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The persistent illusion of using coronary angiography alone to guide decision-making for myocardial revascularization

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model. In addition, the web application offers an intuitive and practical application to estimate the individual mortality risk of patients with acute type A dissection. Based on this information, it is possible to perform an external validation of the model we propose by collecting the relevant patient data, performing logistic regression modelling including variable selection and then comparing the results. Nevertheless, for reasons of transparency and following the proposed guidelines for data reporting, we can provide the information postulated by reporting the predictive model with its predictive equation. The prediction equation is as follows:

$$\text{Log}(P/(1 - P)) = -3.64121 + 0.01771 \times \text{age (in years)} + 0.16853 \times \text{sex (1 = male)} + 0.54945 \times \text{catecholamines at referral} + 1.11547 \times \text{resuscitation} + 0.66739 \times \text{need for intubation} - 0.21789 \times \text{aortic valve regurgitation (1 = grade III or IV)} + 0.36599 \times \text{hemiparesis} + 0.62578 \times \text{coronary malperfusion} + 0.55821 \times \text{visceral malperfusion} + 0.24675 \times \text{peripheral malperfusion} + 0.25096 \times \text{dissection extension to aortic arch} + 0.22098 \times \text{dissection extension to supra-aortic vessels} + 0.36676 \times \text{dissection extension to descending aorta} + 0.24252 \times \text{primary entry tear aortic arch} + 0.57208 \times \text{previous cardiac surgery}.$$

The category 'unknown or other' was complemented for practical reasons into the provided web application and was converted to the value of 0 in the respective variables. With this information we hope that we could satisfy Dr Sartipy's points and help to facilitate the future validation projects and we look forward to finding the results of external validation in the literature.

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The persistent illusion of using coronary angiography alone to guide decision-making for myocardial revascularization

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We read with great interest the article by Del Forno *et al.* [1], in which 77 patients with $\geq 50\%$ but $< 70\%$ coronary artery stenoses who underwent elective aortic or mitral valve surgery without myocardial revascularization were evaluated at a median follow-up duration of 4.3 years. We would like to highlight crucial features concerning the assessment of angiographically intermediate-grade coronary stenoses in patients undergoing valvular surgery. Coronary angiography has traditionally been accepted for the assessment of coronary artery stenosis severity and to guide the decision-making for myocardial revascularization [2]. Recent evidence indicates however that discordances between angiographically derived $\geq 50\%$ diameter stenosis (DS) and haemodynamically significant coronary artery stenosis occur in nearly one-third of patients [3]. The optimal diagnostic DS threshold also varies according to the amount of viable myocardium subtended, with a lower DS cut-off observed in

coronary segments subtending a large amount of myocardial mass compared to coronary lesions supplying smaller areas [3]. This anatomic approach is therefore unlikely to correctly identify lesions that are truly flow-limiting and may result in inappropriate treatment decisions. In the present study, the lack of preoperative assessment for both myocardial ischaemia and viability in coronary stenoses deferred from revascularization may explain low event rates and the absence of between-group differences in clinical outcomes as significant clinical benefits from myocardial revascularization compared to conservative management may hardly be expected in stable coronary artery disease patients with mostly functionally non-relevant coronary lesions. Furthermore, the study did not include patients with angiographically intermediate left main coronary artery stenoses, which are usually underestimated using the 50% DS cut-off [3], thus precluding conclusions with regard to the safety of myocardial revascularization deferral based on coronary angiography alone in these high-risk patients. Physiological assessment of coronary lesions in patients with valvular disease remains challenging because traditional non-invasive and invasive indices of coronary stenosis severity have not been validated in this setting [2]. Severe heart valve disease impacts on coronary microcirculation and influences coronary haemodynamics. Recent evidence suggests that invasive pressure-derived resting indices of coronary stenosis severity may be less vulnerable to the confounding effect of a stenotic aortic valve than hyperaemic indices such as the fractional flow reserve [4], but further trials elucidating the close interplay between coronary physiology and heart valve disease for clinical decision-making are still needed.

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Reply to Cimci *et al.*

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