P1006

Cryo-balloon ablation in elderly; Outcome and prediction of recurrence

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Background: It is well known that prevalence of atrial fibrillation correlates with age, however the data on ablation of atrial fibrillation in elderly patients is poor. Aim of this study was analysis of outcome and prediction of recurrence after cryo-balloon ablation (CBA) in elderly patients based on available data in our registry.

Methods: The history of AF was assessed at admission. Additionally, all patients received echocardiographic examination and blood test. After a single trans-septal access and PV angiography PVI was performed using a 28-mm CBA. Mapping of PV signals before, during, and after each cryo application was performed with a 3F lasso catheter. The procedural endpoint after PVI was defined as complete elimination of all fragmented signals at the PV antrum with verification of entrance and exit block. Primary endpoint was first documented recurrence of AF, atrial tachycardia or atrial flutter (>30 sec.). All patients received a follow-up every 3 month within 1st year, once yearly thereafter and in case of symptoms. Seven days Holter ECG was recorded by every follow up.

Results: A total of 44 (39%) of enrolled patients were male, 48 (43%) suffered non- paroxysmal AF(nPAF), 93 (82%) had hypertension, CAD was diagnosed by 27 (24%), 28 (25%) had DM (Hb1AC > 6), Stroke/TIA was observed in 11 (10%). Median Age in elderly was 76 (75-78) y, BMI 25.77 (23.51-28.69), time since 1st diagnosis 40 (6-50) month, LA area index 11.36 (9.77-13.20), TAPSE 23 (19-26), GFR 74 (66-83) mL/min, LVEF 60 (57-62). A total of 44 patients (39%) reached endpoint within follow up of 20 (12-38) months. Univariate association with outcome was found by follows parameter: Time from 1st diagnosis > 3 y (HR = 3.22 (1.66-6.27), p=.001); LA area index (HR = 1.17 (1.03-1.32), p=.013); DM (HR = 1.89 (1.02-3.55), p=.042); nPAF (HR = 1.90 (1.04-3.47), p=.036). After multivariate analysis only time from 1st diagnosis > 3 y, (HR= 3.17 (1.62-6.16), p=.001 and nPAF (HR = 1.84 (1.01-3.36)), p=.048 were revealed to be predictive. The area under probability score calculated for these predictors was .731 (.638-8.25), p=.001. Follows complications were observed: 2 (2%) - pericard tamponades, 4 (4%) phrenicus nerve injury. Conclusion. PVI with cryo-balloon is effective for elderly patients providing freedom of arrhythmic events in 61% of patients. Longer history of AF over 3 years since 1st diagnosis was main predictor for post ablation recurrence. In elderly patients with shorter history of AF efficiency and safety of CBA is comparable with general population.