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Reply

We thank Dr. Ramanna for his interest in our work. Our large prospective study for the first time demonstrated that myocardial salvage assessed by cardiac magnetic resonance predicts clinical outcome in acute reperfused myocardial infarction patients (1). Indeed, the myocardial salvage index (MSI) was the strongest predictor of mortality and major adverse cardiac events (MACE) according to our statistical analysis.

We performed a conditional stepwise Cox regression analysis with the candidate variables infarct size, microvascular obstruction, MSI, Thrombolysis In Myocardial Infarction flow grade after percutaneous coronary intervention, Killip class, left ventricular ejection fraction, and ST-segment resolution. After 3 steps, MSI remained the only significant prediction factor for the combined end point. Furthermore, MSI had a better predictive value for mortality than infarct size in our (unadjusted) receiver-operating characteristic curve analysis (0.818 vs. 0.701). The p value for the comparison (not shown in the paper) is 0.02. For MACE, however, the difference was not statistically significant (0.803 vs. 0.791, p = 0.65). However, it should be kept in mind that the *c* statistic is relatively insensitive compared with more global models adjusting for other variables (such as the regression model used in the paper) (2). Thus, we feel confident to conclude that in our study of 208 infarction patients, MSI was the strongest correlate of mortality and MACE.

Nevertheless, we agree with Dr. Ramanna that in myocardial salvage assessment, it is indeed the final infarct size that can be considered the true biological target of interest. We also believe that further studies are required to clarify the relationship between the salvaged area at risk and clinical outcome.

We agree with Dr. Ramanna that myocardial salvage is a very promising clinical investigative tool to test the efficacy of different reperfusion therapies among patients with acute myocardial infarction. Infarct size reduction is suboptimal to assess the efficacy of reperfusion therapy because the final infarct size depends on multiple factors such as the extent of the area at risk, collateral blood flow, duration of myocardial ischemia, and metabolic demand (3). Therefore, measuring only infarct size might impose a potential bias, and myocardial salvage with an adjustment for the area at risk may be a better surrogate end point in clinical trials.

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