Ketamine-Associated Pediatric Laryngospasm

Clinical variables fail to predict pediatric ketamine-associated laryngospasm.

In a 2009 meta-analysis of 8282 children undergoing ketamine sedation in the emergency department, investigators identified risk factors for airway and respiratory adverse events, including 22 occurrences (0.3%) of laryngospasm, defined as "stridor or other evidence of airway obstruction that did not improve with airway alignment maneuvers" (Ann Emerg Med 2009; 54:158). Now, the investigators performed a case-control analysis on the same dataset to assess predictors of ketamine-associated laryngospasm.

Each of the 22 case patients (median age, 3.7 years) was matched to 4 controls by American Society of Anesthesiologists (ASA) physical status ≥3 vs. <3, oropharyngeal procedure, ketamine dose, route of ketamine administration (intravenous vs. intramuscular), coadministration of anticholinergic agents, and coadministration of benzodiazepines (individual variables were excluded from matching when the variable was tested as a predictor). In univariate and multivariate analysis, the investigators evaluated the association between laryngospasm and each of seven variables: age, dose, oropharyngeal procedure, underlying physical illness, route of ketamine administration, coadministration of anticholinergics, and coadministration of benzodiazepines.

Benzodiazepine coadministration was the only variable that was significantly associated with laryngospasm and only in the multivariate analysis (odds ratio, 13.7). The number needed to treat with ketamine plus benzodiazepines to result in 1 occurrence of laryngospasm was 26. The authors question the validity of an association between benzodiazepine coadministration and laryngospasm, given the lack of statistical significance in the univariate analysis or in their previous regression analyses.

Comment: This study shows that ketamine-associated laryngospasm is rare and unpredictable. Although data on the association between benzodiazepine coadministration and laryngospasm are mixed, given the potential risk and the absence of evidence of benefit, routine coadministration should be avoided.

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- Medline abstract (Free)

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