

[NM-267] Effect of Propofol on the Systolic Blood Pressure of Infants During Direct Laryngobronchoscopies: A Retrospective Chart Review.

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Background: Direct laryngobronchoscopies (DLBs) often require general anesthesia with maintenance of spontaneous ventilation to assess movement of the vocal cords. Propofol infusions are therefore a common way to anesthetize pediatric patients during this procedure. The purpose of this study was to determine the effect of propofol on the systolic blood pressure of infants during DLBs.

Methods: After obtaining IRB approval, a retrospective chart review of all infants age 1 month to 12 months who underwent DLBs in 2011 at Children's Hospital of Michigan was done. Patients were excluded from the study for the following reasons: pre-operative blood pressure unable to be obtained, propofol doses not documented, the DLB was associated with another procedure (i.e. tracheostomy), and any patient on a vasoactive infusion . Participants who had the same surgery more than once only had their data included once for the study,. We examined the recorded SBPs pre-operatively, at the start of the case, intra-operatively, and upon arrival to the PACU/ICU. The cumulative dose of propofol for the case in mg/kg was also examined to see if there was correlation with the amount of the drug and the percentage of a drop seen in the SBP.

Results: There were 112 infants who met inclusion criteria, 8 of whom did not receive propofol. All but 1 infant received sevoflurane in addition to the propofol. Of the 104 infants who received propofol, hypotension was very common, with 62% having a significant drop in SBP of at least 20% below their pre-operative SBP.

% Drop in SBP	>50%	40-50%	30-40%	20-30%	<20%
% of total patients	2%	3%	17%	40%	38%

There was no significant correlation between the percentage drop in SBP and the dose of propofol given.

Discussion: There are few studies investigating the hemodynamic effects of propofol in an infant population. The majority of the infants in our study had a significant drop in SBP with propofol-sevoflurane administration during DLBs, with a subset having profound hypotension. One study demonstrated the hemodynamic effects of propofol in children with congenital heart disease (Williams et al), but this was not specific to infants. Their study showed that the principal hemodynamic effect of propofol in children with congenital heart disease was a significant decrease in systemic mean arterial pressure and systemic vascular resistance. More studies are needed to determine the hemodynamic effects of propofol in the infant population In addition, propofol should be studied in comparison to other drugs that could be used as adjuvants or as replacements (e.g. ketamine) to potentially minimize the significant decrease in SBP that is seen with propofol-sevoflurane.

References:

Williams GD, Jones TK, Hanson KA, Morray JP. The hemodynamic effects of propofol in children with congenital heart disease. *Anesth Analg.* 1999 Dec;89(6):1411-6. PMID: 10589618[PubMed - indexed for MEDLINE]
