Risk of ischemic stroke in patients with acute myocardial infarction and new atrial fibrillation: a nationwide analysis

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Background: In patients with acute myocardial infarction (AMI), history of atrial fibrillation (AF) and new onset AF during the early phase may be associated with a worse prognosis. Whether both conditions are associated with a similar risk of stroke and should be similarly managed is a matter of debate.

Methods: Based on the administrative hospital-discharge database, we collected information for all patients treated with AMI between 2010 and 2019 in France. The adverse outcomes were investigated during follow-up.

Results: Among 797,212 patients with STEMI or NSTEMI, 146,922 (18.4%) had history of AF, and 11,824 (1.5%) had new AF diagnosed between day 1 and day 30 after AMI. Patients with new AF were older and had more comorbidities than those with no AF but were younger and had less comorbidities than those with history of AF. Both groups with history of AF or new AF had less frequent STEMI and anterior MI, less frequent use of percutaneous coronary intervention but more frequent HF at the acute phase than patients with no AF. During follow-up (mean [SD] 1.8 [2.4] years, median [interquartile range] 0.7 [0.1–3.1] years), 163,845 deaths and 20,168 ischemic strokes were recorded.

Using Cox multivariable analysis, compared to patients with no AF, history of AF was associated with a higher risk of death during follow-up (adjusted hazard ratio HR 1.06 95% CI 1.05–1.08) while this was not the case for patients with new AF (adjusted HR 0.98 95% CI 0.95–1.02). By contrast, both history of AF and new AF were associated with a higher risk of ischemic stroke during follow-up compared to patients with no AF: adjusted hazard ratio HR 1.29 95% CI 1.25–1.34 for history of AF, adjusted HR 1.72 95% CI 1.59–1.85 for new AF. New AF was associated with a higher risk of ischemic stroke than history of AF (adjusted HR 1.38 95% CI 1.27–1.49).

Conclusion: In a large and systematic nationwide analysis, AF first recorded in the first 30 days after AMI was associated with an increased risk of ischemic stroke. Specific management should be considered in order to improve outcomes in these patients after AMI.