

Author's Reply

Reply to the Letter **“Methodological issues in multivariable logistic regression”**

Dear Editor,

Thank you for the opportunity to reply to the valuable comments of Ya Zhang and Shiping Zhu¹. You can find our responses below.

First, the linear association was evaluated during controlling for the assumptions of the regression model, and we did not find any clue suggesting a curvilinearity and the necessity for a more appropriate non-linear approach. This might be associated with the presence of stable angina pectoris, which might present with distinct laboratory parameters than sepsis and neurological disorders, as the authors suggested. Nevertheless, different results can be obtained from diverse study populations; thus, we recommend checking for the test assumptions and particularly linear associations in regression models, as the authors suggested to us.

Second, we agree that the number of independent predictors in multivariate models is important and should be appropriate for the frequency of positive outcomes^{2,3}. But the occasions that contradict with this assumption can be alleviated by applying further stepwise regression analyses, which give the comprehensive evaluation of relationships between dependent and independent variables. We performed stepwise analyses and presented the final model with both entering methodologically appropriate covariates and forcing the model with clinically significant parameters.

Last, multicollinearity can be unnoticed unless mainly checking for it⁴. As we mentioned above, we studied the necessary test assumptions, including multicollinearity. But we did not include a statement on it in the statistical analyses section since not all steps of every statistical analysis are mentioned in manuscripts.

To conclude, we thank the authors for pointing the readers to such a critical appraisal of multivariable logistic regression analyses' methodologic assumptions. Unpracticed researchers should always refer to an experienced statistician for advanced analytical methods to avoid easily overlooked mistakes.

Conflict of interest

The authors declare that they have no conflict of interest.

References

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N. Kose¹, F. Akin², T. Yıldırım², G. Ergun², I. Altun²

¹Department of Cardiology, Private Yucelen Hospital, Mugla, Turkey

²Department of Cardiology, Mugla Sitki Kocman University, Faculty of Medicine, Mugla, Turkey