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# CORRESPONDENCE

## What Are the Predictors of Atrial Fibrillation in Coronary Artery Bypass Grafting?

To the Editor:

We congratulate Omer and colleagues on their study.<sup>1</sup> Atrial fibrillation (AF) is very important because it is one of the most common of the arrhythmias that occur after coronary artery bypass grafting (CABG). Undoubtedly, reperfusion injury to ischemic tissue, after cardiopulmonary bypass (CPB) and aortic cross-clamping, plays a major role in AF.<sup>2-4</sup> Very intensive proinflammatory mediators are released during both processes. These mediators induce arrhythmias by causing humoral and structural changes within the heart.<sup>5,6</sup> Consequently, the chief factor in the development of AF after CABG is inflammation.

In Omer and colleagues' study,<sup>1</sup> CPB duration and cross-clamp duration were not included among their postoperative AF predictors. In our judgment, the authors should share their ideas about this issue with their readers, to add value to their study.

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*This letter was sent to Dr. Omer and colleagues, who respond in this manner:*

On behalf of our co-authors and ourselves, we thank Dr. Gokalp and colleagues for their comments about our paper.<sup>1</sup>

We do agree that ischemia reperfusion injury plays a role in postoperative atrial fibrillation (POAF) and that various retrospective studies have been published on this topic.<sup>2-5</sup> Our study itself was retrospective, and from our charts and database we recorded only white blood cell counts as an index of inflammation. Accordingly, we did not incorporate such factors as CPB duration and cross-clamp duration as a part of our study.

We think that multiple other reasons for POAF are so intertwined that their true impact is difficult to quantify. We know that both on-pump and off-pump surgery activate the inflammatory cascade and that multiple inflammatory mediators are involved. It is difficult to pinpoint which is responsible, and to what extent.<sup>2,5</sup> In addition, myocardial ischemia by itself can activate the inflammatory response. Therefore, we think that cardiopulmonary bypass and cross-clamping by themselves might not be the main culprits for POAF. Off-pump surgery has a significant incidence of POAF, as does lung surgery and transcatheter aortic valve replacement (TAVR).

In the TAVR literature, transapical TAVR had a higher incidence of POAF than did transfemoral TAVR—which is intriguing, because mere manipulation of the heart and pericardium led to a higher incidence of POAF.<sup>6</sup> In TAVR, as we know, the need for cardiopulmonary bypass and cross-clamping is rare.

We agree that more studies should be performed to clarify the extent to which differing inflammatory mediators induce POAF.

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