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INTERVENTION for PREVENTION

Easing Children's Preoperative Anxiety

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Akademisk avhandling

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Abstract

Background: Preoperative anxiety in children is associated with several adverse outcomes and consequences that can have a negative impact on the perioperative outcome and delay recovery. Anxiety can cause stress-induced cardiorespiratory instability, increased postoperative pain, nausea, emergence delirium, and long-term behavior changes. The ideal premedication for children is still debated. Only a few studies have examined the premedications in relation to total intravenous anesthesia (TIVA), and there is also a lack of studies exploring staff's experiences of premedication. The aim of this thesis was to compare midazolam (a benzodiazepine), clonidine, and dexmedetomidine (α_2 -agonists) given as premedication to preschool children, regarding anxiety, cardiorespiratory response to sedation, time to postoperative recovery, posthospital negative behavior changes (NBCs), and staff's experiences of the interventions.

Methods: In a randomized clinical trial, 90 children aged 2–6 years, scheduled for TIVA and ear, nose, and throat surgery, were randomized to one of three groups, receiving midazolam 0.5 mg/kg, clonidine 4 μ g/kg, or dexmedetomidine 2 μ g/kg. The children were included at a 200-bed county hospital in northern Sweden and observed with validated tools from the day of surgery until two weeks postoperatively (Studies I–IV). To explore the clinical aspects, we conducted focus group interviews to elicit perioperative staff's experiences of the studied interventions, and analyzed the data with qualitative content analysis (Study V).

Results: Midazolam reduced preoperative anxiety and provided perioperative cardiorespiratory stability. Clonidine and dexmedetomidine provided deeper sedation along with a minor decrease in heart rate. Some children, mainly from the clonidine group, awoke during the preoperative preparation, triggering anxiety, while the midazolam group remained conscious, calm, and cooperative. Postoperatively, the midazolam group emerged earlier from anesthesia compared to the two α_2 -agonist groups. However, the midazolam group had more episodes of postoperative anxiety, delirium, and pain compared to both groups receiving α_2 -agonists, and the overall recovery and discharge time from the post-anesthesia care unit was thus the same for all groups. The posthospital study showed at least one NBC in half of the children during the first two weeks after surgery. The staff's experiences of premedication could be summarized in three themes: a matter of time, covering the efforts of building trust along with timing the administration and onset; don't wake the sleeping bear, covering the challenge of maintaining sleep in the sleeping child in order to avoid a backlash if woken; and on responsive tiptoes, covering safety precautions and ethical perspectives on the interventions.

Conclusions: The different premedications varied in their ability to reduce anxiety and to induce sleep, and this manifested itself throughout the perioperative process. Short-acting midazolam reduced preoperative anxiety but did not provide adequate sleep, and early postoperative emergence occasionally caused a rise in adverse symptom intensification. The long-lasting and sleep-inducing α_2 -agonists showed an unsatisfactory anxiolytic effect in comparison to midazolam. The sleep was superficial, and an awakening risked triggering anxiety. The staff strove to keep the sedated child asleep, and the recovery time was better and more peaceful when the children slept for a long time postoperatively. However, despite a calm perioperative process, one in two children presented with posthospital NBC. At the doses used in this study, all these premedications seem to be safe in cardiorespiratory terms, and the decision of which one to use should be tailored by individual and time.

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