

THE USE OF PROPHYLACTIC ONDANSETRON TO ATTENUATE NEURAXIAL
INDUCED HYPOTENSION AND BRADYCARDIA

A Doctoral Scholarly Project

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Abstract

Purpose: Hypotension is a common side effect of spinal anesthesia caused by systemic vasodilation and decreased venous return. This hypotension can potentially lead to the activation of the Bezold-Jarisch reflex which can cause further hypotension and profound bradycardia. The Bezold-Jarisch reflex is activated partially by 5-HT₃ type cardioinhibitory fibers in the ventricles of the heart. Ondansetron, a 5-HT₃ antagonist, has been utilized to attenuate the Bezold-Jarisch reflex. The purpose of this review was to conduct an extensive literature search to determine if ondansetron does attenuate spinal induced hypotension and bradycardia.

Methodology: Six databases including CINAHL Complete, Cochrane Collection, PubMed, ProQuest, Ovid, and Medline were utilized for the literature search for this review. Eight randomized control trials (RCTs) examining 1211 participants were included. Each article was critiqued using the Joanna Briggs Institute appraisal checklist individually by both authors.

Results: The RCTs included in this systematic review assessed the effects of ondansetron on hypotension following the administration of spinal anesthesia in both obstetric and non-obstetric populations. Overall results of these studies found that the prophylactic administration of ondansetron significantly reduces the requirement of vasopressors and decreases the occurrence and/or severity of hypotension.

Implications for Practice and Research: The findings of this systematic review concluded that the prophylactic administration of ondansetron is safe and effective in reducing hypotension and vasopressor requirement following spinal anesthesia. Continued research could contribute knowledge in areas such as elderly patient populations, different intrathecal local anesthetics, and adjunct intrathecal medications. Larger sample sizes are recommended in future studies to aid in investigating more diverse populations.