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LETTER TO THE EDITOR

Association between remifentanil and acute kidney injury

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To the Editor:

We would like to discuss the methodological issues of the interesting study by Sakai et al. [1]. To prove an association and causal relationship between a potential predictor and an outcome variable, Hill's criteria should be met [2, 3]. The criteria include strength, consistency, specificity, temporality, biological gradient (dose–response relationship), biological plausibility, coherence, experiment, and analogy. For example, as the remifentanil could result in vasodilation and increase in renal perfusion via suppression of vasopressin, there is a physiologic plausibility for remifentanil to decrease the risk of acute kidney injury (AKI). However, a significant association was not found, possibly due to small sample size. Regarding the dose–response relationship, the author's analysis seems to be insufficient. The remifentanil administration was evaluated only as a binomial variable in the multivariate analysis. The distribution of three different dose categories was shown in Fig. 2. The dose–response relationship could be analyzed by adding these three dose categories to the multivariate analysis, Or, if the data on the remifentanil dose were available as a continuous variable, the dose of remifentanil as a continuous variable could be added to the multivariate analysis in their study or in a further prospective trial.

Compliance with ethical standards

Conflict of interest No competing interest declared.

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