



Practices of anesthesiologists to alleviate anxiety in children and adolescents in Canada

Kristi D. Wright, PhD · G. Allen Finley, MD ·
Daniel J. Lee, B.A.Hons · Mateen Raazi, MD ·
Donald Sharpe, PhD

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To the Editor,

Preoperative anxiety is common in children awaiting surgery.¹ Both pharmacological (e.g., sedatives) and non-pharmacological (e.g., parental presence during induction of anesthesia [PPIA]) interventions are used to alleviate such anxiety.^{2,3} According to a survey performed in the United States from 1995 to 2002, midazolam was the most frequently employed pharmacologic agent in children and adolescents, and PPIA was frequently used for school-age children.⁴ These findings may not apply to the current Canadian situation because of differences in the healthcare systems and evolution of practices since these data were collected. Consequently, we performed a survey to address the issue of methods used to alleviate anxiety in children waiting for surgery.

One hundred fifty-five anesthesiologists providing care for children and adolescents in Canada completed a survey conducted from January 2009 to February 2010 designed to assess: (1) the type of premedicant, route of administration,

and frequency of use; (2) general opinions and practices regarding premedication, parental presence, and other non-pharmacological interventions used to alleviate preoperative anxiety; and (3) demographics of the participants. Consent was obtained, and the survey was completed online via SurveyMonkey®. The study was approved by the University of Regina Research Ethics Board on December 23rd, 2008. Demographic data were summarized as mean and standard deviations for continuous data and frequencies for categorical data. We compared means between subgroups using independent sample Student's *t* tests. Categorical items were analyzed by frequency distribution and Chi square analyses.

A small percentage (10%; $n = 16$) of the anesthesiologists indicated that they did not premedicate *anyone* across the age ranges of interest. The Table shows premedication use across age groups. Most of those who endorsed premedication indicated that they used it occasionally (1-25% of the time). The most common type of premedication was midazolam, and the most frequent route of administration was oral. The two most valued qualities of premedication were reduction of anxiety and cooperation. The decision whether or not to premedicate was not related to the sex of the anesthesiologist, subspecialty anesthesia training, or the primary type of hospital practice. Nevertheless, anesthesiologists who premedicated children were younger ($P = 0.026$) and had practiced fewer years ($P = 0.009$).

Only 14.2% ($n = 22$) of anesthesiologists reported *never* using PPIA across all age ranges, and the majority of the respondents who endorsed PPIA indicated that they used it occasionally (1-25% of the time). Parental presence was used most frequently in younger age groups (\leq seven years) (Table). Procedural talk (talking to the child about the procedure) was used more commonly in older age groups. There were no differences with respect to age,

K. D. Wright, PhD (✉) · D. J. Lee, B.A.Hons · D. Sharpe, PhD
Department of Psychology, University of Regina, Regina, SK,
Canada
e-mail: kristi.wright@uregina.ca

G. A. Finley, MD
Department of Anesthesia, IWK Health Centre, Dalhousie
University, Halifax, NS, Canada

G. A. Finley, MD
Department of Psychology, Dalhousie University, Halifax, NS,
Canada

M. Raazi, MD
Department of Anesthesiology, Perioperative Medicine and Pain
Management, University of Saskatchewan, Saskatoon, SK,
Canada

Table Distribution of anesthesiologists' use of preoperative interventions based on patient age groups

Age groups	No Premedication (%)	Premedication (%)
Premedication		
6 mo - 3 yr	26.7	73.3
4 yr - 7 yr	19.1	80.9
8 yr - 12 yr	23.0	76.0
13 yr - 18 yr	23.5	75.5
Age groups	No Parental Presence (%)	Parental Presence (%)
Parental Presence		
6 mo - 3 yr	17.4	82.6
4 yr - 7 yr	16.1	83.9
8 yr - 12 yr	27.7	72.3
13 yr - 18 yr	39.4	60.6

years of practice, sex, and subspecialty anesthesia training between anesthesiologists who reported that they *never* use PPIA and those who reported that they *did* use PPIA. Nevertheless, differences were found based on the primary type of hospital practice: 100% of anesthesiologists working in children's hospitals used PPIA; 92% in university hospitals; and 79% in community hospitals. ($P = 0.018$). Most respondents indicated that the hospitals where they worked allowed or encouraged PPIA (71.9%).

The majority of Canadian anesthesiologists use both pharmacological and non-pharmacological interventions at least occasionally for pediatric patients. A larger-scale study is warranted for a more thorough portrayal and exploration of the practices of anesthesiologists to alleviate preoperative anxiety in children and adolescents in Canada. More up-to-date data from the United States is required for a comparison between Canadian and American practices.

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