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Et al.

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Role of TSH and excess Heart Age in Predicting Atrial Fibrillation Recurrence Post-Ablation

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Background: The association between atrial fibrillation (AF) and thyroid disease as defined by thyroid stimulating hormone (TSH) is established in literature. However, the relationship between TSH and recurrence of AF post ablation has not been established.

Methods: We studied 207 patients (60.54±9.39yrs, 35.7% female) with persistent or paroxysmal AF who underwent either Cryo or RFA ablation between April 2011 and Jan 2015 at our center. Patients were stratified into hypothyroid (TSH >4.5 U/mL), euthyroid (TSH 0.5-4.5 U/mL) and hyperthyroid (TSH <0.5 U/mL) based on pre procedure testing. Heart age was computed based on Framingham risk factors. Excess heart age was defined as the difference between actual age and heart age. Logistic regression and cox-proportional hazards model were implemented using R statistical software (v3.2.0).

Results:

There was a statistically significant lower rate of AF recurrence among male patients (OR 2.92, p=0.003). In univariate analysis, there was no statistically significant relationship between TSH and incidence of AF recurrence (OR 1.05, p=0.74). Cox proportional hazards models did not show an association between recurrence and TSH states (HR 0.85, p=0.74 for hypothyroid and HR 0.75, p=0.56 for hyperthyroid).

Conclusions: This exploratory showed that TSH may not play a role in AF recurrence. While there is a tendency towards an association between TSH and AF recurrence, this was not statistically significant. We hypothesize that overt hyperthyroidism prior to ablation will not increase chance of recurrence. This was true after adjustment for Framingham risk factors. The limitation of this study was the small sample size of the patients with TSH in the hyperthyroid range. Further analysis using larger dataset is indicated.

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