

The use of dexmedetomidine is in increasing trend particularly in patients with neurological disorders. A very few studies have focused on the cerebral haemodynamic effects of dexmedetomidine. This study is aimed to address this issue. **Methods:** Thirty patients without any intracranial pathology were included in this study. Middle cerebral artery flow velocity (FV) obtained from transcranial colour Doppler was used to assess the cerebral haemodynamic indices. Mean FV (mFV), pulsatility index (PI), cerebral vascular resistant index (CVRi), estimated cerebral perfusion pressure (eCPP) and zero flow pressure (ZFP) were calculated bilaterally at baseline and after infusion of injection dexmedetomidine 1 mcg/kg over 10 min. **Results:** Twenty-six patients completed the study protocol. After administration of loading dose (LD) of dexmedetomidine, mFV and eCPP values were significantly decreased in both hemisphere ($P < 0.05$); PI, CVRi and ZFP values showed significant increase ($P < 0.05$) after dexmedetomidine infusion. **Conclusion:** Increase in PI, CVRi and ZFP suggests that there is possibility of increase in distal CVR with LD of dexmedetomidine. Decrease in mFV and eCPP along with increase in CVR may lead to decrease in cerebral perfusion. This effect can be exaggerated in patients with pre-existing neurological illness. Further studies are needed to evaluate the effect of dexmedetomidine on various other pathological conditions involving brain such as traumatic brain injury and vascular malformations.

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Cerebral oxygenation during electroconvulsive therapy

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Background: Near-infrared spectroscopy is a novel monitor to detect cerebral oxygenation (rSO_2). A very few studies have analysed the effect of electroconvulsive therapy (ECT) on rSO_2 . We hypothesised that atropine pre-medication related activation of systemic and cerebral haemodynamics will exacerbate ECT-induced increase in rSO_2 . This study aimed to assess the effect of atropine and no atropine pre-medication during ECT on rSO_2 and correlate this with haemodynamics and peripheral oxygen saturation. **Methodology:** Psychiatric patients aged between 18 and 60 years requiring modified ECT for their illness were included in this 6-month study. This was a randomised crossover trial, in which patients served as their own controls. For the second ECT session, patients were randomised to receive either 0.01 mg/kg atropine or no atropine preceding anaesthesia.

Anaesthesia was induced by thiopentone 3 mg/kg and muscle relaxation was achieved with suxamethonium 0.5 mg/kg. For the third ECT, the patients were crossed over. Heart rate, blood pressure, SpO_2 and rSO_2 values were recorded at baseline and every 15 s from ECT stimulus till 5 min. **Results:** Data from 41 patients were analysed. There was no difference in baseline rSO_2 in patients with different psychiatric diagnoses. rSO_2 increased consistently in both groups after ECT which did not return to baseline at 5 min. Increase in rSO_2 was independent of increase in blood pressure. rSO_2 was lower in patients who developed desaturation during ECT. **Discussion/Conclusion:** On the contrary, no immediate desaturation after ECT stimulus was seen. rSO_2 increased consistently following ECT in both the groups. Systemic desaturation resulted in lower rSO_2 . Future studies should investigate whether rSO_2 changes associated with therapeutic seizures contributes to post-ECT cognitive changes.

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Evaluation of usefulness of a point of care haemoglobin device in emergency neurosurgery

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Introduction: Blood transfusion and anaemia in traumatic brain injury adversely affect the outcome and also increase length of stay and mortality. Laboratory haemoglobin (Hb) values are considered primary indicators and gold standard to guide blood transfusion, but lab results take time and repetitive measurements may not be feasible. Rapid and accurate measurements of Hb can guide warranted blood transfusions and avoid unnecessary transfusions in emergency neurosurgery. In this regard, point of care testing devices for Hb can be of great use. **Design:** Prospective study to assess the accuracy of Hb values obtained through HemoCue Hb, Sweden analyser compared to laboratory Hb reports in patients undergoing emergency neurosurgery and Intensive Care Unit (ICU). **Conduct:** The study was conducted in 50 patients undergoing emergency neurosurgery at National Institute of Mental Health

Table 1: The differences in haemoglobin values obtained through the device and lab analysis are not significant

Pair 1 haemoglobin device values-haemoglobin lab values			
Difference mean	t	df	P
-0.29	-0.266	48	0.79