Atropine Might Be Better Than Glycopyrrolate as an Adjunct to Ketamine in Children

*But is either anticholinergic agent needed?*

Some practitioners routinely administer an anticholinergic agent when giving ketamine to children because of theoretical concern that ketamine increases the volume of oral secretions. These authors performed a secondary review of 8282 instances of ketamine sedation pooled from 32 prior case series to determine the incidence of six adverse events (airway and respiratory adverse events, laryngospasm, apnea, emesis, recovery agitation, and clinically important recovery agitation) in children who received adjunctive atropine (47%), glycopyrrolate (22%), or no anticholinergic agent (31%).

Atropine was associated with significantly less vomiting than glycopyrrolate or no anticholinergic agent (5.3% vs. 10.7% and 11.4%). Glycopyrrolate was associated with significantly more clinically important recovery agitation than atropine or no anticholinergic agent (2.1% vs. 1.2% and 1.3%) and significantly more airway and respiratory adverse events (6.4% vs. 3.3% and 3.0%, respectively).

**Comment:** This study's findings are similar to those of a multivariate analysis of the same data and seem to suggest that atropine is associated with less vomiting, less clinically important recovery agitation, and fewer respiratory adverse events than glycopyrrolate. Also, neither anticholinergic agent reduces the incidence of airway adverse events compared to no anticholinergic agent — an important finding because airway secretions and events (e.g., laryngospasm) are often the reason these "drying" agents are given. The authors appropriately note that the findings require verification in a prospective, randomized trial. Until then, the addition of an anticholinergic agent when using ketamine should be considered optional.

— Diane M. Birnbaumer, MD, FACEP

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