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REPLY: Percutaneous Revascularization of Left Main Disease

Could the Angiographic Follow-Up Improve the Survival?

Dr. Lozano and colleagues raise an interesting point regarding percutaneous coronary intervention for the treatment of unprotected left main disease (UPLMD). The role of routine angiographic follow-up (RAF) after percutaneous coronary intervention has been assessed in a few studies (1). The first and only randomized evaluation of the topic was performed in the Benestent II trial (2). In that trial, RAF was found to increase the rate of repeat revascularization procedures without having a positive impact on hard outcomes such as myocardial infarction or mortality. The impact of RAF in specific high-risk subgroups such as patients with UPLMD is still a matter of debate.

Indeed, patients with UPLMD are at a relatively high risk of restenosis (approximately 18%) (3). More importantly, the fact that approximately 1 in 4 of these patients present with acute coronary syndromes questions the benignity of restenosis in this clinical subset. Furthermore, it is possible that these numbers are even worse if we consider the cases presenting with sudden death before angiographic follow-up could be undertaken (3). Nonetheless, available data fails to support the RAF strategy even for UPLMD, and an expectant management can apparently be safely adopted in these patients (4).

Indeed, it is still in the field of speculation that RAF after stenting of unprotected left-main coronary disease would help in reducing subsequent events. In fact, the evidence points to the opposite direction, that is, to higher need for repeat revascularization procedures at follow-up (5). We agree that only a randomized trial specifically designed to address this question would finally put the issue to rest.

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Medication Adherence and Cardiovascular Outcomes

I read with interest the recent publication by Bansilal et al. (1) as well as the accompanying editorial by Armstrong and McAlister (2). The continued attentiveness to medication adherence as a significant clinical variable is encouraging. It should be noted that an evaluation of the baseline characteristics of the nonadherent, partially adherent, and fully adherent populations showed no significant

differences in any of the measured individual medical conditions. In contrast, the less adherent groups were more likely to be from areas with lower median income and were also more likely to be African-American or Hispanic. Prior studies have shown that adverse cardiovascular outcomes and poor utilization of evidence-based discharge care after myocardial infarction are independently associated with each of these groups (3,4). Even so, the authors attempted to minimize confounding by appropriately adjusting for race and income. However, there are likely other socioeconomic variables such as education level, social support, employment status, and cultural differences that were not fully captured in this data set which may have impacted both adherence as well as cardiovascular outcomes. The differences in characteristics between adherent and less adherent groups further emphasize the need to better incorporate these types of socioeconomic variables into our methods of identifying and managing high-risk patients in both routine clinical care as well as clinical research studies, particularly in relation to medication adherence.

It is also worth emphasizing that although medication adherence is complicated by various socioeconomic factors that are often difficult to measure, let alone modify, Armstrong and McAlister are correct in pointing out that progress in this area remains both necessary and possible. We should remain optimistic that innovative studies such as the ongoing ARTEMIS (Affordability and Real-world Antiplatelet Treatment Effectiveness After Myocardial Infarction Study) trial (5), a multicenter randomized trial of copayment vouchers for $P2Y_{12}$ inhibitors after myocardial infarction, will help find ways to impact both adherence and cardiovascular outcomes. The most important initial intervention, however, will remain our decision to discuss the importance of medication adherence with our patients, as a problem never discussed will likely be a problem never solved.

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REPLY: Medication Adherence and Cardiovascular Outcomes

We welcome Dr. Faridi's thoughts regarding our publication (1) and commend him on his astute observations regarding drivers of medication non-adherence. Our group has previously shown in the FOCUS (Fixed-Dose Combination Drug for Secondary Cardiovascular Prevention Study) trial (2) that younger age, depression, being on a complex medication regimen, poorer health insurance coverage, and a lower level of social support are all predictive of poorer medication adherence.

Previously, the MI-FREE (Myocardial Infarction Free Rx Event and Economic Evaluation) trial, and currently the ARTEMIS (Affordability and Real-world Antiplatelet Treatment Effectiveness after Myocardial Infarction Study) (3), are both outstanding investigations attempting to tease out the role of monetary burden on medication compliance for our patients. We agree with Dr. Faridi on the critical importance of discussing medication adherence with our patients, early and often, as elegantly outlined in his recent publication (4).

Our group is pursuing the use of a true polypill as a novel strategy to improve medication adherence and impact cardiovascular outcomes through the SECURE (Secondary Prevention of Cardiovascular Disease in the Elderly) trial, which will enroll 3,602 post-myocardial infarction elderly patients (5).

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