



Pivotal roles of risk factors for incident atrial fibrillation in patients with newly diagnosed hyperthyroidism

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To the Editor

We have read with great enthusiasm the recently published article entitled “Association of inflammation with atrial fibrillation (AF) in hyperthyroidism” by Ozaydin and coworkers.^[1] In that very well-designed study, Ozaydin and coworkers tried to evaluate the relationship between serum levels of high-sensitivity C-reactive protein (HsCRP), as a marker of inflammation and the development of AF in patients with hyperthyroidism. They concluded that HsCRP, an indicator of inflammation, free T4 and left atrial (LA) diameter are associated with the development AF in patients with hyperthyroidism.

AF is the most commonly encountered cardiac arrhythmia, and is expected to affecting millions of people world-wide. AF is a complex condition with several possible contributing factors. It is an arrhythmia with a very clearly observed predisposition for the aged patients.^[2] Hyperthyroidism is a relative uncommon but important cause of AF. AF occurs in up to 15% of patients with hyperthyroidism compared to 4% of people in the general population and is more common in men and in patients with hyperthyroidism.^[3] Several potential mechanisms could be considered for the effect of thyroid hormones on AF risk, including elevation of LA pressure secondary to increased left ventricular mass and impaired ventricular relaxation, ischemia resulting from increased resting heart rate, and increased atrial eopic activity.

AF is responsible for considerable morbidity and mor-

tality, making identification of modifiable risk factors a priority. Obesity has been associated with increased risk of AF.^[4] Chronic kidney disease was a powerful predictor of new-onset AF in hypertensive patients, independently of left ventricular hypertrophy and LA dilatation. Proteinuria was also apparently linked to the AF.^[5] On the other hand, elevated transaminase concentrations are related to increased risk of AF.^[6] Besides, it has been proved that the people with a clinically recognized myocardial infarction (MI) are at increased risk for AF. Unfortunately, a large proportion of all MI remains to be clinically unrecognized. The presence of an unrecognized MI was associated with a double increased risk of AF in men, independent of known cardiovascular risk factors.^[7] NT-proBNP correlated well with the development of AF in rat model.^[8] Moreover, it was demonstrated that several hemostatic markers are associated with the incidence of AF independently of other cardiovascular risk factors.^[9]

In the previous large population-based study, greater levels of serum phosphorus and the related calcium-phosphorus product were found to be associated with a increased risk of AF.^[10] Bisphosphonate use was associated with a significant increase in the risk of serious AF in postmenopausal women.^[11] In another interesting study, Chao *et al.*^[12] found that recent non-steroidal anti-inflammatory drugs use may predispose to AF patients.

In a word, HsCRP, free T4 and LA diameter are associated with the development of AF as presented in the current study. However, risk factors for incident AF are very complex and the pivotal roles of those risk factors deserve further large-scale prospective randomized clinical trials.

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