

if untreated, high risk endovascular treatment, poor grade SAH indicated complex post treatment course (vasospasm and death). (2) Patient Autonomy - No capacity to make medical decisions, no advanced statement about extent of care, doctors should make healthcare decisions in her best interest. (3) Quality of Life - High chance of deteriorating to Modified Rankin 5 or 6 (death), best outcome, with or without treatment, would be a return to baseline Modified Rankin 4 - a state to be endured. (4) Contextual issues - Doctors recommended CT angiogram for definitive diagnosis. This strengthened the doctor's position against advocating treatment in view of complex lesion and poor prognosis. **Case Summary:** A 74 year old pre-morbidly poor female (modified Rankin 4 from multiple ischaemic strokes) presented with a poor grade (E2V1M3, Modified WFNS Grade V) subarachnoid haemorrhage. She was admitted to the NICU. Her family refused further investigations or treatment. Her GCS improved to E4VTM5. We used the 4 box approach (described by Jonsen AR et al) to guide decision-making. Her family agreed for a CT angiogram to facilitate this. This revealed a ruptured left vertebral artery aneurysm with tortuous and narrow vessel. Endovascular treatment was deemed difficult and risky. With this information, the family and doctors agreed for conservative management. She was extubated and discharged minimally communicative (E4V1M5) and modified Rankin 5 (fully dependent at all times). **Conclusion:** Four box approach clarified relevant patient medical and ethics issues, thereby guiding doctors in decision to accede to family's wish to withhold questionably beneficial treatment, in patient's best interest.

#### ISNACC-S-49

**Effect of 0.45% sodium chloride and plasmalyte a used during intraoperative and postoperative period on serum osmolality in patients undergoing craniopharyngioma surgery**

**Pranshuta, N. B. Panda, K. K. Mukherjee<sup>1</sup>, H. Bhagat, N. Sahni, P. Dutta<sup>2</sup>**

Departments of Anaesthesia and Intensive Care, <sup>1</sup>Neurosurgery, <sup>2</sup>Endocrinology, PGIMER, Chandigarh, India

**Introduction:** Electrolyte imbalance and acute diabetes insipidus (DI) are the most common complications in patients undergoing craniopharyngioma surgery. Data is sparse regarding the choice of fluid in patients undergoing craniopharyngioma excision. We compared the effects of iso-osmolar Plasmalyte A and hypo-osmolar 0.45% saline infused perioperatively on peri operative serum osmolality, serum sodium level and incidence of diabetes insipidus. **Methods:** A prospective randomised double blind study was conducted in 27 patients undergoing transcranial excision of craniopharyngioma. The

patients received either plasmalyte A or 0.45% normal saline intraoperatively and in postoperative period till patients were started exclusively on oral fluids. Serum and urine osmolality, serum and urine sodium, urine specific gravity, GCS and total dose of desmopressin required was measured in the peri operative period and postoperatively. **Results:** Demographic data were comparable. A statistically significant difference was found between the two groups in serum osmolality at 2<sup>nd</sup> hour ( $p = 0.03$ ), 3<sup>rd</sup> hour ( $p = 0.006$ ) and end of the surgery ( $p = 0.034$ ), postoperative day 0 and 1 with  $p = 0.03$ ,  $p = 0.03$  respectively with 0.45% saline group having serum osmolality less than 300 mosm/kg as compared to plasmalyte group. We found intraoperatively, the difference in serum sodium levels was significant higher in patients receiving Plasmalyte A as compared to those receiving 0.45% sodium chloride at 3<sup>rd</sup> hour ( $p = 0.009$ ) and at the end of surgery ( $p = 0.009$ ) although the values in both the groups were within normal limits. **Conclusion:** Perioperative fluid is an important determinant of serum sodium and serum osmolality in patients undergoing craniopharyngioma surgery. 0.45% sodium chloride is preferred over Plasmalyte A as serum osmolality and serum sodium were maintained better with 0.45% sodium chloride infused in intraoperative and early postoperative period till patients were exclusively put on oral feed.

#### ISNACC-S-50

**Effect of intraoperative aneurysm rupture on perioperative complications and neurological outcome in adult patients undergoing surgical clipping for aneurysmal subarachnoid haemorrhage**

