Effect of dexmedetomidine on blood glucose during surgery

Sir,
We read the article by Harsoor et al. with great interest.[1] However, we would like to point out few issues.

First, the authors have not mentioned any actual baseline value of blood glucose level for calculating sample size. They have assumed a 20% change in the blood glucose levels in the intervention arm (dexmedetomidine group) from the baseline. Similarly, authors have assumed equal standard deviation of blood glucose level in both the groups without mentioning an actual figure. It is not clear that how the sample size was calculated without these actual figures.[2]

Second, there is no comment on “allocation concealment.” Authors have rightly pointed toward a method of “random sequence generation” and “blinding” but there is no mention about the concealment of allocation. Allocation concealment is an important second element of any randomized controlled trial and takes care of “selection bias” and without which randomization collapses in a trial.[3]

Despite these limitations, we appreciate the authors for their work, which opens up new arenas of research on dexmedetomidine in blunting the stress response during surgery.

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Financial support and sponsorship
Nil.

Conflict of interest
There are no conflicts of interest.
Sir,

We read with interest the article by Goyal et al. in which the authors use dexmedetomidine and ketamine infusions for total intravenous anesthesia in patients with tetralogy of Fallot (TOF) for noncardiac surgery. We report the use of ketamine infusion only for management of persistent postoperative hypercyanotic spells in a 45-year-old male with surgically untreated TOF operated for open reduction and internal fixation of the humerus.

The patient had a history of dyspnea on exertion and cyanosis for the past 10 years. An ejection systolic murmur was heard in the pulmonary area. Results of biochemical investigations reported hemoglobin of 20 g/dL (hematocrit = 61%), platelet count of 95,000/mm³ but a normal leucocyte count, renal function test, serum electrolyte and coagulation profile. Cardiomegaly was seen on chest X-ray and right ventricular hypertrophy, tall R waves (V1-V3 leads), right axis deviation was seen in the electrocardiogram (ECG). Echocardiography reported a ventricular septal defect (VSD) of 22 mm, 40% of aortic override, severe right ventricular outflow tract obstruction (valvular and infundibular), severe tricuspid regurgitation, concentric left ventricular hypertrophy/right ventricular hypertrophy, 62% ejection fraction and right ventricular systolic pressure of 136 mmHg above right atrial pressures. Arterial blood gas analysis reported PaO₂ of 50 mmHg and PaCO₂ of 36 mmHg. Standard American Society of Anesthesiologists monitoring (noninvasive blood pressure, pulse oximetry and ECG) was attached, and right radial artery was cannulated for invasive blood pressure monitoring. Baseline oxygen saturation of hemoglobin (SpO₂) was 82%.

Nerve stimulator guided supraclavicular brachial plexus block was given, and local anesthetic was injected (15 ml of 0.5% bupivacaine + 15 ml of 2% lignocaine with adrenaline + 10 ml normal saline). However, complete sensory and motor block could not be accomplished, and patient had to be administered general anesthesia. Morphine (7.5 mg), ketamine (100 mg) and succinylcholine (100 mg) was used for induction and intubation. Anesthesia was maintained with O₂/air/halothane and vecuronium. Intraoperative period was uneventful and the patient was intubated. Patient had saturation of 88% at the time of shifting to the intensive care unit.

One hour after surgery, SpO₂ decreased to 40% with heart rate of 88/min and blood pressure of 100/60 mmHg. Morphine (5 mg), propanolol (0.1 mg/kg over a period of 10 min), sodium bicarbonate (80 mEq + 80 mEq + 80 mEq after every 10 min) and phenylephrine infusion were used to manage the tet spell. After 12 h the patient again had five episodes of acute fall in SpO₂, managed with the above-mentioned drugs plus ketamine; initial bolus of 0.5 mg/kg, followed by infusion of 0.1 mg/kg/h for 12 h. Patient did not have any spell after that.

Due to limited cardiac surgical centers and inadequate medical treatment, adult patients with untreated TOF are not uncommon in developing countries. Anesthetic considerations in adults with grown-up congenital heart disease are tailored on the basis of the anatomy and physiology of the cardiovascular system.

Prevalence of congestive heart failure and cardiomegaly are more common in adults with untreated TOF. Longevity in natural survivors with unoperated TOF

References

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