

Preoperative atrial fibrillation in patients undergoing cardiac surgery: Gender versus other factors. Authors' reply

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We greatly appreciate the comments on our recent publication investigating sex differences in long-term survival following cardiac surgery in patients with pre-operative atrial fibrillation (AF) [1] by Drs Engin and Yavuz [2].

Certainly, the duration of pre-operative AF and type of performed cardiac surgery might affect prognosis. However, one of the previously listed limitations of the KROK Registry is lack of data on the exact type of AF and detailed information on the conversion to sinus rhythm during follow-up [3].

We note that there were numerically higher rates of surgical ablation (SA) in women (15.2% vs. 13.3%; $P = 0.056$) in our cohort, and the fact that the evidence regarding sex-related differences in patients undergoing SA is limited. Shah et al. [4] found that women undergoing surgical correction of AF are older and more frequently suffer from heart failure, although there were no differences in survival after adjustments. According to previous research investigating disparities between men and women undergoing catheter ablation, women undergoing ablation are older, are more likely to have paroxysmal AF, and are at greater risk of peri-procedural complications and recurrence of arrhythmia, with no difference in all-cause mortality [5, 6].

In order to investigate this topic thoroughly in the registry, we have now conducted further analyses focusing on patients undergoing SA ($n = 696$; 41% undergoing concomitant coronary artery bypass grafting).

Visual inspection shows a worse prognosis in women, which is limited only to the first year after the procedure with curves crossover and no significant differences in survival during the overall follow-up time (log-rank $P = 0.1$). In Cox's proportional hazard regression, there were no significant differences during 90-day follow up (hazard ratio [HR] 1.48; 95% confidence interval [CI], 0.78–2.8; $P = 0.23$), or at one year (HR 0.92; 95% CI, 0.58–1.48; $P = 0.74$), or at two years (HR 0.81; 95% CI, 0.53–1.26; $P = 0.36$).

Our results indicate that SA might influence differences between men and women in long-term survival. However, due to the relatively small analyzed group, the findings should be considered only as hypothesis-generating, and should guide further research that includes subgroup investigations, especially based on the pre-operative AF type and the post-procedural conversion to sinus rhythm.

The potential sources of disparities in survival between men and women are certainly multi-factorial. Firstly, men have significantly higher rates of most major comorbidities and are more frequently referred for urgent procedures. The higher rates of urgent surgery might have influenced the lower rates of both SA and left atrial appendage occlusion in men, as these procedures often require prolongation of cardio-pulmonary bypass time. We noted a remarkable increase in the rates of left atrial appendage occlusion reported in the KROK Registry during the observation,

reaching 22.9% in the last full year. In our study, women had higher rates of post-operative complications, which has also been reported previously and may be related to anatomical and hormonal differences, and may subsequently result in impaired short-term survival. Women may also benefit from better compliance with healthcare professionals' advice, and more adoption of long-term lifestyle modifications and of disease control strategies such as rehabilitation, mitigation of risk factors and secondary prevention, which may be reflected in the curves crossover two years after the index procedure. Finally, the impact of exposome should not be underestimated, as it has been shown that the influence of environmental factors differs between men and women [7].

Article information

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