans-sphenoidal pituitary surgery via endoscopic versus microscopic approach - A retrospective analysis

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Background: Endonasal endoscopic approach for transsphenoidal excision of pituitary adenoma has undergone remarkable evolution in last two decades. It is considered less invasive and less stressful, with results comparable to the previous 'gold standard' technique of microscopic transsphenoidal excision of pituitary adenoma. **Materials and Methods:** Data of 307 patients from January 2011 till December 2013 were reviewed. Various parameters were divided and compared on the basis of type of approach for pituitary tumor resection vis-à-vis microscope assisted sublabialtranssphenoidal resection (MSLTS) or microscope assisted transnasal transsphenoidal resection (MTNTS) or endoscope assisted endonasal transsphenoidal resection (ETSS). **Results:** Demographic variables (except age); tumor type (microadenoma/macroadenoma/giant and functional status), dimensions, and invasiveness;

patients' comorbidities were comparable among three groups. Duration of surgery and anaesthesia were shortest for MTNTS group and longest for ETSS group ($P < 0.001$). Blood loss was higher in ETSS technique (median 300 ml) and least in MTNTS (median 100 ml) and difference was significant across all three groups ($P = 0.0003$). Postoperatively, pain, nausea/vomiting, electrolyte imbalance, respiratory and cardiovascular problems, and imaging findings were comparable among all the three groups. Post-operative CSF rhinorrhoea was 17% in the MSLTS group compared to 6.5% in MTNTS and 7.9% in ETSS ($P = 0.047$). **Conclusions:** ETSS with the expected advantage of being less invasive, offers a better chance for complete resection of adenoma. Neuroanaesthesiologist must however be prepared for longer surgical time and more blood loss as compared to previous microscopic approach, atleast till the surgeons expertise in this newer technique.

Outcome of Hypernatremia in neurological/neurosurgical patients: A retrospective analysis

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Background: Hypernatremia is known to have high mortality and morbidity. However, in many of the studies it is not clear whether the Hypernatremia associated with brain death has been excluded or not. As including them and Glasgow coma score (GCS) 3 patients will spuriously give a very high mortality rate. In this study, we have evaluated the mortality of Hypernatremia patients after excluding the brain dead and of GCS 3 patients on the first day of Hypernatremia. **Materials and Methods:** All the neurological patients admitted to hospital and had Hypernatremia were included into the study. Brain dead and GCS of 3 patients on the first day of Hypernatremia were excluded. The demographic variables, clinical variables and outcome variables were collected from the case files retrospectively. **Results:** Totally, one hundred Hypernatremia patients were chosen for the study. Among them 14 patients were excluded because of GCS 3 or GCS data was not available on the day of Hypernatremia. The demographic variables were given in the table. There was 32%, 39% and 52% mortality in the mild, moderate and severe Hypernatremia patients respectively. The head injured patients had higher mortality in comparison to all other diagnoses (56% Vs 29.6%, $P < 0.02$). **Conclusion:** The mortality is very high even in mild cases of Hypernatremia. Very high mortality (52%) is seen, even after excluding the GCS 3 patients. Therefore it is very important to identify, treat and monitor aggressively these patients.