Revisiting the role of percutaneous revascularization versus medical therapy for later infarct-related artery occlusion (letter of comment on Ioannidis and Katritsis. *Am Heart J*. 2007;154:1065-71)

To the Editor: We have read with interest the recent systematic review and meta-analysis by Ioannidis and Katritsis[1] comparing percutaneous revascularization versus medical therapy for later infarct-related artery occlusion. Despite the authoritative stance and the thorough reporting, we caution that study selection was inappropriate and that the authors' conclusions appear overly pessimistic, especially in light of the evident limitations of the recent OAT trial.

First, in the analysis for change in left ventricular ejection fraction (LVEF), the investigators inappropriately include the largely negative TOAT trial, in which no baseline value was reported for LVEF.[2] Indeed, the earliest LVEF data reported from TOAT investigators were at 6 weeks after the event (with intervention occurring between 3 days and 6 weeks after the acute event). Data from this trial should not have been included in the analysis by Ioannidis et al. Moreover, the authors should rerun their analysis for LVEF after excluding the TOAT study.

Second, a further caveat of this review is that selection bias may have played a major role in included trials, specifically in the OAT study, but it has not been appraised in detail.[3] Unfortunately, no detailed registry of the screened patients has been taken to appraise the external validity of the trials. It is unclear if many occlusions that were deemed feasible and functionally important were immediately attempted (thus excluding them from trials), with only the ones that remained reaching randomization.

Third, even assuming the accuracy of pooled LVEF estimates reported by Ioannidis et al, we disagree with the authors in their overly pessimistic interpretation. In addition to a favorable trend for percutaneous intervention on all-cause death and heart failure, there was a significant and clinically relevant effect of percutaneous revascularization on LVEF. Specifically, the 2% change provided by angioplasty is similar to that provided by β-blockers or angiotensin-converting enzyme inhibitors, at least over a few months of therapy, and the TOSCA-2 trial was not much larger than the other included studies (as the OAT trial has, to date, not provided LVEF data for the whole group).[3,4]

In conclusion, and especially given the lack of evidence for an increase of reinfarction after angioplasty, in our humble opinion, these data do not contradict but rather support the "late open artery hypothesis" as postulated by Braunwald et al,[5,6] as they show a time-independent benefit in cardiac function after acute myocardial infarction and therefore reinforce our willingness to percutaneously recanalize totally occluded infarct-related artery lesions unless angiographic or clinical features are unfavorable. The reasons why these favorable effects on cardiac function did not translate into a clinically significant benefit in the OAT study is unclear, and perhaps longer follow-up periods will be necessary to thoroughly appreciate such issues.

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Dr Biondi-Zoccai has consulted for Boston Scientific, Cordis, and Mediolanum Cardio Research, and has received lecture fees from Bristol Myers Squibb.