AUTOANTIBODIES AGAINST ANGIOTENSIN II TYPE 1 RECEPTOR AND LEFT VENTRICULAR REMODELING CHANGES IN RESPONSE TO PERINDOPRIL TREATMENT

Poster Contributions
Poster Sessions, Expo North
Sunday, March 10, 2013, 3:45 p.m.-4:30 p.m.

Session Title: New Paradigms in Prognostic Role of Biomarkers in Heart Failure
Abstract Category: 15. Heart Failure: Clinical
Presentation Number: 1265-303

Authors: Lin Zhang, Xin Wang, Zhiyong Zhang, Lin Xu, Jiamei Liu, Juan Zhang, Hua Wang, Jin Chen, Hakon Hakonarson, Aihua Hu, Qian Du, Heart Failure Center, Departments of cardiology, Capital Medical University, Chao-Yang Hospital, Beijing, People's Republic of China

Background: Previously, we reported that autoantibodies specific for the angiotensin II type I receptor (anti-AT1-AR) is implicated in the pathology of congestive heart failure (CHF). We hypothesized that the presence of anti-AT1-AR is associated with left ventricular (LV) function of CHF patients in response to perindopril, which is a long-acting angiotensin-converting-enzyme inhibitor.

Methods: Synthetic angiotensin AT1 receptor (AT1-AR) peptides served as the target antigen in ELISA was used to screen the sera of 156 CHF patients, then patients were divided into positive (+) anti-AT1-AR or negative (-) anti-AT1-AR groups based on their anti-AT1-AR reactivity. Echocardiography and 6-minute walk distance were performed at baseline and after one year of perindopril therapy in combination with metoprolol, diuretics and digoxin in both group.

Results: A total of 138 patients completed the final analysis in this study, including 82 patients with (+) anti-AT1-AR and 56 patients with (-) anti-AT1-AR. Compared to the patients with (-) anti-AT1-AR, patients with (+) anti-AT1-AR had a greater improvement in LV end-diastolic and end-systolic dimensions (all p<0.001), as well as 6-minute walk distance (p<0.001) after one year of perindopril therapy in combination with metoprolol, diuretics and digoxin treatment. Interestingly, the presence of (+) anti-AT1-AR resulted in a greater improvement in LV remodeling and function compared to (-) anti-AT1-AR (p<0.001). The combined endpoint event was significant lower in patients with (+) anti-AT1-AR than that in patients with (-) anti-AT1-AR (p<0.05, 36.5% vs. 69.9%).

Conclusions: In patients with (+) anti-AT1-AR, compared with (-) anti-AT1-AR patients, same dose of the perindopril, has a better clinical therapeutic effect on congestive heart function so as to decrease the combined endpoint events. This result potentially presents a novel biomarker of the renin-angiotensin-aldosterone system for the detection as well as therapeutic intervention of congestive heart failure patients.