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LETTER TO THE EDITOR

Intranasal sufentanil combined with intranasal dexmedetomidine: A promising method for non-anesthesiologist sedation during endoscopic ultrasonography

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Abstract

Intranasal sufentanil combined with intranasal dexmedetomidine exhibited an estimated sedation success probability as high as 94.9%, higher satisfaction scores, and only minor adverse events during endoscopic ultrasonography (EUS). This is a promising method for EUS sedation that does not require the presence of an anesthesiologist.

Key Words: Intranasal; Sufentanil; Dexmedetomidine; Sedation; Endoscopic Ultrasonography

Core Tip: Endoscopic ultrasonography (EUS) requires moderate-to-deep sedation due to a prolonged procedure time and a larger and stiffer probe. Propofol-based sedation is the predominant method used in such cases for rapid onset and improved sedation with rapid full recovery. However, there are still restrictions regarding the administration of propofol in the absence of an anesthesiologist. The combination of intranasal sufentanil and intranasal dexmedetomidine exhibited an estimated sedation success probability, higher satisfaction scores, and minor adverse events, thus highlighting a promising method for EUS sedation in the absence of an anesthesiologist.

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TO THE EDITOR

We read with interest the paper published by Zou *et al*[1] exploring the ED95 of intranasal sufentanil (SUF) combined with intranasal dexmedetomidine (DEX) for moderate sedation during endoscopic ultrasonography (EUS). EUS has been widely used clinically due to its unique diagnostic value regarding lesions arising from the pancreas, upper gastrointestinal tract, as well as adjacent structures, such as the liver and lymph nodes[2-4]. However, EUS procedures take a long time and use a larger and stiffer probe compared to conventional endoscopes. Thus, it is important that we ensure that EUS tolerability is acceptable.

In patients undergoing complex endoscopic procedures, the current standard of practice is to administer sedative medication intravenously. Propofol-based sedation has become the first choice for endoscopic sedation over the last two decades because of its fast onset of action and short half-life[5,6]. Although there is compelling evidence to support the quality, cost effectiveness, and safety profile of the administration of propofol for EUS in the absence of an anesthesiologist[7,8], it is currently recommended that the administration and monitoring of propofol sedation for endoscopic procedures should be the responsibility of a dedicated and appropriately trained anesthetist only. A joint position statement endorsed by the British Society of Gastroenterology, the Joint Advisory Group, and the Royal College of Anesthetists highlights the role of anesthetist-led deep sedation practice with a focus on propofol sedation[9]. This is because propofol can produce serious and potentially fatal side effects such as hypotension, bradycardia, hypoventilation, hypoxemia, and even apnea. Therefore, propofol-independent sedation regimens have received increasing attention since such regimens could avoid the controversy related to non-anesthesiologist-administered propofol sedation[10,11].

Here, the paper proposed a promising and alternative regimen for non-anesthesiologist propofol administration during EUS, despite the authors' original intention not to do so. Intranasal administration offers a noninvasive, rapid, and efficient route for drug delivery with stable hemodynamics compared to the intravenous route due to a slower and more gradual onset. The authors made ingenious use of the pharmacokinetic characteristics of SUF and DEX. Intranasal 1 μg/kg DEX was administered 45 min before EUS and intranasal 0.3 μg/kg SUF was administered 20 min later, ensuring that the two drugs achieved peak effect during the procedure[12,13]. Sequential intranasal therapy exhibited an estimated sedation success probability that reached 94.9%, higher satisfaction scores, and minor adverse events. The emerging sedation regimen makes it possible to administer EUS sedation without an anesthesiologist and has high clinical significance. However, there are still several issues that need to be discussed with the authors before this technology is popularized. The modified observer's assessment of alert (MOAA/S) scale is generally classified as deep sedation (0 to 1), moderate sedation (2 to 3) and slight sedation (4 to 5)[14,15]. However, the authors defined a successful moderate sedation as a score ≤ 3 on the MOAA/S a scale; this would mean that deep sedation (MOAA/S: 0 to 1) into the category of moderate sedation. Although deep sedation does not mean oversedation, this might be more understandable if the authors could clarify the difference between moderate sedation and oversedation. In addition, the paper does not describe the MOAA/S scores of patients throughout their procedures. The authors acknowledged the presence of fluctuating levels of sedation although the use of rescue sedation was not reported. Insufficient or excessive sedation will inevitably lead to complications and may cause readers to worry about the safety of this technique.

Another issue worth noting is that the authors did not describe the time elapsed from the onset of sedation to discharge, and according to the pharmacokinetics of SUF and DEX, the maintenance time for both drugs is approximately 2 h[12,13]. Conversely, the average procedure time in this study was only 30 min, indicating that patients remained under sedation for 1 h after the completion of EUS. This might delay recovery when compared with the established protocol involving propofol sedation. We hope that the authors will provide relevant data to answer these concerns.

In our opinion, the most significant problem with this novel technology is the feasibility of clinical promotion. The sedation preparation prior to EUS took 45 min in this study. Transnasal medication also requires medical monitoring, thus increasing the occupation of medical resources and causing delays in the procedure, especially in outpatients. A separate induction room and complete service flow are prerequisites for the application of this new sedation regimen. Furthermore, as the article mentioned, the study was performed in patients with a normal body mass index (BMI). This would exclude the occurrence of serious respiratory depression in those with a high BMI.

To conclude, we believe that the authors provided a promising regimen for non-anesthesiologist sedation during EUS even if sedation levels fluctuated throughout the study period. Nevertheless, further studies are now needed to confirm the safety profile of this technique in different populations.

FOOTNOTES

Author contributions: Wang Y and Ge ZJ designed and performed the research; Han C wrote and revised the letter.

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