ACC.14
TCT@ACC-i2 | innovation in intervention

A1404
JACC April 1, 2014
Volume 63, Issue 12

Prevention

RELATIONSHIP OF INCIDENT ATRIAL FIBRILLATION TO RENAL FUNCTION IN HYPERTENSIVE PATIENTS WITH ELECTROCARDIOGRAPHIC LEFT VENTRICULAR HYPERTROPHY: THE LIFE STUDY

Poster Contributions
Hall C
Sunday, March 30, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Novel Trials in Hypertension
Abstract Category: 21. Prevention: Hypertension
Presentation Number: 1218-126

Authors: *Peter M. Okin, Darcy Hille, Kristian Wachtell, Sverre Kjeldsen, Bjorn Dahlof, Richard Devereux, Weill Cornell Medical College, New York, NY, USA*

Background: Atrial fibrillation (AF) and renal function are strongly related to hypertension and renal dysfunction is associated with a higher prevalence of AF. However, population studies have reported inconsistent results as to whether incident AF is related to pre-existing renal dysfunction and whether hypertensive patients with decreased renal function are at increased risk of developing new AF is unclear.

Methods: Risk of new-onset AF was examined in relation to baseline and last in-treatment glomerular filtration rate (GFR) prior to AF diagnosis or last in-study measurement in the absence of new AF in 8429 hypertensive patients with ECG LVH with no history of AF, who were in sinus rhythm on their baseline ECG, had baseline creatinine measurements and were randomized to losartan- vs atenolol-based treatment. GFR was estimated using the Modification of Diet in Renal Disease study equation and considered abnormal if <60 mL/min/1.73 m2.

Results: During 4.7±1.1 years follow-up, new-onset AF was diagnosed in 661 patients (7.8%). Baseline GFR<60 was present in 2198 patients and was associated with a similar AF incidence (8.1 vs 7.8%, p=0.703) and similar risk of new AF in a univariate Cox model (HR 1.06, 95% CI 0.90-1.26, p=0.478) compared with baseline GFR≥60. Because GFR decreased over time during this study, in-treatment development of an abnormal GFR, treated as a time-varying covariate in Cox models was examined and was similarly not associated with an increased risk of new AF (HR 0.96, 95% CI 0.82-1.12, p=0.588). The lack of association between GFR and incident AF was not dependent on the partition value of <60 used to define an abnormal GFR: in parallel univariate Cox analyses, for every 10 mL/min/1.73 m2 decrease in GFR entered as a continuous variable, neither baseline GFR (HR 1.03, 95% CI 0.97-1.08, p=0.300) nor in-treatment GFR (HR 0.95, 95% CI 0.90-1.01, p=0.073) were significant predictors of new AF.

Conclusions: Neither baseline nor in-treatment development of a reduced GFR are associated with an increased risk of developing new-onset AF in hypertensive patients with ECG LVH. These findings suggest that reduced renal function, per se, is not an independent risk factor for new AF in these patients.