

Impact of New-Onset Atrial Fibrillation on Mortality in Critically Ill Patients [Letter]

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Dear editor

We are interested in the recent research entitled “Impact of New-Onset Atrial Fibrillation on Mortality in Critically Ill Patients”, which was published in the journal of Clinical Epidemiology.¹ This article examined the impact of new-onset atrial fibrillation (AF) on mortality in a critically ill population. This study identified 48018 adult patients admitted to the ICU from the Medical Information Mart for Intensive Care (MIMIC)-IV database. The study found that in critical patient, new-onset AF was associated with an increased risk of mortality compared with preexisting AF or no AF.

However, some aspects deserved consideration.

Firstly, the effect of the type of surgery on the incidence rate was not mentioned in the included data. The incidence of new-onset atrial fibrillation after cardiac surgery is higher than that after other non-cardiac surgery. It has been reported that the incidence of postoperative new-onset AF has been reported to be 8% in patients undergoing non-cardiac surgery and can range from 16% to 46% in patients undergoing cardiac surgery.^{2,3} Is there a difference in the impact of mortality between cardiac and noncardiac surgery in patients with new-onset AF?

Secondly, the influencing factors of drugs were not reflected in the study. Studies have reported that the use of pressor or inotropic agents in patient in critical condition can induce new-onset AF.⁴

Thirdly, the study found that patients with heart failure(HF) had a higher rate of new AF and an increased mortality rate. However, there was no comparison based on different types of HF and cardiac function classification. Elevated N-terminal pro-brain natriuretic peptide (NT-proBNP) is a major risk factor for new-onset AF after cardiac surgery,⁵ It is suggested to compare the effect on mortality according to different NT-proBNP levels.

Fourth, the authors' study did not address the impact of the ventricular rate of new-onset AF and duration of new-onset AF on critical patient mortality. Ventricular rate below 80 BPM has less impact on hemodynamics, less negative impact on cardiac function, and may have less impact on critical patient mortality.

There were significant differences in the types and severity of the patient in critical condition included in the study, and there was significant heterogeneity among the subjects, which also affected the judgment of the results to a certain extent. And it could not be determined that there was a direct causal relationship between new-onset AF and the increased risk of death, so more clinical studies will need to evaluate the prognostic impact of new-onset AF on patients in critical condition in the future.

Abbreviations

AF, atrial fibrillation; MIMIC, Medical Information Mart for Intensive Care; HF, heart failure; NT-pro BNP, N-terminal pro-brain natriuretic peptide.

Disclosure

The author reports no conflicts of interest in this communication.

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