Evidence That D-Dimer Levels Predict Subsequent Thromboembolic and Cardiovascular Events in Patients with Atrial Fibrillation during Oral Anticoagulant Therapy

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Objectives: The aim of the present study was to evaluate whether elevated D-dimer levels can predict subsequent thromboembolic and cardiovascular events in patients with atrial fibrillation during oral anticoagulant therapy.

Background: Atrial fibrillation is associated with hemostatic abnormalities even during oral anticoagulant therapy. D-dimer levels reflect a prothrombotic state, and thus might serve as a marker of thromboembolic and cardiovascular events.

Subjects and Methods: This was a single center, prospective, observational study. Patients with atrial fibrillation (269 patients, 74±9 y/o, 160 paroxysmal atrial fibrillation) treated with warfarin (target PT-INR: 1.5-3.0) were included. D-dimer levels were measured to assess the relationship of this parameter with subsequent thromboembolic and cardiovascular events. End points were thromboembolic events and combined cardiovascular events (thromboembolic events, cerebral hemorrhage, myocardial infarction, cardiovascular death).

Results: D-dimer levels were elevated (≥0.5 μg/ml) in 63 (23%) patients. During an average follow-up period of 756±221 days, 10 (1.8%/year) thromboembolic events (8 ischemic strokes, 1 transient ischemic attack, and 1 peripheral embolism) and 27 (4.8%/year) combined cardiovascular events (10 thromboembolisms, 9 deaths from heart failure, 3 sudden deaths, 2 myocardial infarctions, and 3 cerebral hemorrhages) occurred. Patients with elevated D-dimer levels experienced higher thromboembolic and combined cardiovascular events. Cox proportional hazard model revealed that elevated D-dimer levels were associated with both thromboembolic (p<0.01, Hazard ratio 15.8, CI: 3.33-75.5) and combined cardiovascular (p<0.01, Hazard ratio 7.64, CI: 3.42-17.1) events.

Conclusion: D-dimer might be a useful marker of both thromboembolic and cardiovascular events in patients with atrial fibrillation during oral anticoagulant therapy.

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