Intrathecal dexmedetomidine versus magnesium sulfate for postoperative analgesia and stress response after cesarean delivery; randomized controlled double-blind study


Abstract:

Background Various adjuvants were added to intrathecal anesthetics to improve quality of the block and postoperative analgesia. We hypothesized that intrathecal dexmedetomidine and magnesium sulfate (MgSO4) may add similar effects. Our objectives were to compare their effects as adjuvants to intrathecal bupivacaine on postoperative analgesia, stress hormones, sedative properties and the neonatal outcome after cesarean section. Methods A randomized double-blind controlled study; ninety parturients were divided into three groups. All patients received intrathecal hyperbaric bupivacaine 12.5mg. NaCl 0.9% was added to intrathecal block in group C, 5μg dexmedetomidine in the group D and 50mg MgSO4 in group M. Visual analogue scale (VAS) score, stress hormones were assessed within the first 12 postoperative hours, sensory block, and neonatal outcome were also assessed. Results VAS scores were significantly lower in groups D & M. Onset of postoperative pain was significantly prolonged in group D. Time to peak sensory level was shorter in group D. Sedation score was significantly higher in group D only after 30 minutes of intrathecal block. Although stress hormones increased in all groups during intraoperative and postoperative periods, their levels were significantly lower in group D compared to other groups. No differences were noted regarding neonatal outcomes. Conclusion Intrathecal dexmedetomidine is superior to intrathecal MgSO4 during cesarean section with regard to duration of analgesia, pain severity, and stress hormone levels. Dexmedetomidine has a rapid onset and longer duration of sensory block compared to MgSO4. No significant adverse effects to the parturients or newborns.

Keywords:

Cesarean Section, Intrathecal Dexmedetomidine, Magnesium Sulfate, Postoperative Analgesia, Stress Hormones

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