ENDOCRINOLOGY RESEARCH AND PRACTICE

SOCIETY OF ENDOCRINOLOGY AND METABOLISM OF TURKEY

Vertebral Fractures Increase the Long-Term Mortality of Patients with COVID-19

AUTHOR'S RESPONSE
Endocrinol Res Pract. 2025;29(1):75-76

Dear Editor,

We sincerely appreciate the valuable comments, and we would like to express our wholehearted thanks for the opportunity to respond.

Like the commenters, we also considered the possibility that age could independently influence survival outcomes. In fact, prior to presenting our results, we trained our regression model by including age as a confounder. Despite this adjustment, we observed that vertebral fractures (VFs) remained a significant predictor of alive status (OR: 1.4, CI [1.1-1.8], $P < .05$).

However, we chose not to include age in the final model. Our reasoning is that age, when used in mortality analysis, introduces an inevitable bias. The risk of mortality is not easily adjusted for age using statistical methods, as comparing a 19-year-old patient with a 90-year-old patient oversimplifies the complexities of risk. Naturally, the older patient will have a much higher risk of death, regardless of other variables. Since age is a strong predictor that can overshadow the importance of other factors, we excluded it from the final model, where it was found to be non-significant.

Moreover, we thoroughly discuss the potential effects of age in our original manuscript.

We also addressed the limitations of our study, including its retrospective nature, which limits our ability to evaluate the timing of vertebral fractures and prevents us from drawing firm conclusions about the causal relationship between vertebral fractures and mortality.

Regarding the suggestion of using propensity score matching (PSM), we carefully considered this method but ultimately determined that it was not suitable for our dataset. Propensity score matching requires a large sample size with balanced covariates between treatment and control groups to minimize selection bias effectively. However, our dataset is relatively limited in terms of both sample size and the distribution of covariates. This imbalance between groups could lead to overfitting or exclude a significant number of cases during the matching process, resulting in a substantial loss of data and potentially reducing the statistical power of our analysis. Additionally, in our study, certain covariates, such as age and specific comorbidities, are inherently confounded with the mortality, making it difficult to achieve proper matching without introducing bias. Given these constraints, we decided that alternative statistical approaches, such as multivariable regression modeling, would be more appropriate and robust for our analysis.

Finally, we acknowledge that increased age could contribute to both vertebral fractures and mortality, a point that was emphasized in the discussion section of the manuscript.

We hope this explanation clarifies our approach and reasoning. Once again, we extend our sincere thanks to you and the reviewers for your thoughtful input.

Availability of Data and Materials: The data that support the findings of this study are confidential and will not be shared.

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Informed Consent: Verbal and written informed consent was obtained from the patients who agreed to take part in the study.

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