

Response to Metelkina and Barbaud

We welcome this letter, which presents supplementary statistics regarding the association between intravascular bubbles detected using a handheld self-positioning Doppler and decompression sickness (DCS).

The present dataset is relatively small, 152 dives, and with only three DCS cases treated with hyperbaric oxygen (HBO). However, despite the modest size, this dataset holds the potential to make meaningful contributions to larger analyses with pooled data. It is important to underscore that, within the context of such larger analyses, the inclusion of solely HBO-treated DCS cases is recommended due to our observation of a problematic diagnostic variability among cases treated with normobaric oxygen.

We believe that future studies aiming to evaluate methods for predicting the risk of DCS, whether based on grading of intravascular bubbles or involving other algorithms, should use receiver operating characteristic (ROC) and compare the area under the curve (AUC). These analyses can then be utilised to select methods, with appropriate cut-offs for different pre-test probabilities, for research or diagnostics.

References

- 1 Metelkina A, Barbaud A. Commentary on Plogmark et al. Agreement between ultrasonic bubble grades using a handheld self-positioning Doppler product and 2D cardiac ultrasound. *Diving Hyperb Med.* 2023;53:290–291. doi: [10.2890/dhm53.3.290-291](https://doi.org/10.2890/dhm53.3.290-291). PMID: [37718305](https://pubmed.ncbi.nlm.nih.gov/37718305/).

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