



In reply: Assessment of fluid responsiveness with end-tidal carbon dioxide using a simplified passive leg-raising maneuver: a prospective observational study

Francis Toupin, MD · André Y. Denault, MD, PhD, FRCPC, FASE

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To the Editor,

We read Drs Barak and Yussim's comments with great interest.¹ They raise the hypothesis that the end-tidal CO₂ (ETCO₂) variation observed following passive leg raising (PLR) is caused by a variation in alveolar dead space instead of an increase in cardiac output. Even if this hypothesis and argument are based on sound physiological principles, we cannot agree with their conclusions.

When alveolar ventilation is kept constant (assuming stable carbon dioxide production), simultaneous ETCO₂ and cardiac output variations have been well described in the literature in multiple clinical situations.^{2,3} Also, in our study, cardiac output and ETCO₂ measurements were performed simultaneously. Fluid responders had a significant change in their cardiac output and ETCO₂ following the PLR maneuver, which is a well-recognized method to assess fluid responsiveness.^{4,5} Therefore, in our study, we think that the ETCO₂ variation represents real cardiac output variation.

Conflict of interest Dr. Denault is a Speaker for Covidien and CAE Healthcare and receives royalties from Taylor and Francis.

Editorial responsibility This submission was handled by Dr. Philip M. Jones, Associate Editor, *Canadian Journal of Anesthesia*.

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F. Toupin, MD · A. Y. Denault, MD, PhD, FRCPC, FASE (✉)
Department of Anesthesiology, Montreal Heart Institute,
Université de Montréal, Montreal, QC, Canada
e-mail: andre.denault@gmail.com