

Comparative Efficacy of Ondansetron and Granisetron in Preventing Hypotension during Cesarean Section

Objective

This systematic review and meta-analysis aimed to *quantitatively synthesize the evidence on the effectiveness of ondansetron compared to granisetron in preventing intraoperative hypotension after spinal anesthesia during cesarean sections.*

Method

A comprehensive search was conducted across multiple databases for RCTs comparing IV ondansetron to IV granisetron for intraoperative hypotension prevention. MEDLINE, Embase, Scopus, and Cochrane Library were searched to identify eligible randomised controlled trials from their respective databases *from January 2015 to January 2025.*

Hypotension was determined by measurement of mean arterial pressure (MAP) fall >20% compared to baseline. Data were pooled using a random-effects model to calculate risk ratios with 95% confidence intervals (CIs).

Design

Following PRISMA guidelines, *nine randomized controlled trials (RCTs) involving 620 participants* were included. Studies were selected based on their evaluation of the incidence of hypotension after spinal anesthesia in cesarean section patients, with the intervention being intravenous (IV) administration of ondansetron and the control group being intravenous (IV) administration of granisetron before spinal anesthesia induction.

Conclusions

- *Ondansetron and granisetron were similarly effective* in preventing intraoperative hypotension during cesarean sections, with *no statistically significant differences* observed.
 - A *trend toward reduced bradycardia* with granisetron was noted, though not statistically significant.
 - The high heterogeneity in primary outcomes suggests that *patient variability, dosing strategies, and measurement timing* may influence effectiveness.
- Larger, standardized trials are needed to better guide the choice of prophylactic agents for hemodynamic stability during cesarean delivery.

