

CORRESPONDENCE



Comments on Teboul and Scheeren: understanding the Haldane effect

Stephan M. Jakob*  and Jukka Takala

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Dear Editor,

We read with interest the article recently published in *Intensive Care Medicine* by Teboul and Scheeren [1]. In this article, the authors describe the effects of oxygen extraction on the relationship between $p\text{CO}_2$ and CO_2 content as an explanation of altered interrelation between changes in flow and $v\text{-a } p\text{CO}_2$ gradients. We and others strove to understand and quantify this effect using data from critically ill patients and animal models many years ago, resulting in several publications not mentioned in the article by Teboul and Scheeren [2–4]. Teboul and Scheeren also failed to address the effect of hemoglobin on the $p\text{CO}_2/\text{CO}_2$ content relationship (CO_2 binding capacity decreases in anemia), which is relevant at extreme values not uncommon in the critically ill [2, 4]. Finally, a recent article highlighted the effects of increasing FiO_2 in shock states on venous–arterial $p\text{CO}_2$ gradients and the ratio between $p\text{CO}_2$ gradient and arterial–venous O_2 content difference (both increasing) [5]. We believe that much of the Haldane effect is already understood—but too often overlooked.

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*Correspondence: Stephan.Jakob@insel.ch
Department of Intensive Care Medicine, University Hospital (Inselspital),
University of Bern, 3010 Bern, Switzerland