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Understanding the benefits and harms of oxygen therapy: response to comments by Akca

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Dear Editor,

We would like to thank Dr. Akca for his comments on our article related to understanding the potential benefits and harms associated with oxygen therapy [1, 2]. We fully agree that the available data are not yet strong enough to make definitive conclusions regarding the toxicity of hyperoxia and its relationship (direct or not) to mortality. Indeed, the available meta-analyses suffer from considerable heterogeneity, as reported by the authors themselves. In addition, meta-analytic approaches cannot help to identify the best oxygen window opportunity for any given patient subset.

Hyperoxia may result from application of high FiO_2 and/or a decrease in oxygen utilization; however, it becomes ever more difficult to refute the statistical association between hyperoxia (high PaO_2) and mortality, despite its theoretical potential benefits. The prospective AVOID trial that pragmatically assessed high versus low inspired oxygen fractions in non-hypoxaemic patients with ST elevation myocardial infarction reported harmful effects in patients treated with a high FiO_2. We mentioned a number of ongoing trials assessing the effects of high FiO_2 in various critical illness settings. These will undoubtedly inform us how to better use oxygen, a drug that requires clear rules on timing and dosage.

References

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