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**COMBINING LEFT MAIN AND MULTIVESSEL CORONARY ARTERY DISEASE AS A REVASCULARIZATION TARGET**

To the Editor:

We read with great interest the article by Urso and colleagues1 with regard to the meta-analysis comparing coronary artery bypass grafting (CABG) and percutaneous coronary intervention (PCI) in patients with multivessel or left main coronary artery disease (CAD). They have underscored the better long-term survival in the surgical arm using the generic inverse variance method and individual patient data derived from the Kaplan–Meier method. However, we would like to raise a potential concern about its heterogeneous population and a suggestion of time-to-benefit analysis.

Treatment strategies for multivessel and left main CADs have been studied for decades, and it is still inconclusive whether PCI provides an alternative option, especially in left main CAD.2-4 In left main CAD, both American and European guidelines endorse CABG as class I. PCI in the American guideline is class IIa when anatomically feasible, and the recommendation for PCI ranges from I to III according to the SYNTAX score in the European guideline, indicating that both treatments can be an option in selected patients.3,4 In multivessel CAD (and with diabetes mellitus), on the other hand, the guideline gives preference to CABG unless patients are poor candidates for surgery (PCI as Class IIa if poor candidates for surgery).4 Thus, the revascularization strategy of left main or multivessel CAD should be discussed separately, and their recommendation differs between them. Cohorts often overlap because patients with multivessel disease and left main CAD have a similarly high atherosclerotic profile. However, the similarity of clinical outcomes in the literature, to which the authors attribute the inclusion of both left main and multivessel CAD in the study, does not warrant mixture of these diseases in terms of decision making. For example, treatment strategies including graft or PCI designs vary greatly between a pure left main CAD and a multivessel CAD without involvement of the left main trunk. Therefore, clarifying the optimal treatment in specific situations for multivessel or left main CAD rather than overall superiority would have a higher impact on the guidelines and be more applicable to individual patients.

Another research interest from the surgeon’s perspective is whether elderly patients can still expect benefit from CABG. Time-to-benefit analysis is a method to elucidate the time from intervention to time when the clinical outcomes improve, and it has been conducted to assess the effect of preventive treatment including statin therapy.5 This analysis may enable us to evaluate the benefit from CABG considering life expectancy or absolute risk differences at the specific time interval. In other words, it may provide information to decide which revascularization strategy to use based on age and prognosis or patients’ preferences.

We believe these points would add significant insight on this study if the authors can address them.

**References**


We thank Dr Sakata and colleagues for their interest in our recently published meta-analysis. Their main concern lies with our choice to pool together patients with left main disease (LMD) and multivessel coronary artery disease (CAD) in the same analysis. Our main reason to do so was that, as shown in Table 2 of our publication, in different LMD trials, a significant proportion of patients with LMD suffers as well from multivessel CAD. In the PRECOMBAT (Premier of Randomized Comparison of Bypass Surgery versus Angioplasty Using Sirolimus-Eluting Stent in Patients with Left Main Coronary Artery Disease) and EXCEL (Evaluation of XIENCE Versus Coronary Artery Bypass Surgery for Effectiveness of Left Main Revascularization) trials, for example, isolated LMD accounts for approximately 10% and 17% of the respective populations. In the same trials, LMD plus multivessel CAD is present in more than 70% and 50% of the sample populations, respectively. In the SYNTAX (Synergy between PCI with Taxus and Cardiac Surgery) trial, patients with isolated LMD were 5% and those with LMD plus multivessel CAD were 26% of the sample population.

Considering, within the comparison of the surgical versus the percutaneous treatment, the lack of interaction or effect modification of LMD/multivessel CAD on survival, it is likely that both conditions share a common relative outcome after revascularization. This aspect reinforces the need to consider LMD and multivessel CAD not as 2 separate manifestations of ischemic heart disease but as a common entity.

Finally, we appreciate the suggestion by Sakata and colleagues to use time-to-benefit analysis, which we may include in further studies.

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References