



## Heart Failure

### ASSOCIATION BETWEEN ADRENERGIC RECEPTOR GENOTYPES AND BETA-BLOCKER TREATMENT RESPONSE IN HEART FAILURE PATIENTS: ANALYSIS BY CARDIAC 123I-MIBG SCINTIGRAPHY

Poster Contributions

Poster Sessions, Expo North

Sunday, March 10, 2013, 3:45 p.m.-4:30 p.m.

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Session Title: Targeting Heart Failure Therapy: Pharmacogenetics and Biomarkers

Abstract Category: 17. Heart Failure: Therapy

Presentation Number: 1264-292

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**Background:** Studies have demonstrated that systolic heart failure (HF) patients with the variant Ser49Gly have a better 5-year survival rate, and reduced mortality under beta-blocker therapy. However, the influence of the polymorphism Ser49Gly in heart failure adrenergic activation is still unknown. Our aim was to evaluate the relationship of cardiac adrenergic activation by I123-Metaiodobenzylganidine (MIBG) scintigraphy, before and after carvedilol treatment, with Ser49Gly polymorphism of beta-1 adrenergic receptor.

**Methods:** Using a longitudinal prospective design, 28 patients were recruited from our Heart Failure Clinic between July 2006 and March 2008. Inclusion criteria were: presence of Heart Failure by Framingham Criteria, NYHA class I-IV, age 30-80 years, left ventricular ejection fraction <45% (Simpson by echocardiogram) confirmed by MUGA, and no previous beta-blocker treatment. Myocardial scintigraphy with I123-MIBG and genotypic evaluation were performed. Reevaluation scintigraphy was done after 3 months.

**Results:** From 28 patients, 18 were males (64%), and overall mean age was 57.5 years. Ten patients (35.7%) were in class II (NYHA) and 18 (64.3%) in class III. On admission, the mean LVEF was 28%. Regarding the genotypic profile, 12 patients were homozygous Ser49Ser and 16 patients presented the variant Gly49. The group with Gly49A variant showed, on MIBG washout rate, a significantly higher reduction after 3 months carvedilol treatment compared to the homozygous group (Gly49: -10% vs. Ser49Ser: +28%,  $p=0.038$ ). There were no differences on early and late heart/mediastinum ratios between groups.

**Conclusion:** Polymorphism Ser49Gly of B1- adrenoceptor was associated with a better autonomic response to carvedilol treatment. Cardiac innervation as assessed by MIBG scintigraphy can detect distinct response profile to beta-blocker therapy.