IN REPLY

In reply: the agreement between venous and arterial blood gas in critical care and ward patients: is there a need to stratify for shock?

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We thank Drs. Wong and Joseph for their comments¹ regarding our paper² on the agreement between arterial and venous blood gases. We concur with their concern that the agreement we reported may be affected by the condition of the patient. They suggested that we add a stratified analysis based on high lactate or low pH values. However, one of the strengths of the Bland–Altman plots is that visual inspection shows agreement is similar across the entire range of pH and lactate. There is a possibility that high lactate and low pH values are discordant within a patient and that agreement may be different in this subset. Using the thresholds of lactate $> 4 \text{ mEq}\cdot\text{L}^{-1}$ and pH < 7.25 suggested by Drs. Wong and Joseph, this occurred in only 14% and 5% of patients in the intensive care unit and the ward, respectively. This sample size is too small to permit further meaningful interpretation. In preparing the paper, we also considered that patients with greater illness severity would have more blood gas sampling. The agreement was the same regardless of the number of samples (data not presented).

As we state in the conclusion of our paper, the clinical circumstances need to be considered. In a patient with

suspected shock and tissue hypoperfusion, it may be warranted to obtain an initial paired arterial and venous sample, if possible, for confirmation of agreement. The patient may then be managed accordingly.

Conflict of interest None declared.

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