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Amiodarone and cardiac surgery

To the Editor:

The recent publication of a large randomized trial of amiodarone arrhythmia prophylaxis after cardiac surgery (PAPABEAR) is of great interest.[1] It was striking how similar the results of this trial were to our previous observational analysis of perioperative amiodarone during mitral valve repair,[2] and a detailed comparison raises several points. First, both studies concluded that amiodarone was effective, reducing postoperative atrial arrhythmias by half and virtually eliminating mortality from ventricular arrhythmias. Second, serious complications of a brief perioperative administration were rare. In PAPABEAR, bradycardia requiring dose reduction occurred in 5.7% of cases and was considered a side effect. In clinical practice, however, postoperative bradycardia can be managed easily with transient atrial pacing, and reduction to a low discharge dose is routine. Third, only low-risk patients undergoing elective procedures were randomly assigned in PAPABEAR, which limited event rates and statistical power to define other clinical benefits, similar to the AFIST trial.[3] The use of large national databases for such studies could allow better sample sizes and would certainly be less costly. The patients most likely to achieve absolute event reductions are those at the very highest risk (ie, those most prone to nonfatal and fatal arrhythmias). Those patients often undergo operation on an emergency basis and thus are not candidates for a prolonged preoperative oral protocol.

In the acute setting, 12 hours of standard intravenous loading (150-mg intravenous bolus followed by 1-mg/min intravenous infusion for 6 hours and then 0.5-mg/min intravenous infusion) performs well,[2] similar to the "hybrid" protocol of AFIST II.[4] The infusion is continued postoperatively, and additional 150-mg bolus doses are administered aggressively for persistent sinus tachycardia or the appearance of arrhythmias. Dose reductions are prompted by (1) observed lengthening of the P-R or Q-T interval or (2) reduction in the underlying sinus rate to 70 to 80 beats/min. Oral amiodarone is begun on the first postoperative day at 400 mg orally every 6 hours, and the intravenous agent is overlapped for 24 hours. Then, the oral dose is progressively reduced to 200 mg orally twice daily at discharge, again guided by optimizing the sinus rate to 70 to 80 beats/min. If the sinus rate is especially sensitive to the drug, the discharge dose can be reduced all the way to 100 mg orally daily. The discharge dose is continued orally for 3 to 4 weeks after surgery to prevent the occasional "late breakthrough" and then stopped abruptly, because amiodarone has a prolonged effect after discontinuation. If sinus tachycardia is difficult to control, very low doses of β-blockers can be added with synergistic effect.

After using this approach for more than 10 years,[2] it is now routine for all cardiac procedures, with a clinical experience that parallels PAPABEAR. Absolute benefits, however, are even more impressive in high-risk patients. Aggressive and routine arrhythmia prophylaxis with this safer and more effective agent has been a major advance in the care of cardiac surgical patients. This approach could significantly reduce the current rate of postoperative arrhythmias, which have occurred in as many as a third of cardiac patients in recent series.[5]

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