

# A Commentary on “Effective Dose of Epidural Hydromorphone for Analgesia Following Caesarean Section in Using Modified Dixon Sequential Method” [Letter]

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## Dear editor

We are writing to raise several specific questions regarding the article published in your esteemed journal titled “Determination of the Effective Dose of Epidural Hydromorphone for Post-Cesarean Analgesia Using the Modified Dixon Sequential Method” by Liu QQ, Mao M et al.<sup>1</sup> This study provides valuable reference for dose selection in post-cesarean analgesia, but there are some methodological and result interpretation issues that require further discussion to enhance the rigor and clinical applicability of the research.

Firstly, the study employed the modified Dixon up-and-down sequential method to estimate ED50 and ED90. However, this method is primarily suitable for estimating the median effective dose (ED50) and may not be precise for estimating high effective doses like ED90. A small sample size may lead to unreliable estimates of ED90. Fils, J. F. et al pointed out that the up-and-down sequential method has limitations when estimating doses at the tail of the dose-response curve.<sup>2</sup>

Secondly, the study did not include a control group or compare with standard analgesic regimens (such as epidural morphine or intravenous analgesia). The lack of a control makes it difficult to evaluate the relative efficacy and safety of epidural hydromorphone. Sharpe, E. E. et al's study demonstrated that epidural hydromorphone has effects similar to morphine in post-cesarean analgesia but emphasized the importance of direct comparison.<sup>3</sup>

Thirdly, the study did not consider individual factors that may influence analgesic requirements, such as patients' body mass index (BMI), prior opioid use history, or genetic polymorphisms affecting opioid metabolism. Ho, K. W. D. et al's research indicates that these factors can significantly impact the efficacy and safety of opioids and should be considered in dose determination.<sup>4</sup>

Finally, the study's conclusions may overstate clinical applicability due to the aforementioned limitations. To verify the optimal dose of epidural hydromorphone for post-cesarean analgesia, it is recommended that future studies conduct larger sample size randomized controlled trials, include control groups, and comprehensively evaluate safety indicators.

Thank you for considering the above suggestions to improve the quality of this research and its contribution to clinical practice.

## Disclosure

The author(s) report no conflicts of interest in this communication.

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