Effect of intranasal dexmedetomidine on emergence agitation after sevoflurane anesthesia in children undergoing tonsillectomy and/ or adenoidectomy

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Abstract:

Purpose: This study investigated the safety and effectiveness of intranasal dexmedetomidine in reducing the incidence and severity of emergence agitation (EA).

Methods: This prospective randomized double-blinded controlled trial included 86 patients scheduled for the tonsillectomy and/ or adenoidectomy under general anaesthesia with sevoflurane. They were randomly allocated into two groups. Group D (Study group) received intranasal dexmedetomidine at 1μg/ kg and group C (Control group) received intranasal saline 0.9% after induction of general anesthesia. Four-point agitation scale and Face, Legs, Activity, Cry and Consolability (FLACC) scale score for pain assessment were measured at six-time points (after extubation, leaving the operating room, on arrival to PACU, 10, 20, and 30 min after arrival in PACU). Extubation, emergence, and discharge times were recorded in addition to any adverse effects.

Results: Dexmedetomidine decreases the incidence of EA from 58% to less than 7% with ($P = 0.001$). The median four point's agitation scales and the median scores of FLACC pain scales of group D were significantly lower than those of group C at the all six-time points with a P value ≤ 0.05. Extubation, emergence, and discharge times were comparable in both groups and none of the subjects reported any adverse effects.

Conclusion: This study demonstrates that a 1μg/ kg dose of intranasal dexmedetomidine administered after induction of anesthesia reduces post-sevoflurane incidence and severity of EA in children undergone tonsillectomy and /or adenoidectomy with no adverse effects and smooth recovery profile.

Keywords: Emergence agitation, sevoflurane, dexmedetomidine, tonsillectomy, adenoidectomy.