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LETTER

Comparison Between Esketamine and Alfentanil for Hysteroscopy: A Prospective, Double-Blind, Randomized Controlled Trial [Letter]

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Dear editor

I recently reviewed the paper published by Weng et al[1] that compares the anesthetic effects of esketamine and alfentanil in patients undergoing hysteroscopy. The findings of the authors not only present the ED95 for both drugs during hysteroscopic procedures, but also demonstrate that esketamine exhibits less respiratory and hemodynamic suppression as well as fewer adverse reactions when compared to alfentanil. The contributions made by the authors in exploring the clinical applications of esketamine and alfentanil are greatly appreciated. However, there are two points that I would like to discuss with the authors.

First, the author derived the incidence rates of hypotension during general anesthesia using a combination of esketamine and fentanyl with propofol from previous studies, reporting rates of 6.2% and 21.5%, respectively. With the parameters set at $\alpha = 0.05$, $1 - \beta = 0.8$, an allocation ratio of 1:1, and a dropout rate of 10%, the sample size for each group was calculated to be 43 using PASS software. However, when using the same parameters, both PASS software and R indicated that the sample size for each group should be 77 (excluding dropout considerations). This discrepancy raises concerns regarding the accuracy of the sample size calculations performed by the author.

Secondly, in the comparison of the safety and efficacy of the two drugs, the authors defined the primary outcome as the success rate of anesthesia for both drugs (success being defined in the study as the absence of any physical movements related to cervical dilation during the procedure). However, the authors calculated the sample size based on the adverse reactions (incidence of hypotension) associated with both drugs, which is not aligned with the principles of sample size calculation. Moreover, it is recommended that the authors exercise caution when selecting the primary outcome. The initial anesthesia success rates for the two drugs in this study were 93% and 95.2%, respectively, a difference that is marginal. This minor difference is foreseeable, given that on one hand, hysteroscopy is a relatively less stimulating procedure, and on the other hand, the dosages administered were derived from previous studies identifying the ED95. When the differences in primary outcomes are minimal, achieving statistically significant results typically necessitates a substantial sample size. The authors should take this into account.

Disclosure

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Reference

1. Weng M, Wang D, Zhong J, Qian M, Zhang K, Jin Y. Comparison between esketamine and alfentanil for hysteroscopy: a prospective, double-blind, randomized controlled trial. *Drug Des Devel Ther*. 2024;18:3629–3641. doi:10.2147/DDDT.S472651

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