Children at Increased Risk of Hypoxia

To the Editor:—The editorial by Benumof regarding preoxygenation cited pediatric patients as “obvious exclusion examples,” and suggesting that they were not candidates for preoxygenation before the induction of general anesthesia. On the contrary, neonates, infants, and children are at increased risk of hypoxemia because of smaller functional residual capacities, increased heart rates, and increased metabolic requirements compared with adults. The younger pediatric patient who presents for rapid sequence induction (e.g., duodenal atresia) or suspected difficult intubation (e.g., Pierre Robin anomaly) would certainly benefit from appropriate preoxygenation.

Several studies using pulse oximetry data have confirmed that these young patients tend to desaturate more quickly than adults.\(^1\)\(^-\)\(^3\) Notably, the time to desaturation is affected by younger age\(^4\) and recent upper respiratory infection—a common variable encountered in clinical pediatric anesthesia from September through April.

Such studies using oximetry\(^4\)\(^-\)( and end-tidal oxygen assessment (“oxygraphy,” \(\text{FE}_2\text{O}_2\))\(^6\)\(^-\)\(^7\) have demonstrated that children do indeed benefit from appropriate preoxygenation, which prolongs the potential apneic interval, and that use of a tight-fitting mask for at least 1 min is both desirable and strongly recommended.

John E. Morrison, Jr., M.D., F.A.A.P.
Attending Anesthesiologist
The Children’s Hospital
Clinical Professor
Department of Anesthesiology
University of Colorado Health Sciences Center
Denver, Colorado

References


(Accepted for publication January 25, 2000.)

Preoxygenation in Children: Why Not?

To the Editor:—I read with great concern the recent editorial written by Dr. Benumof concerning preoxygenation, in which he states that “...the American Society of Anesthesiologists Difficult Airway Algorithm, which makes no mention of preoxygenation, should include a requirement for preoxygenation before the induction of general anesthesia whenever possible: obvious exclusion examples are very uncooperative adult patients and pediatric patients” (my emphasis). It is not clear whether Dr. Benumof’s intention was to exclude all uncooperative patients, regardless of age, or whether he is suggesting that preoxygenation should not be performed in any child, even if the child is cooperative. Because young children desaturate more rapidly than adults,\(^7\) and because the value of preoxygenation in children has been shown,\(^8\) such a recommendation would seem unwise. Although my concern probably stems from the subtleties of the English language, I would ask Dr Benumof to clarify his meaning.

Rogerio Luiz da Rocha Videira, M.D.
Staff Anesthesiologist
Hospital e Maternidade Sao Luis
Sao Paulo, Brazil
Fevide@macbbs.com.br