EP4_90

Atrial Fibrillation is associated with Increased Rates of Tricuspid Regurgitation: A Community Based Study

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Background:
Atrial fibrillation (AF) is the most common arrhythmia. It has a known association with valvular disease but the incidence of tricuspid regurgitation in patients with AF has never been extensively studied.

Methods:
All residents of Olmsted County between 1980-2000 with first presentation of atrial fibrillation were identified and included in the Olmsted AF registry.

A comprehensive search was done to identify all patients with AF who had a full transthoracic echocardiogram (TTE) within 6 months of AF diagnosis and data was extracted.

A further search was done for all those who had at least one more TTE done 6 months post diagnosis or later and data was extracted.

Results:
Out of 4618 patients in the registry, 2465 patients had a baseline TTE and 1323 patients had a follow up TTE.

A total of 13.3 % of AF patients had moderate TR or more (significant TR) at baseline, a 5.8 times higher rate compared to expected rate in age and sex matched population. The majority of patients had functional TR.
The average follow up time was 7±5 years.

At last follow up the rate of new significant TR was 32.9%, 11 times higher than in the expected rate in the general population and higher than rate at baseline. Significant TR was associated with several comorbidities but other than time in AF and insertion of pacemaker, none of them predicted new TR development in the multivariate model.

Conclusions:
Atrial fibrillation is associated with increased prevalence of significant TR.

Over time in AF the rate of significant TR increases significantly and burden of AF (time in AF) is a predictor of TR development.