The evidence for routine anti-arrhythmic prophylaxis in patients undergoing pulmonary resection surgery

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We read with great interest the paper by Riber et al. [1] regarding the use of a hybrid intravenous bolus (300 mg after surgery) plus a 5-day oral prophylactic amiodarone (600 mg twice daily) regime as a way of preventing postoperative atrial fibrillation (AF) after lung cancer surgery. This is based on their notable experience of 254 cases randomized through a well-designed double-blinded, placebo-controlled trial, whereby 122 and 120 patients were allocated to receive amiodarone and placebo prophylaxis, respectively. The PASCART trial which produced the data for this paper showed a 23% reduction of AF in the active prophylactic arm [2]. The authors have discussed some points which are worth emphasizing.

In cardiac surgery, there has been significant research into the use of amiodarone and other anti-arrhythmics in preventing postoperative AF, notably commenting on its high efficacy and safety profile. This fuelled the similar move to explore the efficacy of said anti-arrhythmics following pulmonary resection. Many strategies have been explored; of note, Amar et al. [3] have shown through randomized, double-blinded, placebo-controlled data that diltiazem almost halved the incidence of clinically significant postoperative atrial arrhythmias (P = 0.023) following pulmonary resection surgery. Furthermore, alternate amiodarone strategies have been trialled, whereby low-dose oral amiodarone prophylaxis was given to a treatment arm throughout the length of their hospitalization. This produced a significant reduction in the incidence of AF postoperatively (P = 0.0253) [4]. Interestingly, this treatment regime showed promising results in terms of cost and would warrant further randomized, prospective investigation to ascertain if it is more cost effective by comparison with the regime utilized in the PASCART trial.

Tisdale et al. [5] demonstrated that amiodarone prophylaxis reduced the length of intensive care unit stay (P = 0.03); however, we would agree with Riber et al. in that the Tisdale study was limited by the lack of the double-blinded and placebo-controlled elements. However, there is a discrepancy in the active prophylaxis regime between the two studies in terms of drug amount, timing of administration and length of course; Tisdale’s group administered 1050 mg as a continuous infusion for 24 h at the time of induction followed by a 400-mg twice daily oral course for the length of hospitalization up to a maximum of 6 days [5]. This is unlikely to impact significantly on postoperative stay, but should be considered nonetheless.

Finally, we would like to draw upon the notion of patient selection; Riber et al. note that age is a significant prognostic factor in postoperative patients. With particular reference to the incidence of postoperative arrhythmia, the extent of pulmonary resection, intrapericardial pneumonectomy and mediastinal dissection all play a consistent role as stand-alone risk factors [6]. Given the evidence behind numerous anti-arrhythmic agents for preventing postoperative AF, the identification of high-risk patient subsets is warranted such that particular classes of anti-arrhythmic can be tailored to these groups, thus optimizing on cost and patient safety.

We conclude by congratulating the authors on their promising results relating to cost efficacy in particular, through meticulous design of their randomized controlled trial.

REFERENCES