**N. Radhakrishna, R. S. Chouhan, M. P. Pandia**

Department of Neuroanaesthesiology and Critical Care, AIIMS, New Delhi, India

**Introduction:** Management of ruptured intracranial cerebral aneurysms remains formidable challenge despite the remarkable advancements in neurosurgery and neuroanaesthesia. Intraoperative rupture (IAR) is a well-known complication occurring during surgical clipping. We undertook this retrospective study to look for an association of IAR with perioperative complications and neurological outcome in adult patients who underwent surgical clipping for ruptured intracranial aneurysm with SAH. **Methods:** Data of all adult (Age >18 yrs) patients who underwent surgical clipping for aneurysmal subarachnoid haemorrhage (aSAH) at our institute between January 2013 and December 2014 was collected. The patients were then divided into two groups based on occurrence of IAR. Intraoperative complications and postoperative complications were noted. Neurological outcome was

classified according to the Glasgow Outcome Scale (GOS) as favourable (grades IV and V) and unfavourable (grades I-III). **Results:** During the study period, a total 195 patients of aneurysmal SAH underwent surgical clipping, and their data was analysed. Patients were categorized into two groups - Group R with IAR and Group N without IAR. Demographic profile was comparable between the groups. Mean age of our study patients was 47.85 yrs. There were a total of 32 IARs out of the total of 195 patients, representing an IAR rate of 16.41%. The blood loss was significantly more as also the amounts of crystalloid, colloid and blood administered in Group R as compared to Group N. In the postoperative period requirement of prolonged ventilation was 50% in group R as compared to 27.61% in group N. The incidence of post-operative haematoma was 21.88% and 5.52%, post-operative infarct was 50% and 20.25%, and vasospasm was 25% and 22.09% and in group R and N respectively. The incidence of sepsis was 25% and 19.63%, pneumonia 21.88% and 15.34%, renal failure 6.25% and 4.29% and tracheostomy was done in 43.75% and 20.25% in group R and N respectively. Poor neurological outcome (GOS  $\leq$ 3) was observed in 64 (39.26%) of patients without IAR as opposed to 20 (62.50%) in patients with IAR. **Conclusion:** IAR has significant impact on neurological outcome, although there was no significant difference in mortality. Postoperative complications like prolonged duration of mechanical ventilation, and operative site haematoma, requirement of tracheostomy, decompressive craniectomy and hospital length of stay was more in patients who had IAR.

#### ISNACC-S-51

##### Water imbalance after neurosurgery: A case report

A. Raha, I. Gosh, B. Das

Department of Anaesthesia, Institute of Neurosciences, Kolkata, West Bengal, India

**Introduction:** We describe a 30-year-old woman, who developed triphasic response after resection of craniopharyngeoma. **Case Summary:** A 30-year-old female with no co-morbidity and no endocrine abnormality was operated for craniopharyngeoma while leaving the pituitary stalk intact (according to the surgical notes). Postoperative she was conscious, cooperative without any neurodeficit. Soon, she started passing urine amounting to 300 ml/hr on an average. Urine osmolality was 136 mosm/kg and serum sodium 140 meq/l. Being normoglycaemic and not on any diuretics a diagnosis of central diabetes insipidus was made. She received Desmopressin nasal spray and was advised to drink water ad libitum. Gradually, as the urine output came down over the next day desmopressin was discontinued. On the third day sodium

was 125 meq/ml and Serum osmolality was 257 mosm/kg. SIADH was diagnosed and fluids were restricted. Her sodium continued to fall and she experienced seizure. At this juncture she was administered hypertonic saline. Over the next 24 hours urine output again started increasing showing a osmolality of 70 mosm/kg and sodium rising to 145 meq/l. She was put back on desmopressin nasal spray which controlled the urine output to some extent. However, as she continued to remain polyuric at discharge she was advised desmopressin tablets 0.1 bd with regular monitoring of sodium and water intake ad libitum. **Conclusion:** The pathophysiology of the triphasic response is well known. Predisposing factors may be the disease or surgery intraoperative CSF leak. Successful prevention requires an index of suspicion and proactive measures.

#### ISNACC-S-52

##### Incidence of trauma induced coagulopathy in patients with isolated traumatic brain injury: A preliminary study

P. Rani, N. B. Panda, A. Hazarika

Department of Anaesthesia and Intensive Care, PGIMER, Chandigarh, India

**Introduction:** Trauma induced coagulopathy (TIC) is an entity. But incidence and outcome of TIC in isolated head injury is not very clear. Therefore, we planned a preliminary prospective observational study to findout incidence of coagulopathy in patients with isolated moderate and severe head injury. **Methods:** Twenty patients having moderate to severe head injury were included in this study. Severity of head injury is rated according to GCS and Marshall scoring system. Coagulation profile of patients is noted at the time of admission to Trauma ICU and at 24, 48 and 72 hours after injury. **Results:** Out of 20 cases of head injury, in 8 cases (40%) atleast 2 readings of INR were above 1.4 and PTI below 65%. Out of these 8 cases, 3 patients had GCS score 3, 4 patients had GCS score of 5 and 1 patient had GCS 9. Three out of these 8 patients had intraventricular hemorrhage while midline shift in CT was observed in all the 8 cases. **Conclusion:** Early identification and treatment of coagulopathy in brain injury patients may prevent secondary insult to brain decreasing morbidity and mortality. A prospective study with an adequate sample size population can identify the true incidence and outcome of patients with isolated head injury having TIC.

#### ISNACC-S-53

##### Cervical meningomyelocele repair in a 3 month old child with cleft palate: Anaesthetic risks and management