Perioperative predictors of atrial fibrillation

To the Editor,

We have read with great interest the article entitled “Postoperative atrial fibrillation prediction following isolated surgical aortic valve replacement” in the current issue of the journal (1). In this study, authors aimed to determine pre- and perioperative risk factors in patients undergoing surgical aortic valve replacement and to design a model that can predict the postoperative arrhythmic event.

They found that age, diabetes mellitus, increased preoperative creatinine levels, and increased LA volume were associated with postoperative atrial fibrillation (AF). Intraoperative variables, such as cross clamp and cardiopulmonary bypass times, which are very important for AF, were not associated with postoperative AF. We see that variables associated with AF by the authors are mostly preoperative variables. They also reported that prolonged ventilation, stroke, neurological complications, and acute renal failure showed significant differences in the AF group. When we consider all of these results in the study, we believe that postoperative AF is mostly associated with postoperative inflammatory problems, which is not enough to design a model that can predict the postoperative arrhythmic event with preoperative variables as in this study. Otherwise, inflammatory markers must be added to predict postoperative AF. They reported that multivariate analysis identified high arrhythmic risk for advanced age, body mass index, moderate tricuspid regurgitation, prolonged ventilation, longer intensive care unit stay, and increased LA volume. We think that we must exclude patients with prolonged ventilation, longer intensive care unit stay, acute kidney injury, and neurological complications from the AF group because these variables are postoperative problems that cause AF in this study group. If authors want to design a model that can predict the postoperative arrhythmic event, then they need a standardized patient population between with and without AF group. We are also in the opinion that, currently, it is not enough to design a model to predict postoperative AF without perioperative inflammatory markers, such as CRP and interleukins.

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gers for AF (as the main substrate for AF). However, the pathophysiology of POAF is unclear. Therefore, a better preoperative control of factors incriminated as substrate in POAF could be very important. For example, the use of statins is associated with a 22%–34% lower risk of POAF (3).

In the third line, we have noted the following statements in study limitations (1): “The underlying mechanisms of POAF are yet to be determined. Future models should include parameters of the inflammatory response and other new variables derived from these findings.” Also, in discussions, we have noted the following: “In our opinion, future studies should include variables that describe the inflammatory response to surgery, such as C-reactive protein or interleukin 6.” We understand that authors of this letter agree with us.

Finally, the suggestion “to select a standardized patient population between with and without AF group” is not in accordance with the patient population with need for SAVR in real life. However, estimating individual risks for POAF in patients undergoing SAVR is important for applying prophylactic strategies only in patients with high arrhythmic risk, thereby avoiding excessive cost and unwanted side effects in low-risk individuals. Therefore, we consider that our tree model based on chi-squared automatic interaction detection for patients with POAF is very important.

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