New-onset perioperative atrial fibrillation in cardiac surgery patients

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New-onset perioperative atrial fibrillation in cardiac surgery patients: transient trouble or persistent problem?—Authors’ reply

We are grateful for the opportunity to respond to the questions raised in Dr Kaur’s letter.1 Previously, our group showed that atrial fibrillation (AF) in the first days after cardiac surgery is associated with high AF recurrence rate during the first days after cardiac surgery.2

References


Hargun Kaur1, Emilie P Belley-Côte2,3,4, and William F McIntyre2,3,4
1 Faculty of Health Sciences, McMaster University, 1280 Main St W, Hamilton, ON L8S 4L8, Canada; 2Department of Health Research Methods, Evidence and Impact, McMaster University, 1280 Main St W, Hamilton, ON L8S 4L8, Canada; 3Population Health Research Institute, 237 Barton St E, DBV5RI C3-13A, Hamilton, ON L8L 2X2, Canada and; and 4Division of Cardiology, Department of Medicine, McMaster University, 1280 Main St W, Hamilton, ON L8S 4L8, Canada

*Corresponding author. Tel: +1 905 521 2100, ext: 40414; fax: +1 905 297 3786.
E-mail address: William.McIntyre@phri.ca

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1 Faculty of Health Sciences, McMaster University, 1280 Main St W, Hamilton, ON L8S 4L8, Canada; 2Department of Health Research Methods, Evidence and Impact, McMaster University, 1280 Main St W, Hamilton, ON L8S 4L8, Canada; 3Population Health Research Institute, 237 Barton St E, DBV5RI C3-13A, Hamilton, ON L8L 2X2, Canada and; and 4Division of Cardiology, Department of Medicine, McMaster University, 1280 Main St W, Hamilton, ON L8S 4L8, Canada

*Corresponding author. Tel: +1 905 521 2100, ext: 40414; fax: +1 905 297 3786.
E-mail address: William.McIntyre@phri.ca

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We are grateful for the opportunity to respond to the questions raised in Dr Kaur’s letter.1

Previously, our group showed that atrial fibrillation (AF) in the first days after cardiac surgery is associated with high AF recurrence rate during
long-term continuous rhythm follow-up suggesting that postoperative AF (POAF) is not limited to the perioperative phase. Based on these findings, two relevant questions regarding the long-term management of patients with POAF arise.

Firstly, it remains unclear how long patients with early-POAF (POAF during first 5 postoperative days) should be monitored for AF recurrences. We demonstrated that 67% of early-POAF patients also developed late POAF and that almost 80% of patients developed their first AF episode within the first postoperative month. Therefore, the first postoperative month is a crucial period for strict rhythm monitoring in patients undergoing cardiac surgery. In addition to clinically available Holter electrogram monitoring, photoplethysmography recording, or handheld devices are promising tools for this purpose.

Secondly, it is unclear what duration of AF warrants initiation of lifelong anticoagulation. New-onset POAF after coronary artery bypass grafting has been identified as an independent predictor of stroke, myocardial infarction, and death during prolonged period of follow-up, and subclinical AF has been detected in 30% of patients with cryptogenic stroke. On the other hand, a recent study reported no significant risk reduction for stroke or systemic embolism in patients screened with an implantable loop recorder (ILR) as compared to usual care. In this study, oral anticoagulant (OAC) was initiated in 29.7% of patients with ILR compared to 13.1% in the non-ILR group, suggesting that only clinically manifested AF, requires OAC. Accordingly, the ASSERT trial reported that only patients with longest episodes of subclinical AF (SCAF) (>24 h) had an increased risk of thromboembolic stroke as opposed to patients with shorter SCAF. Nevertheless, silent stroke was not considered in these studies and others have demonstrated SCAF as an independent predictor of silent ischaemic brain lesions in patients without clinical AF.

Notably, we also demonstrated that patients developing POAF had complex electrical conductivity patterns during electrically induced AF. In addition, POAF patients had prolonged PR interval and enlarged right atrium, suggesting a more pronounced atrial structural remodelling as compared to patients without POAF, which may develop into a substrate for clinical AF. This is in line with previous studies demonstrating POAF as an independent predictor of clinical AF development.

In conclusion, continuous rhythm monitoring during the first postoperative month after cardiac surgery identifies many patients at risk of developing late POAF recurrences. However, the clinical impact of late POAF and subclinical AF in general population remains unclear. Circumstantial evidence suggests that longer episodes increase the risk of stroke, and POAF may also reflect early structural remodelling resulting in increased risk of AF development. Future studies should focus on the potential benefit of OAC in (silent) stroke prevention in subgroups of patients with late POAF and efforts should be undertaken to apply substrate modification and risk factor reduction in this potentially vulnerable population.

Conflict of interest: none declared.

References

Michal J Kawczynski 1,2,3, Stef Zeemering 2,3, Martijn Gilbers 2, Aaron Isaacs 1,3, Sander Verheule 2,3, Matthias D Zink 2, Bart Maesen 1,2,3, Sander Bramer 4, Isabelle C Van Gelder 5, Harry J M Crijns 5,6, Ulrich Schotten 2,3, and Elham Bidar 1,2,3,*

1Department of Cardiothoracic Surgery, Heart and Vascular Centre Maastricht University Medical Centre, Professor Debelyaan 25, 6229HX Maastricht, The Netherlands; 2Department of Physiology, Maastricht University, Maastricht, The Netherlands; 3Cardiovascular Research Institute Maastricht (CARIM), Maastricht, The Netherlands; 4Department of Cardiothoracic Surgery, Amphia Hospital, Breda, The Netherlands; 5Department of Cardiology, University of Groningen, University Medical Centre Groningen, Groningen, The Netherlands; and 6Department of Cardiology, Maastricht University Medical Centre, Maastricht, The Netherlands.

*Corresponding author. Tel: +31 433872727. E-mail address: elham.bidar@mumc.nl

Letters to the Editor