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<http://dx.doi.org/10.1016/j.jtcvs.2015.09.020>

OFF-PUMP ON-PUMP DEBATE: CAVEAT EMPTOR

Reply to the Editor:

The eye sees only what the mind is prepared to comprehend.

—Robertson Davies

The meta-analysis is a useful tool for the clinician to distill and condense trial information to facilitate evidence-based medical practice. The reader must come to the table, however, with the eye of a cynic, with a full understanding of the steps that have been taken to avoid bias in the presentation as subtle changes and manipulations of the complex statistics can dramatically sway the outcomes and thus the interpretation. It is apparent that Kowalewski and colleagues¹ have taken steps to bolster our confidence that the heterogeneity of the trials and the trial size were not factors in the single positive outcome. As raised in the accompanying editorial, however, do small trials of low quality still impact the overall answer?

The problem of trial quality is a major concern in systematic reviews. A Cochrane Collaborative study demonstrated the implications of more than 70 meta-analyses in the literature by replicating the data analysis. This study found that more than two-thirds of the conclusions that favored one of the interventions were no longer supported if trials with inadequate concealment of allocation were excluded.²

It is interesting to note that the question of off-pump versus on-pump coronary artery bypass grafting has been simultaneously addressed in a publication in a sister journal.³ One could criticize the study of Deppe and colleagues³ as less diligent in terms of the literature search as it did not, for eg, include congress proceedings. On the other hand, I believe that a more robust assessment of the quality of the trials was completed, with 3 scoring systems including the Jadad score.⁴ When all trials were considered, Deppe and colleagues³ did identify similar findings in terms of perioperative stroke and off-pump surgery. Publication bias was evident with regard to the stroke outcome, as demonstrated by the funnel plot analysis, but this may have been explained by their less diligent search relative to that of Kowalewski and colleagues.¹ When the assessment was limited to the 13 identified trials of “high quality,” however, there was no longer a stroke benefit associated with off-pump surgery (off-pump, 1.5%; on-pump, 1.8%; odds ratio, 0.86; 95% confidence interval 0.65-1.13; $P = .3146$).

Kowalewski and colleagues¹ have disclosed their passion for and belief in off-pump surgery by the declaration of their personal experience with 98% of patients treated. But does this zealotry inspire confidence in the reader that subtle unintentional bias has not been imposed with the complex statistical approaches used? Did Kowalewski and colleagues¹ set out to answer a question, or to prove a point? Further,

I wonder, if one cannot trust a summation of high-quality trials, what can one believe in?

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