CAN 123I-MIBG IMAGING IDENTIFY IMPLANTABLE DEFIBRILLATOR CANDIDATES FOR PRIMARY PREVENTION?

Poster Contributions
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Background: The AdreView Myocardial Imaging for Risk Evaluation in Heart Failure (ADMIRE-HF), was a prospective, multicenter study evaluating the prognostic usefulness of 123I-mIBG scintigraphy for identifying patients (pts) with NYHA functional class II/III with left ventricular ejection fraction (LVEF) ≤35% who will experience a major adverse cardiac event. Although 123I-mIBG was able to risk stratify and add incremental value, identification of patients with improved outcomes with cardiac defibrillator (ICD) implantation for primary prevention was not examined.

Methods: We identified 961 patients enrolled in ADMIRE-HF followed for up to 2 years. We excluded patients with an ICD at the time of study enrollment and censored pts receiving ICD for secondary prevention at the time of the procedure, leaving a total of 676 patients. 123I-mIBG results were dichotomized using heart:mediastinal ratio (HM) of 1.6. A propensity score was developed to adjust for nonrandomized referral to ICD after enrollment. To avoid overfitting, a clinical risk score based on all pre-imaging data was developed. The association between 123I-mIBG results and other clinical and laboratory information and ACD was assessed using Cox Proportional Hazards analysis (CPH). The primary analysis focused on testing for an interaction between HM and ICD.

Results: Over a mean follow-up of 612±242 days, 66 ACD occurred (9.8%) and 196 pts (29%) were referred for ICD. CPH analysis revealed that after adjusting for BNP levels, LVEF, fixed defects on SPECT, and baseline clinical risk, 123I-mIBG results (HM) were predictive of ACD (model c-index 0.77, p<0.001). The presence of a normal HM was associated with a 78% reduction in risk [hazard ratio 0.22 (95%CI 0.07, 0.69)]. However, no significant interaction between ICD placement and HM was present. No such interaction was present with any other covariate

Conclusion. In patients without prior ICD, 123I-mIBG is strongly predictive of ACD and adds incremental value, but cannot identify which pts may benefit from ICD placement for primary prevention.