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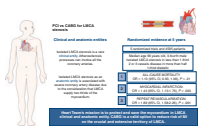

REPLY: BEHIND ENEMY LINES: PRESERVING THE MYOCARDIUM SUPPLIED BY THE LEFT MAIN

Reply to the Editor:

In a recent letter, Gomes[1] discussed the concept that left main coronary artery (LMCA) stenosis is not a unique entity, but shares the same pathophysiologic characteristics as non–left main coronary artery disease (CAD). This hypothesis is also based on the recent evidence drawn from the ISCHEMIA trial, in which invasive treatment of ischemia did not significantly affect survival relative to medical treatment alone.[2]

As Gomes[1] states, the prognosis of patients with CAD is mostly affected by acute coronary syndromes that occur as a result of rupture or erosion of non–flow limiting stenosis, rather than by the extent of ischemia. This justifies the hypothesis that LMCA stenosis is only a marker of diffuse CAD that might be associated with the presence of multiple unstable atherosclerotic plaques. It must be noted, however, that patients with LMCA stenosis were excluded from the ISCHEMIA trial, and its conclusions cannot be generalized.

In accordance with what has been elegantly discussed by Gaudino and colleagues,[3] LMCA should be considered a "clinical entity" in which the atherosclerosis process can involve not only the LMCA territory but also other coronary arteries. The clinical recommendation for the treatment of LMCA has historically treated LMCA disease as a unique "anatomic entity" rather than a "clinical entity," because the LMCA supplies two-thirds of the myocardium (Figure 1).

In our recent meta-analysis, we found that percutaneous coronary intervention is associated with an increased risk of myocardial infarction at 5-year follow-up compared with CABG (odds ratio, 2.32; 95% confidence interval, 1.62-3.31; $P < .001$) and with an increase in the number of repeat revascularizations (odds ratio, 1.89; 95% confidence interval, 1.58-2.26; $P < .001$).[4] A subanalysis of the EXCEL trial showed that repeat revascularization was independently associated with increased risks for 3-year all-cause mortality and cardiovascular mortality and that most of the repeat revascularizations were the result of target lesion failure.[5] Our meta-analysis found no significant difference in all-cause mortality at 5 years.[4] None of the randomized clinical trials (including the EXCEL and NOBLE trials) were powered to assess mortality, but a pooled analysis of the EXCEL and NOBLE trials showed a survival benefit in the CABG group.[3]

Therefore, we would like to emphasize a "pathophysiologic concept": LMCA stenosis as an anatomic entity puts a large amount of myocardium at risk and as a clinical entity is a marker of more extensive CAD. Acute myocardial infarction as a result of LMCA occlusion is a dramatic event because of the key anatomic role played by the LMCA in supplying the left ventricle.

The heart team's mission should be to protect and save the myocardium. CABG, by achieving more complete revascularization and by protecting proximal segments of coronary arteries from the progression of the disease, is a valuable option in reducing the risk of repeat revascularization, myocardial infarction, and therefore mortality in patients with LMCA stenosis.

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The schematic art pieces used in the central picture and Figure 1 were provided by ServierMedical Art (http://smart.servier.com). ServierMedical Art by Servier is licensed under a Creative Commons Attribution 3.0 Unported License.

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https://doi.org/10.1016/j.jtcvs.2020.06.038

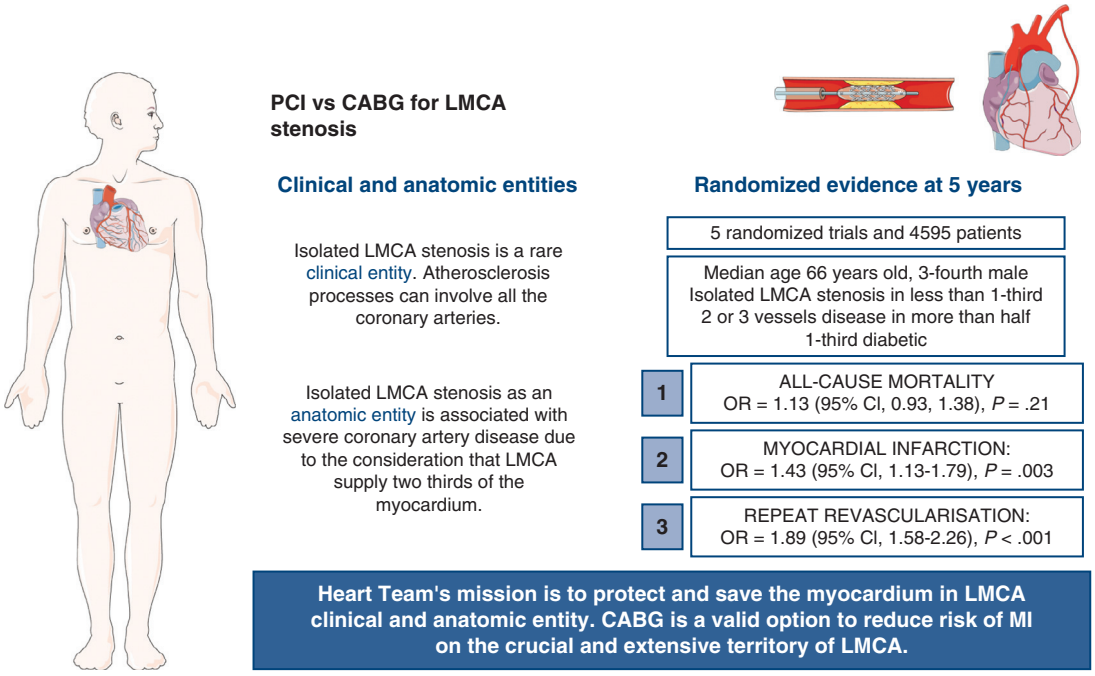

FIGURE 1. *Left*, Clinical and anatomic entities of left main coronary artery (*LMCA*) stenosis. *Right*, Main 5-year follow-up results of our systematic review and meta-analysis of percutaneous coronary intervention (*PCI*) compared with coronary artery bypass grafting (*CABG*) for left main coronary artery stenosis. *OR*, Odds ratio; *95% CI*, 95% confidence interval; *MI*, myocardial infarction.Art provided by ServierMedical Art (http://smart.servier.com). ServierMedical Art by Servier is licensed under a Creative Commons Attribution 3.0 Unported License.