Introduction: Neuraxial anesthesia is the preferred technique for cesarean delivery. In about 55% of these patients, spinal or epidural anesthesia may be associated with shivering which may be very distressing and interfere with the monitoring of vital signs. Recent studies have shown that dexmedetomidine, an alpha 2-adrenergic agonist, could help to alleviate shivering associated with neuraxial anesthesia. The objective of this study was to test whether dexmedetomidine reduces the duration of shivering episodes associated with neuraxial anesthesia during cesarean delivery.

Methods: Local Ethics Committee approval and consent for study participation were obtained. Eighty healthy parturients, 18 years of age or more, undergoing cesarean delivery under neuraxial anesthesia were enlisted in this prospective, randomized, double-blind trial. After childbirth, when significant shivering occurred (Crowley and Mahajan scale), the intervention group (n = 40) received a single intravenous bolus of dexmedetomidine (30 mcg) while the control group (n = 40) received normal saline. Randomization and allocation were based on a computer generated list. The primary outcome measure was the time lapse for an observable decrease in shivering after the intervention.

Results: 155 patients undergoing a cesarean section under neuraxial anesthesia met the inclusion criteria and were recruited, of whom 80 presented significant shivering and were randomized. Our study showed that dexmedetomidine reduces the duration of shivering: mean time to decrease chills after the bolus of 2.6 minutes (CI 95% 1.94-3.26) with dexmedetomidine, and 17 minutes (CI 95% 13.9-21.9 min) with normal saline (p < 0.0001). The effect persisted at 15 minutes, where chills had completely stopped in 90% of the patients in the intervention group versus 23% in the control group. No adverse effects, including bradycardia (HR < 50 bpm), hypotension (> 30% of baseline MAP) and sedation (Filos et al scale), have been observed.

Discussion: This study demonstrates that an intravenous bolus of dexmedetomidine is an effective treatment to decrease the duration of shivering during cesarean delivery under neuraxial anesthesia.

References:

Time to decrease chills after bolus