Midazolam Can Decrease Salivation During Bronchoscopy

To the Editor:

We read with interest the response letter by Cowl1 (March 2010) to the study by Malik et al2 (August 2009) concerning the use of antisialogogues in bronchoscopy. Based on the results of two previous studies, Cowl points out that antisecretory drugs do not result in clinically significant differences in cough or secretion control and can even be considered harmful.

We have a major concern about the designs of the studies by Malik et al2 and Cowl et al.1 In a recent randomized, double-blind, placebo-controlled, prospective, quantitative study,4 we demonstrated that midazolam decreases both unstimulated and stimulated saliva flow rates (from 0.31 g/min to 0.18 g/min and from 0.78 g/min to 0.31 g/min, respectively, P = .00). The study included 40 children aged 9 to 12. Unstimulated and paraffin-stimulated saliva was collected from each child at baseline and 10 min after midazolam injection. This antisialogogue effect of midazolam can be responsible for the barely statistically significant difference in visual analog scale scores between placebo and the anticholinergic drugs observed in the studies by Malik et al2 and Cowl et al.1 We are of the opinion that future studies should exclude midazolam from the design when the antisialogogue effects of anticholinergic drugs are assessed.

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REFERENCES


Dr Apiligullari and colleagues express concerns about the design of two studies in CHEST (July 2000 and August 2009) that compared the use of antisialogogues as pretreatment strategies for adult bronchoscopy,1,2 citing that midazolam used concurrently for sedation can confound results because midazolam itself can also result in a reduction in secretions (as shown in their own recent study of a small cohort of pediatric patients [N = 40] who underwent measured simulated salivary flow rates).3 Unfortunately, they seem to have missed the entire point of the prior discussion.4

The clinical question hinges on whether the use of antisialogogic agents such as atropine or glycopyrrolate is necessary prior to adult bronchoscopy to increase patient tolerance of the procedure or improve visualization of the airway anatomy. The use of these drugs adds cost to each procedure and, in some cases, can actually result in unnecessary, untoward side effects. It has been known for years that midazolam can, by itself or in combination with other sedative-analgesic agents, have some minor antisialogogic properties.3 The study by Apiligullari et al further bolsters the argument that if there is indeed an antisialogogue effect from the use of midazolam, then the use of other secretion-reducing agents is clearly not needed. A clinically significant result in the initial randomized trials would have meant that the use of antisialogogic drugs provides a clear benefit to the bronchoscopist and patient in terms of the ability to inspect the airway and improves the overall comfort of the procedure above and beyond that provided without their use. That was not determined in those studies, even after randomization of > 1,000 patients between the two trials. Although Apiligullari and colleagues3 should be congratulated for their efforts in quantitating salivary flow rates, that result does not alter the fact that the use of antisialogogues is unnecessary prior to routine adult bronchoscopy and does not ultimately affect the measured clinical endpoints, as outlined in the original randomized trials.

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Response

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