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LETTER TO THE EDITOR RESPONSE

Reply to Nezic *et al.*

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Thank you for the opportunity to reply to the letter from Nezic *et al.* [1]. In their letter, Nezic *et al.* first expressed concerns about the potential differences in the definition of mortality between our validation study [2] and original EuroSCORE models [3]. In the discussion section of our article, we only aimed to point out the most commonly used risk prediction models in current Turkish cardiac surgical practice. In fact, in our study, we defined operative mortality as any death, regardless of cause, occurring within 30 days after surgery, in or out of the hospital, and after 30 days during the same hospitalization subsequent to the original operation. Thus, our mortality definition is similar to original EuroSCORE definitions and our findings regarding mortality overprediction of EuroSCORE is valid.

Second, as suggested by Nezic *et al.* [1] we used Hosmer–Lemeshow (H-L) goodness-of-fit statistics to test EuroSCORE calibration in our patient population. For the entire cohort, the calibration values were 5.5 ($P = 0.357$) and 53.0 ($P < 0.05$) for additive and logistic models, respectively. Furthermore, for isolated CABG subgroup, we obtained similar results with the calibration values of 6.9 ($P = 0.231$) and 19.0 ($P < 0.05$) for additive and logistic EuroSCORE models, respectively. Thus, H–L tests confirmed good calibration for the additive EuroSCORE model in our patient cohort, unlike the logistic EuroSCORE model. Nevertheless, a significant H–L test does not necessarily mean that a predictive model is not useful. As Nezic *et al.* [1] mention the contradictive findings regarding the usefulness of H–L statistics, we agree that further studies are needed to clarify the usefulness and necessity of H–L statistics.

Furthermore, we believe that a statistical prediction model, namely linear regression, trained on a certain population cannot operate ideally on a different population target, which we showed in our previous work [2]. There can be two different approaches to overcoming this handicap. The first one would be using the same predictors as EuroSCORE does and build up a linear model by using these predictors on the Turkish population. Current cardiac surgical mortality in our cohort has been running 0.49–0.67 of EuroSCORE prediction for different risk subgroups. The second approach would be to come up with a better model, probably with different predictors and specifically trained and tested on Turkish population. Our group is currently working on the second approach.

Conflict of interest: none declared.

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