Abstract

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Background: To compare the efficacy of equimolar, equiolemic solutions of 3% hypertonic saline and
20% mannitol on intraoperative brain relaxation in
patients with clinical and radiological evidence of raised
ICP undergoing surgery for supratentorial tumors.

Materials and Methods: This study was carried out on
30 ASA I-III patients with age group ranging between
18-65 years, undergoing supratentorial tumor surgery.
Patients received equimolar, equiolemic solutions of
3% hypertonic saline (osmolarity-1024) and 20% mannitol (osmolarity-1098). Both the agents were
administered at the dose of 5 ml/kg over a period of
15 minutes. Patients with previous history of electrolyte
imbalance and getting hypertonic saline (HTS) prior to the
surgery were excluded from the study. Brain relaxation
was assessed by anesthesiologist (on a 3 point scale) and
surgeon (on a 4 point scale). Results: Equimolar solutions
of both mannitol and 3% saline produced similar relaxation
as assessed by surgeon and anesthesiologist. Urine output
was more in mannitol group where as hypertonic saline
group had increased serum sodium concentration,
which returned to normal in 48 hours. CVP and mean
arterial pressure were maintained close to the baseline in
HTS group but CVP was higher in mannitol group but
returned to normal in 3-4 hours. Conclusions: Since both
these agents’ mannitol and HTS have nearly equimolar
concentration, they produce similar brain relaxation.
Gemma et al., I (1997) and Rozet et al., (2007) also had
similar observations. Equimolar concentration of HTS
and mannitol produce similar brain relaxation in patients
undergoing surgery for supratentorial tumors.

20. Effect of dexmedetomidine on
postoperative recovery in patients
undergoing cervical spine surgery

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Background: The present study is planned to evaluate the
effect of dexmedetomidine as an intraoperative
anaesthetic adjuvant and its effect on postoperative
extubation and recovery profile in patients undergoing
anterior cervical spine surgeries. Primary objective was
to assess postoperative recovery profile. Primary
objectives were to assess postoperative pain, time for
need of first analgesic and to observe the perioperative
hemodynamics. Materials and Methods: Thirty ASA
I-II Adult patients (age 18-60 yrs) were randomized
in this placebo controlled, double blind study. In the
Dexmed Group, Dexmedetomidine was started at
0.2 μg/kg/hr after a loading dose of 1 μg/kg before
induction. Perioperative hemodynamics, intraoperative
fentanyl and sevoflurane consumption, and postoperative
recovery profile were observed by blinded observer.
Postoperative pain and discharge readiness from post
anesthesia care unit was evaluated using VRS score and
modified Aldrete score, respectively. Results: Seventeen
patients in placebo and 18 in dexmedetomidine group
were enrolled. Time to emergence, extubation and to
achieve modified Aldrete score ≥9 was earlier in Dexmed
Group (mean 7.8 minutes; 9.8 minutes; 4.5 minutes)
compared to Placebo group (10.5 minutes; 13.2 minutes;
13.7 minutes) (P = 0.01). Pain score at extubation
was lower (2.8 vs. 26.2) and time for first analgesic
longer (46.6 minutes vs. 18.7 minutes) in Dexmed
Group compared to placebo. Hemodynamics was better
controlled with Dexmedetomidine. Conclusion: Use of
Dexmedetomidine in such low dose for abolishing cough
and pressor response has not been described previously
in cervical spine surgeries where smooth emergence
and extubation is desirable. Intraoperative use of
dexmedetomidine at lowest recommended dosage in
adults undergoing anterior cervical spine surgery results
in a favorable recovery profile with reduced emergence/
extubation time and postoperative pain, without adverse
perioperative hemodynamic effects.

21. To evaluate the effects of
dexmedetomidine on intraocular pressure
and hemodynamic changes in response to
laryngoscopy and tracheal intubation and
its influences on anesthetic requirements
during intracranial tumor surgery

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Background: Brain relaxation is one of the most important
prerequisites for neurosurgeries. The other points of
concern are the need of stable hemodynamics with less
fluctuation in ICP and speedy recovery from anesthesia.
Endotracheal intubation is one of the major stressful
stimuli inside an operation theatre that can elicit a
marked pressor response. Various drugs have been used
to attenuate these reflexes and reduce hemodynamic
changes. α2-Agonist are a novel class of drugs They have
neuroprotective, cardioprotective, and sedative effects.
These unique characteristics make them potentially useful
during neuroanesthesia. Recent studies have shown that
Dexmedetomidine is able to decrease circulating
plasma norepinephrine and epinephrine concentration