

Propofol Anesthesia in an Outpatient Pediatric Oncology Population, A Retrospective Review of 360 Cases

Christopher Dixon DO MS, Ann Bailey MD

Department of Anesthesiology, University of North Carolina-Chapel Hill, Chapel Hill NC 27599

Introduction: Children with cancer frequently require general anesthesia for outpatient procedures such as lumbar puncture and bone marrow aspirate or biopsy. There have been several studies that have described providing anesthesia for oncologic procedures using a polypharmacy approach¹. These often require longer recovery times and may increase respiratory adverse events. Our experience at UNC in our Pediatric Procedural Clinic suggests that using propofol based anesthesia for painful outpatient oncology procedures can be safely and efficaciously done. We wanted to evaluate our outcomes of both safety and recovery with this type of anesthesia. Additionally, we wanted to document the necessary dose of propofol to provide adequate anesthesia in this setting.

Methodology: After Investigational Board Review and HIPAA authorization, we conducted a retrospective chart review of children who have undergone anesthesia for outpatient oncology procedures at the UNC - Pediatric Sedation Clinic. We reviewed charts from October 2002 - October 2003. Data gathered includes medical record number, age, diagnosis, procedure, times related to the procedure, drugs used and dosages, adverse events, and any other health related data necessary to define the patient population.

Results: We were able to find charts for 69 patients having 219 procedures in this period of time. All received general anesthesia with propofol. Of the 219 procedures, 22 received other drugs (fentanyl and/or midazolam) as adjuncts. These patients tended to be older ($P < 0.03$) and had longer procedure times (see table). One child required approximately two minutes of assisted ventilation related to the high dose (9.5 mg/kg) of propofol given over eight minutes. No hypoxia was evident in any of the cases, and all were taken to recovery on room air.

	N =197	N = 22	p-value
Age (years)	7.9 (4.9)	10.2 (5.5)	0.03
Induction time (mins)	1.4 (1.3)	1.3 (1.5)	0.79
Procedure length (mins)	7.3 (4.9)	10.0 (5.8)	0.06
Recovery time (mins)	4.1 (3.0)	4.5 (2.6)	0.35
Induction dose (mg/kg)	2.4 (1.1)	2.3 (1.1)	0.49
Boluses total dose (mg/kg)	2.3 (1.8)	2.0 (1.8)	0.34
Total dose (mg/kg)	4.7 (2.1)	4.2 (2.2)	0.24

Summary: The results of this retrospective study suggest that propofol anesthesia can provide a safe and very efficient anesthetic in oncology children undergoing painful procedures. Our method allows a rapid induction and much shorter recovery times than previously described^{1,2}. The incidence of adverse events was rare (1/219). The safety and efficiency of our pediatric sedation clinic requires a multidisciplinary approach with pediatric anesthesiologists, oncologists, and nursing staff.

References:

- 1) Jayabose et al: J Pediatr Hematol Oncol 2001 Vol 23, No. 5
- 2) Klein et al: Pediatr Crit Care Med 2003 Vol 4, No. 1