

**Intraoperative effect of dexmedetomidine infusion during living donor liver transplantation: A randomized control trial.**

Saudi J Anaesth. 2016 Jul-Sep;10(3):288-94.

Sayed E, Yassen KA.

**BACKGROUND:** Dexmedetomidine hydrochloride (Dex) is a useful adjuvant for general anesthesia. The aim was to evaluate the effects of Dex infusion during living donors liver transplantation (LDLT) on the general anesthetic requirements, hemodynamics, oxygen consumption (VO<sub>2</sub>), and CO<sub>2</sub> production (VCO<sub>2</sub>).

**MATERIALS AND METHODS:** Forty LDLT recipients were allocated randomly to receive either Dex (0.2-0.7 µg/kg/h) or placebo (control [C]). Patient state index (PSI), SEDLine monitored anesthesia depth (25-50) with desflurane (Des) % and fentanyl altered accordingly. Transesophageal Doppler (TED), invasive mean arterial blood pressure (MAP) and heart rate (HR) were monitoring any Dex side effects and altering infusion rate accordingly; TED was used for fluid optimization. Metabolic gas monitoring (VO<sub>2</sub>, VCO<sub>2</sub>) and Des consumption were recorded.

**RESULTS:** Dex reduced Des and fentanyl consumption versus C (120.0 ± 30.2 vs. 248.0 ± 38.8) ml, (440.0 ± 195.74 vs. 1300.0 ± 32) µg, respectively (P < 0.01). Dex was delivered for 11.35 ± 2.45 h with comparable HR, MAP, and TED variables versus C and with similar mean noradrenaline support (5.63 ± 2.44 vs. 5.83 ± 2.57 mg, P = 0.81). VO<sub>2</sub> was reduced with Dex vs. C during anhepatic, 30 min postreperfusion and end of surgery (193.2 ± 26.78 vs. 239 ± 14.93) (172.1 ± 28.14 vs. 202.7 ± 18.03) and (199.7 ± 26.63 vs. 283.8 ± 14.83) ml/min/m<sup>2</sup> respectively (P < 0.01). VCO<sub>2</sub> was also reduced with Dex versus C during the same periods (195.2 ± 46.41 vs. 216.7 ± 29.90, P = 0.09), (210.6 ± 60.71 vs. 253.9 ± 32.51, P = 0.01), and (158.7 ± 49.96 vs. 209.7 ± 16.78, P < 0.01), ml/min/m<sup>2</sup> respectively.

**CONCLUSION:** TED and PSI guided Dex infusion helped to reduce Des and fentanyl consumption as well as VO<sub>2</sub> and VCO<sub>2</sub> at a lower cost with no adverse effects on hemodynamics.