Fentanyl Versus Ondansetron for Shivering Prevention in Cesarean Section: A Comparative Study

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Abstract

Background and purpose: Shivering is a common occurrence in the perioperative period, and it is often associated with hypothermia. While discomfort, disinhibited spinal reflexes, reduced sympathetic activity, and respiratory alkalosis have all been suggested as possible explanations for this phenomena, cold-induced thermoregulatory shivering is still the clearest etiology. The incidence of postoperative shivering (PS) following intrathecal anesthesia is a common complication 40% to 60%., with potential negative impacts on patient outcomes like increased risk of hypoxemia, oxygen use, and postoperative complications. For this reason, opioids are used in the prevention of thermoregulatory responses, which prevents shivering. This study aims to evaluate the effectiveness of intrathecal fentanyl versus intravenous ondansetron in preventing post-spinal anesthesia shivering in cesarean section patients.

Method: A randomized controlled trial was conducted from July 2021 to April 2023, involving pregnant women scheduled for cesarean section under intrathecal anesthesia. The participants were divided into three groups: group F received intrathecal fentanyl (15 µg) with spinal anesthesia, while group O received intravenous ondansetron (8 mg) added to the usual saline solution. The control group (group C) received only intravenous fluid before spinal anesthesia and intrathecal bupivacaine without fentanyl. The incidence of shivering was observed and recorded during the procedure.

Results: The incidence of shivering was significantly lower in the fentanyl and ondansetron groups compared to the control group (p=0.0123). Both intrathecal fentanyl and intravenous ondansetron administration showed effectiveness in reducing shivering during spinal anesthesia.

Conclusion: Under the study's conditions, the administration of intrathecal fentanyl and intravenous ondansetron significantly reduced the occurrence of shivering during spinal anesthesia in cesarean section patients.

Key words: Ondansetron, post spinal shivering, intrathecal fentanyl, caesarean section.

Image

Table: The Comparison of the Study Groups in Terms of Shivering Occurrence.

No. group N (250)	Group C no 66	Group F no 72	Group O no 72	P-value
YES	25(37%)	20 (27.7%)	14(19.5%)	0.0123*
NO	41(62.12)	52 (72.3%)	58(80.5%)	0.000*

Recent Publications

1. Hasan, S. H., Qadir, R. H., & Mohammed, H. N. (2023). Fentanyl Versus Ondansetron for Shivering Prevention in Cesarean Section: A Comparative Study. *Cureus*, *15*(10). https://doi.org/10.7759/cureus.46817
2. Salman Ismael, S.., & Hamid Hasan, S.. (2023). Can latent toxoplasmosis lead to Alzheimer's disease? *Journal of Contemporary Medical Sciences*, *9*(5). https://doi.org/10.22317/jcms.v9i5.1437



Biography

Dr. Shaimaa H. Hasan is a distinguished figure in anesthesiology, known for her significant contributions as an academician and accomplished anesthesiologist. With over a decade of experience as a Fellow of the Iraqi Committee in Anesthesiology and Intensive Care Medicine, she has demonstrated unwavering commitment and dedication. Serving as a lecturer in the Anesthesia Science Department at the University of Duhok in the Kurdistan region, Iraq, Dr. Hasan has played a crucial role in shaping the education of healthcare professionals for the past 5 years, showcasing both academic and clinical excellence throughout her career.

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Notes/Comments: