



## Response to the comments to the article “Does SYNTAX score II predict poor myocardial perfusion in ST-segment elevation myocardial infarction?”

We are grateful for the kind comments [1] to our manuscript entitled “Does SYNTAX score II predict poor myocardial perfusion in ST-segment elevation myocardial infarction?” published in “Cardiology Journal” [2]. In their Letter to the Editor, the authors emphasize the importance of the recently emerged inflammatory parameters, such as the neutrophil to lymphocyte ratio (NLR) [3], and suggest NLR as a covariate in addition to SYNTAX score (SS) variables to predict poor myocardial perfusion in our study.

Recently, NLR was found to be a strong predictor of adverse outcomes in acute coronary syndrome [4, 5]. However, its underlying mechanism remains unknown. It may be due to atherosclerosis, known as a chronic inflammatory process.

In our study, we found similar NLR values between the high SS-II and the other two lower tertiles (SS-II<sub>high</sub> vs. SS-II<sub>intermediate</sub> vs. SS-II<sub>low</sub>:  $7.1 \pm 5.02$  vs.  $7.0 \pm 4.69$  vs.  $7.1 \pm 4.88$ ,  $p = 0.925$ ). In multiple logistic regression, regarded as a covariate in addition to SS-II variables, NLR was not an independent factor to predict poor myocardial perfusion (1.009 [0.968–1.055],  $p = 0.688$ ). These could be interpreted as follows: i) first, study sample size is not large enough to statistically demonstrate the significance of such a minor difference in NLR values of these three groups; ii) second, NLR in our study was much higher ( $7.1 \pm 4.87$ ) as compared to this reported in other studies [4, 6, 7]; this could be mainly caused by the longer average reperfusion time (onset-balloon time) in our study than those described in other studies ( $5.3 \pm 3.9$  h vs.  $4.2 \pm 3.8$  h) [3, 4, 6, 7]; thus, the frequency of myocardial blush grade < 3 in our study is much higher than reported by Sen et al. [3] (60.5% vs. 41%); iii) third, the frequency of smoking in the high SS-II is less than in the other two lower tertiles (18.5% vs. 31.1% vs. 38.0%,

$p < 0.001$ ), which may influence the inflammation reactions. However, as mentioned by authors, inflammation parameters, such as C-reactive protein or NLR, have the potential to increase predictive ability to poor myocardial perfusion in patients with ST-elevation myocardial infarction. In conclusion, it was not clear whether to highlight NLR as an independent factor to predict poor myocardial perfusion. Further larger studies are needed to show and clarify this important issue.

**Conflict of interest:** None declared

### References

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