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LETTER TO THE EDITOR

Clarifying the association between high-sensitivity C-reactive protein and atrial fibrillation recurrence: A comprehensive response

To editor,

We extend our sincere gratitude to Imamura and colleagues for their thought-provoking commentary on our recent study delving into the intricate association between high-sensitivity C-reactive protein (hs-CRP) and the recurrence of atrial fibrillation (AF) postcatheter ablation.[1] Their inquiries, which delve into the causality between hs-CRP and the recurrence of AF after catheter ablation, provide an important opportunity to clarify and expand upon key aspects of our research.

In response to their astute observations, we acknowledge the paramount importance of considering the baseline duration and burden of AF for cohort homogeneity. While the meta-analysis approach was chosen for its alignment with the existing data landscape and the overarching research question, we appreciate the suggestion to explore a pooled analysis in future projects. This proactive consideration aligns with our commitment to refining methodologies to enhance cohort homogeneity and foster robust scientific inquiry.

In our study, hs-CRP emerges as a pivotal inflammatory factor intricately associated with inflammation and the development of AF.[2] Existing literature has proposed a cascade wherein inflammation triggers "atrial myocarditis," subsequently inducing electrical and structural changes in the atria, thereby initiating and perpetuating AF.[3] The measurement of acute-phase proteins, exemplified by hs-CRP, serves as a valuable window into a patient's prevailing inflammatory status.[4] Our rationale for selecting hs-CRP as a therapeutic target lies in its proven association with AF, coupled with its cost-effectiveness and widespread availability. The intention was to leverage a practical and widely accessible biomarker, eschewing more complex alternatives, to ensure broad applicability and relevance in clinical settings.

Furthermore, our investigation underscores that hs-CRP exhibits a more pronounced association with AF recurrence compared with other readily available yet cost-effective biomarkers such as white blood cell count or uric acid. Simultaneously, it surpasses the predictive utility of more sophisticated biomarkers, including interleukin-6 and tumor necrosis factor-α.[5] This nuanced differentiation adds depth to our understanding of the distinctive attributes of hs-CRP in predicting AF recurrence after catheter ablation.

Addressing the suggestion to exclude patients with pulmonary vein reconnection, we appreciate the intriguing nature of this idea. Regrettably, the data available in the included manuscripts for our meta-analysis did not provide information on pulmonary vein reconnection. Nonetheless, we find the proposal compelling and plan to meticulously explore its implementation in forthcoming prospective studies. This approach aims to provide more detailed insights into our research, enabling a closer examination of the connection between hs-CRP and AF recurrence.

Shifting our focus to the link between hs-CRP and AF recurrence, we appreciate Imamura and colleagues' thoughtful considerations. It is crucial to clarify that our study aimed to establish an association, not imply direct causation. Given the observational nature, our emphasis on hs-CRP as a potential marker highlights its role in indicating an association with AF recurrence, not as a definitive culprit. We agree with the need for ongoing research and discussions to untangle complexities in establishing causative mechanisms in cardiovascular health.

KEYWORDS

atrial Fibrillation, catheter ablation, hs-CRP

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CONFLICT OF INTEREST STATEMENT

Authors declare no conflict of interests for this article.

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