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31 August 2016

Article

Double-blind Randomized Controlled Trial of Intranasal Dexmedetomidine Versus Intranasal Midazolam as Anxiolysis Prior to Pediatric Laceration Repair in the Emergency Department

Academic Emergency Medicine, August 2016; 23 (8): 910—917

DOI: 10.1111/acem.12998

Clinical Question

Does intranasal (IN) dexmedetomidine (Precedex) or IN midazolam (Versed) provide better anxiolysis for a pediatric patient requiring a laceration repair?

Study Type

Double-blind randomized controlled trial performed in a single academic US pediatric ED using 40 patients

Methods

Patients selected for this trial were ages 1 to 5 with a laceration <5cm that required suturing. Patients were randomized to receive either 0.4mg/kg of Versed or 2mcg/kg of Precedex. When possible, LET gel was applied to the wounds early in the encounter. There was a 30-minute period between drug administration and beginning of the procedure. All providers and staff interacting with the patient, as well as patient families, were blinded to which drug was administered. The modified Yale Preoperative Anxiety Scale was used to measure level of anxiety; the scale ranges from 23.1-100. The patient encounters were recorded and two separate researchers calculated the score. For simplicity, patients with a score <30 were “not anxious” and those over were “anxious”. Secondary outcomes for parental anxiety and proceduralist satisfaction were also analyzed.

Results

Of the 40 initial subjects, 20/20 of the Versed group and 18/20 of the Precedex group were available for analysis. The level of anxiety was measured at 4 different points during the procedure, and the only point that had statistical significance was during the positioning at the start of the procedure at a difference of 9.5 points favoring the Precedex. The Versed group had 1 patient with excessive emesis and 1 with gait instability after the procedure; there were no reported complications with Precedex. Otherwise, from the viewpoint of the proceduralist and the parents, there were no reported differences between the groups.

Study Limitations/Issues

Obviously, a study of 40 patients total is going to be underpowered for a variety of comparisons. While the anxiety scales used have been studied themselves, there is always a potential for some subjectivity in the data as it is based upon what an observer thinks another person is experiencing.

Discussion

Anything we can try to alleviate the pain or anxiety associated with procedures is something to be sought after and studied. Unfortunately, I do not think that this study has enough compelling data for me to definitively state which drug I would prefer to use. Although not significant, the fact that there were increased issues with the Versed makes Precedex a more appealing choice. However, the cost of Versed is about 4-5 times less than Precedex, potentially limiting its availability in the ED. Further studies are needed to show if there is truly a superior medication. There are still other medications available in our armamentarium, such as ketamine, that will need to be studied as well.