

A New Use for an Old Medicine: Dextromethorphan to Prevent Postoperative Sore Throat

To the Editor,

Postoperative sore throat (POST) is a well-recognised complication after general anaesthesia (Incidence: 21–65%).^[1] POST is caused by trauma after airway instrumentation, leading to aseptic inflammation with congestion, oedema of pharyngolaryngeal mucosa, and raised biochemical markers, especially interleukin-6.^[2] POST may cause significant postoperative morbidity and dissatisfaction with symptoms like pain, soreness, hoarseness, and dysphagia. Prophylactic management to decrease its frequency and severity will improve the quality of anaesthesia care.

Research implicates female sex, younger age, pre-existing lung disease, prolonged duration of anaesthesia, and presence of a blood-stained tracheal tube on extubation, as major risk factors. Intubation without neuromuscular blockade, use of double-lumen tubes, and high tracheal tube cuff pressures also increase the risk of POST.^[3]

Various interventions have been described to reduce its incidence. Non-pharmacological methods include use of smaller endotracheal tubes, careful instrumentation, and tracheal tube cuff pressure monitoring using a manometer. Pharmacological methods like lignocaine in gel, intravenous or spray forms, steroids, benzamine gargles, or spray have been shown to be effective. Liquorice gargles and lozenges, azulene sulfonate gargles, and aspirin gargles have also been used.^[3]

Research using NMDA antagonists, magnesium and ketamine, for their anti-nociceptive and anti-inflammatory effects shows promise. Ketamine, has been used both preoperatively and postoperatively, in the form of gargles, spray, and nebulization.^[1] Anti-nociception, due to topical application of ketamine, can be sustained for up to 24 hours depending on the dose and route of administration. It remains wholly possible, however, that in addition to reducing POST, ketamine may reduce the sensitivity of the pharynx to other stimuli, causing micro-aspiration or scalding on consumption of hot liquids. This aspect remains unassessed in the currently available literature.^[1,3]

Dextromethorphan, a weaker NMDA antagonist, has shown efficacy comparable to ketamine as an analgesic

adjuvant and anti-depressant.^[4] With an established safety profile below 2 mg/kg body weight, lower incidence of dysphoric side effects, lower dependence potential and availability as oral preparations like syrups and lozenges, dextromethorphan represents a potentially lucrative option for the prevention of POST.^[4,5]

With duration of action lasting 6 hours, ability to safely repeat doses in the postoperative period, multiple available preparations, even preoperative oral dextromethorphan in routine anti-tussive doses, might be the solution to prevent POST thus improving patient recovery and satisfaction scores.^[5] Interventional trials using dextromethorphan would be vital to validate this hypothesis.

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Conflicts of interest

There are no conflicts of interest.

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References

- Ahuja V, Mitra S, Sama R. Nebulized ketamine decreases incidence and severity of post-operative sore throat. *Indian J Anaesth* 2015;59:37-42.
- Vasileiou PV, Chalkias A, Brozou V, Papageorgiou-Brousta M, Kaparos G, Koutsovasilis A, *et al.* Interleukin-6 as a marker of inflammation secondary to endotracheal intubation in pediatric patients. *Inflammation* 2013;36:1533-8.
- El-Boghdady K, Bailey CR, Wiles MD. Postoperative sore throat: A systematic review. *Anaesthesia* 2016;71:706-17.
- King MR, Ladha KS, Gelineau AM, Anderson TA. Perioperative dextromethorphan as an adjunct for postoperative pain: A meta-analysis of randomized controlled trials. *Anesthesiology* 2016;124:696-705.

5. National Center for Biotechnology Information. PubChem Database. Dextromethorphan, CID=5360696. Available from: <https://pubchem.ncbi.nlm.nih.gov/compound/Dextromethorphan>. [Last accessed on 2020 Jan 06].

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