TOPICAL AMIODARONE TO PREVENT POSTOPERATIVE ATRIAL FIBRILLATION: NEED FOR FURTHER STUDY

To the Editor:

Postoperative atrial fibrillation (AF) is a common complication after cardiac surgery that increases hospital stay and the risk of stroke.¹ Prophylactic systemic administration of amiodarone in the perioperative period prevents postoperative AF²; however, its challenging side-effect profile limits its routine and widespread use as prophylaxis.³ It was therefore with great interest that we recently read the report by Feng and colleagues⁴ describing their success in applying a topical amiodarone-releasing hydrogel on the atrial surface during coronary artery bypass grafting operations. Feng and colleagues⁴ randomly assigned 100 patients to receive either usual care or the addition of amiodarone 1 mg/kg mixed with Co-Seal (Baxter Healthcare, Deerfield, Ill) diffusely sprayed over the left and right atrial epicardium before sternal closure. Feng and colleagues⁴ reported a significant reduction in the incidence of postoperative AF with topical amiodarone (usual care vs amiodarone, 26% vs 8%; $P < .01$). In contrast to the challenges associated with systemic amiodarone, Feng and colleagues⁴ noted no safety concerns associated with the amiodarone-releasing hydrogel application.

Feng and colleagues⁴ are to be congratulated for an elegant study, even if the study population was relatively small. Moreover, the design was limited by the absence of blinding, a clear randomization process, or a placebo therapy to serve as a control. Nevertheless, the results of the pilot study were striking, and after its publication we began to apply the therapy to all our subsequent cardiac surgical patients with no previous history of AF. We applied the therapy in a manner similar to that described by Feng and colleagues,⁴ except that we increased the dose to 150 mg for all patients (instead of 1 mg/kg). All patients were followed up with telemetry after surgery. Although we were enthusiastic at first, we ultimately were disappointed with our experience. The rate of AF among 100 consecutive patients who served as historical controls was not different from the rate of AF among the subsequent 50 patients who were treated with topical amiodarone

(usual care vs amiodarone, 29% vs 36%; $P = .46$). The difference remained nonsignificant even when we adjusted for covariates (age, sex, and length and complexity of surgery) with logistic regression (odds ratio, 1.5; $P = .28$) and when we limited the sample to only patients undergoing coronary artery bypass grafting (usual care vs amiodarone, 27% vs 38%; $P = .36$).

In contrast to Feng and colleagues,⁴ we could not find a similar benefit in our patient population, putting the generalizability of their results in question. We would be pleased to learn from Feng and colleagues⁴ whether they are continuing to study the use of topical amiodarone and also whether they are embarking on a larger trial to confirm the findings from their initial pilot study. Alternatively, have they begun to apply this therapy widely in their practice? On the basis of our experience, in light of its cost and the unclear benefits, we believe that the subject of topical amiodarone requires further study, limiting its routine use at present.

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<http://dx.doi.org/10.1016/j.jtcvs.2015.10.007>

CONSIDERATIONS FOR THE SUCCESS OF TOPICAL AMIODARONE TO PREVENT POSTOPERATIVE ATRIAL FIBRILLATION

Reply to the Editor:

My coauthors and I thank Beau and Kulik for their letter and for their efforts to address this significant problem in cardiothoracic surgery—specifically, postoperative atrial fibrillation. I applaud the investigators for their attempts to corroborate results from clinical studies such as ours, because this is a critical to the scientific

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