Results

Figure 1. Incidence Hypotension

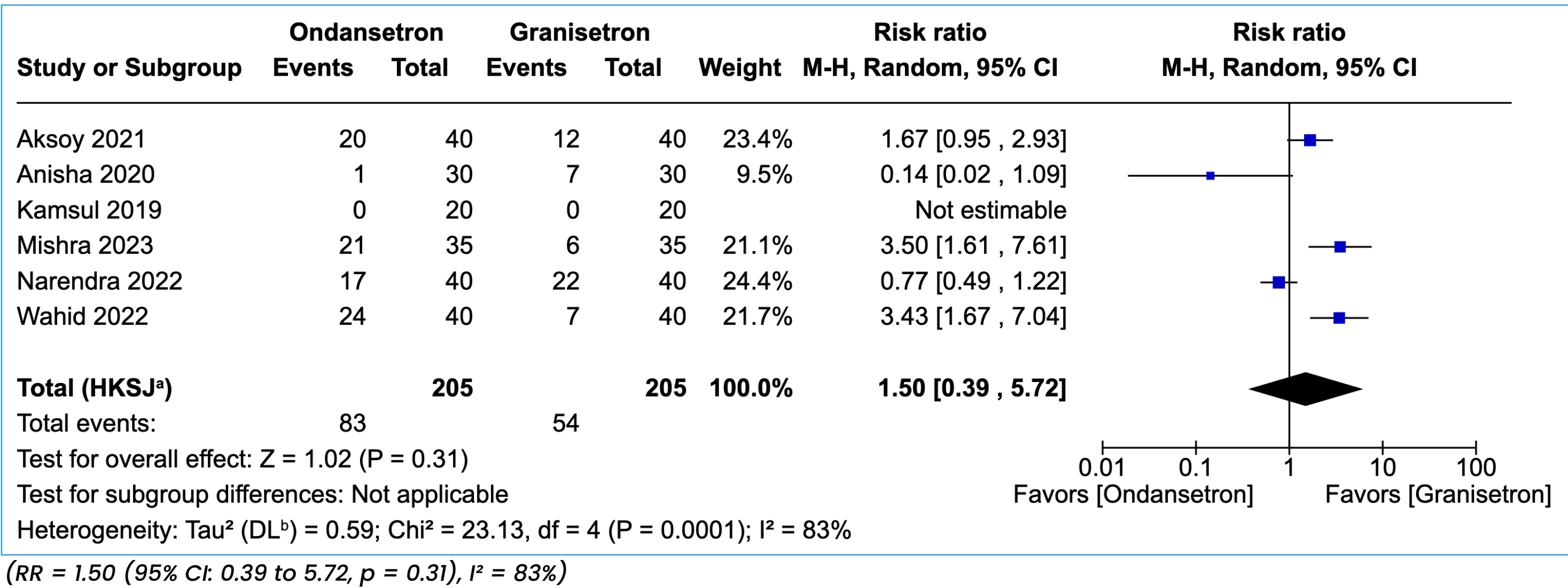


Figure 2. Incidence PONV

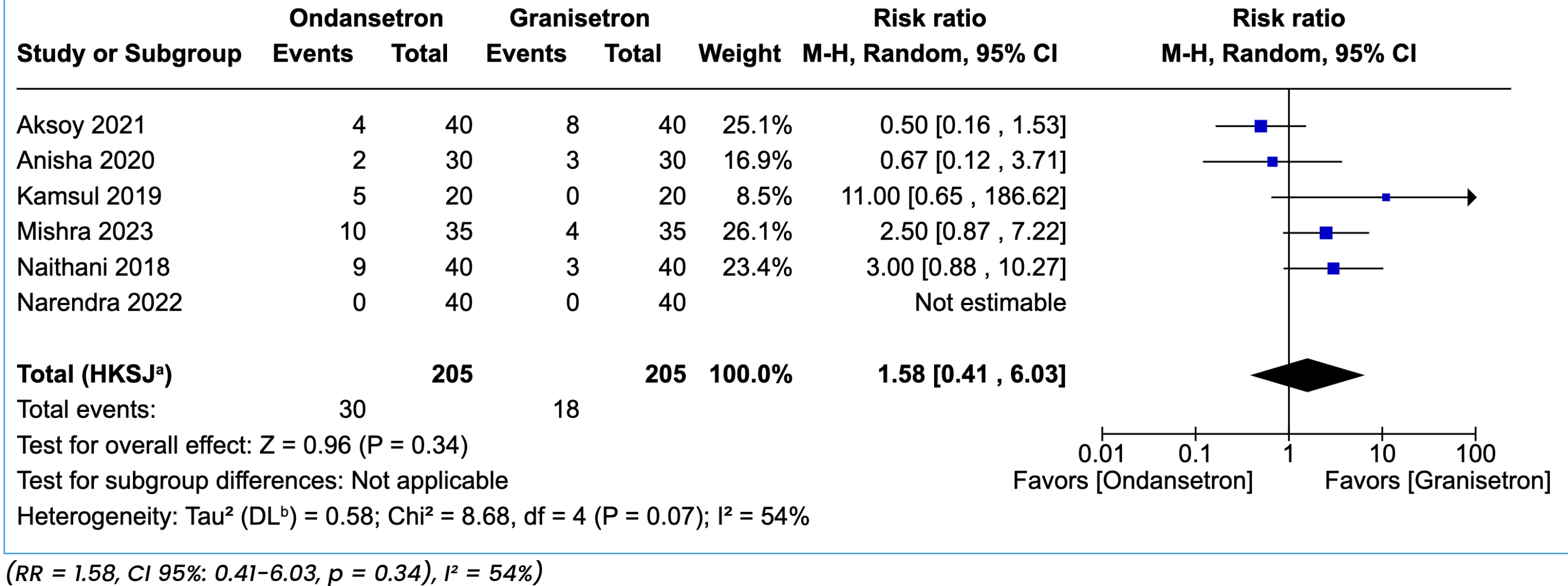
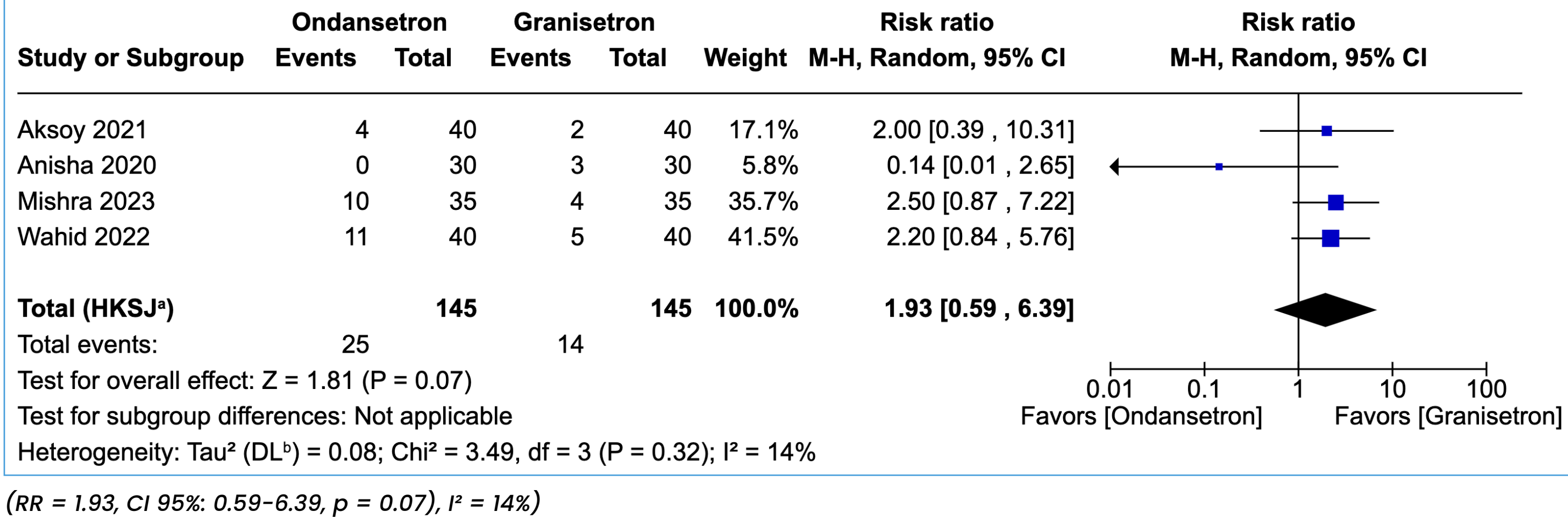


Figure 3. Incidence of Bradycardia



References:

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