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Letter

Reply to: Letter regarding »Arterial pH and short-term mortality in adult non-traumatic acute patients«

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We thank Daungsupawong and Wiwanitkit for reading and commenting on our recently published article: Arterial pH and short-term mortality in adult non-traumatic acute patients [1]. We appreciate the opportunity to discuss the methodological points raised.

Regarding the concerns about relevant confounding control, the section on statistical methods states that a multivariable Cox regression model was used to determine the association with mortality, adjusting for age, sex, comorbidities, and pH levels.

We agree that therapy measures can impact pH levels and mortality, which is why we included patients having an arterial blood gas drawn within four hours after arriving to minimize the influence on treatment. However, controlling for such factors could have been relevant, but this was not available in the dataset.

Our study aimed to assess the association between pH and short-term mortality using hazard ratios. Using both crude and adjusted hazard ratios, we can see if the observed association is mainly due to pH or if other variables play a greater role (e.g., if there is a large difference between crude HR and adjusted HR). This provides a clinically relevant risk estimate. While we acknowledge that nonlinearity and threshold effects are important considerations, our categorizing pH levels allows for a practical and interpretable risk assessment in the acute setting.

We agree that future research could explore more sophisticated approaches, including continuous

pH monitoring and the impact of interventions targeting acid-base imbalances. However, such analyses were impossible with our dataset, which was limited to initial pH measurements. Our study provides a valuable contribution by identifying the association between arterial pH and short-term mortality. Still, we acknowledge that future studies with more detailed patient-specific data and dynamic monitoring could further refine our understanding of this relationship.

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Conflicts of interest none. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. These are available together with the related article at ugeskriftet.dk/DMJ [1].

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