Tadros Sandy (Orcid ID: 0000-0003-3341-8721)
Haydar Bishr (Orcid ID: 0000-0003-2709-189X)

Anesthetic impacts on pulmonary function: implications for Cystic Fibrosis

Dr. Sandy Tadros; University of Michigan Medicine Department of Anesthesiology; 1500 E Medical Center Dr., Ann Arbor, MI 48109-5000; telephone: 7349364280, fax: 734936091 ; shtadros@gmail.com

Dr. Rebecca Nause-Osthoff; University of Michigan Division of Pediatric Anesthesiology

Dr. Bishr Haydar; University of Michigan Department of Anesthesiology

Data statement: Data sharing is not applicable to this article as no new data were created or analyzed in this study.

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/pan.14462

Editor,

We have read with interest the article by Williamson and Sharma[1] on cystic fibrosis (CF). Their succinct review highlighted several essential points concerning the perioperative management of patients with CF. One area warrants further discussion.

The article emphasizes the importance of rapid return to baseline pulmonary function with special consideration to the management of patient's respiratory secretions in the perioperative setting. Thus, it is essential to delve into the pulmonary impact of various anesthetics. Ledowski et al demonstrated superior mucociliary clearance in patients receiving propofol and remifentanil, as compared to sevoflurane and remifentanil anesthetic.[2] The foundation of perioperative care for CF patients relies heavily on managements of thick secretions,[1] making maneuvers to facilitate enhanced mucociliary clearance potentially valuable in this population. In addition, volatile anesthetics attenuate hypoxic pulmonary vasoconstriction to a greater degree than propofol.[3] This worsens ventilation-perfusion mismatch, which is already impaired in patients with CF.[4] Moreover, propofol infusion is generally associated with fewer respiratory adverse events during pediatric anesthesia care[5], though this has not been specifically assessed in patients with CF.

Williamson and Sharma suggest the use of intravenous anesthesia for pulmonary procedures in post-transplant CF patients.[1] Our clinical experience and the aforementioned facts suggest that

propofol may be superior to volatile anesthetics for all CF patients undergoing any procedure. We present these data for public consideration, and hope that future investigations may elucidate the potential benefit of propofol over volatile anesthetics for these fragile patients.

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