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See Article page 1803.

Commentary: Postoperative atrial fibrillation: "No magic bullet"

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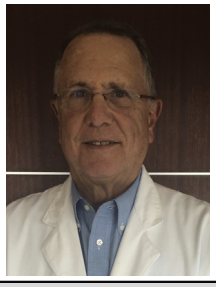

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CENTRAL MESSAGE

Only by considering the risk of postoperative atrial fibrillation in each patient and pursuing a holistic strategy are we likely to make a dent in the 30% incidence rate.

In this issue of the *Journal*, Almassi and colleagues[1] reference a 2012 article[2] analyzing a subgroup of the Veterans Affairs Randomized On/Off Bypass follow-up study (ROOBY-FS).[3] In 2012, Almassi's group compared patients who developed atrial fibrillation during the hospitalization for the index procedure—postoperative atrial fibrillation (POAF)—and those who did not. They had previously reported risk-adjusted poorer outcomes and increase cost at a 1-year follow-up in patients who developed POAF.[4] When analyzed at 5 years, these differences were not evident. There were no differences in the incidence of POAF between on-pump and off-pump coronary artery bypass. Beyond the first year, there were no differences in cost between those who developed POAF and those who did not. Almost all the increased cost at 1 year was attributed to those costs associated with the occurrence of POAF during the original hospitalization. As noted in the unadjusted data, the POAF group was older and had more complex comorbidities. This increased risk has also been demonstrated in other studies.[5]

By risk-adjusting the data, this study sheds more light on the patient population that is at increased risk for the development of POAF. They are older and have more comorbidities, and it is evident from this and other studies[5,6] that the burden surrounding POAF occurs during index hospitalization and the early postdischarge period.

Over the last 3 decades, the incidence of POAF has remained near 30% despite overall improvements in outcomes and postoperative care.[6] There have been many attempts to identify the single intervention that will have a major impact on this. These include both pharmacologic and operative interventions.

Operative modifications that have been tried include posterior pericardiotomy, left atrial appendage exclusion, and anterior fat pad preservation.[7-9] These have not proven effective. Left atrial appendage exclusion may increase the rate of POAF.[6,10] Atrial and biatrial pacing have been studied, with mixed results.[11]

The administration of beta blockers is the only class 1a indicated pharmacologic intervention for the prevention

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of POAF with 82% of patients undergoing cardiac surgery receiving them.[12] The use of amiodarone for prevention of POAF has been shown to be effective in a large review of multiple clinical studies.[13]

It is clear that the burden of POAF is concentrated in the recovery period, and that is where our efforts should be focused. Is there any hope of changing this constant rate of POAF? Looking for the magic bullet seems to have failed. Perhaps a programmatic quality approach to this problem should be considered. First, we need to identify the patients at higher risk for the development of POAF, as identified in this and other studies. These include older patients, patients with more comorbidities, and patients requiring more complex procedure. The risk of POAF and its morbidity and high cost should be considered when deciding between surgery and less invasive transcatheter therapies. Converting complex procedures to less invasive hybrid strategies may be considered. These include hybrid coronary artery bypass and hybrid minimally invasive valve surgeries. Adding amiodarone to the pharmacologic regimen is likely to be effective when surgery is the best option for these patients at high risk for POAF.

Only by considering the risk of POAF in each patient and perusing a holistic strategy are we likely to make a dent in the 30% incidence rate, and as stated in the article, "future quality improvement strategies should focus primarily upon the preoperative and perioperative strategies to lessen the burden of POAF, and post-discharge care of POAF patients within the first post-CABG year period to potentially improve early postoperative clinical outcomes and costs."

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