Modified Hatch Score Predicts 6-Month Recurrence of Atrial Fibrillation after Pulmonary Vein Isolation: Data from the University Of Massachusetts Atrial Fibrillation Registry

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Abstract

AIMS:

Pre-procedural identification of patients with atrial fibrillation (AF) who will benefit most from pulmonary vein isolation remains challenging. The HATCH score [Hypertension x1 + Age≥75 x1 + Thrombo-embolic event x2, COPD x1, Heart failure x2] has been associated with progression of AF and recently with adverse outcomes after catheter ablation. However, data regarding the HATCH score are limited. This study aimed to evaluate the performance of a modified HATCH scoring system, including pre-procedural obstructive sleep apnea as an additional risk element, compared to the CHADS risk score as a predictor of AF recurrence after an index pulmonary vein isolation procedure for AF.

METHODS AND RESULTS:

Seventy eight patients (48 men, mean age 60 ± 1.1 years) with paroxysmal or persistent AF underwent an index pulmonary vein isolation procedure between 2010 and 2014 using either radiofrequency (n=64) or cryoballoon (n = 14). Over a 6-month follow-up period, 35 patients had recurrence (44.9%) when monitored using Holter monitoring and in-office ECGs. The modified HATCH score was associated on univariate testing with AF recurrence. In multivariate logistic regression analyses including factors known to be associated with AF recurrence, the modified HATCH score (p: 0.03) was independently associated with AF recurrence and showed superior test characteristics using ROC curve analysis (C statistic = 0.64 for modified HATCH vs. 0.55 for CHADS2). The difference between the modified HATCH and the CHADS2 scores in predicting recurrence was not statistically significant (p = 0.8).

CONCLUSIONS:

AF recurred in 44% of patients over a 6-month follow-up. A modified HATCH including OSA successfully identified individuals at risk for 6-month recurrence. Further research is needed including larger cohorts of patients undergoing ablation and followed for more extended periods to further validate the performance of the modified HATCH score.