Predictors of Swallowing Dysfunction During Deep Sedation with Propofol

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Increasing body-mass index, age, and propofol dose were predictors of swallowing impairment and aspiration in this single-center observational study.

Deep sedation is becoming increasingly popular in a variety of clinical settings to facilitate medical and surgical procedures. Sedatives have the potential to affect swallowing function and protective airway reflexes. During deep sedation, patients are not intubated yet have lower levels of awareness than with moderate procedural sedation and may require some assistance with ventilation. Little is known about the degree of swallowing dysfunction during propofol deep sedation or risk factors for aspiration when this occurs.

To assess this, investigators enrolled 80 adult patients undergoing elective upper endoscopy with propofol deep sedation at a single center in Italy. Three target-controlled infusion doses of propofol were administered sequentially (2, 3, and 4 μg/ml). Swallowing function and evidence of aspiration after small boluses of liquid were introduced into the hypopharynx were documented by real-time glottic video endoscopy, and findings were graded using the Dysphagia Severity Score and the Penetration and Aspiration Scale.

At a propofol dose of 3 μg/ml, 100% of patients achieved deep levels of sedation. At that dose, 24% or 23% of patients (depending on scoring system) had severe swallowing dysfunction. In multivariate analysis, predictors of swallowing dysfunction were increasing propofol dose (odds ratio, 15.8), age (OR, 1.53 per 5-year increase), and body-mass index (OR, 1.24).

Comment: Propofol deep sedation is common in the emergency department, and we should assume these patients are at risk for aspiration, especially if they are elderly or obese. Use of lower range propofol dosing should be considered for these patients and brisk suction should be available for all.

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