THE EFFECT OF METOPROLOL VERSUS CARVEDILOL ON THE RISK OF ATRIAL AND VENTRICULAR ARRHYTHMIA IN PRIMARY PREVENTION IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR RECIPIENTS

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Background: Both selective and non-selective beta-blockers (BB) are used to treat patients with heart failure (HF). However, data on the association of BB type with risk of atrial and ventricular arrhythmia (VA) in HF patients with a primary prevention implantable cardioverter-defibrillator (ICD) are limited.

Objective: To evaluate the effect of metoprolol vs. carvedilol on the risk of atrial and ventricular arrhythmia in HF patients with an ICD.

Methods: The study analysis included 4,354 primary prevention ICD recipients who were enrolled in five landmark ICD trials (MADIT-II, MADIT-CRT, MADIT-RIT, MADIT-RISK, and RAID). A Fine and Gray regression model, stratified by studies, was used to evaluate the risk of fast VA, defined as ventricular tachycardia ≥200 bpm or ventricular fibrillation, and the risk of atrial fibrillation (AF) or supraventricular tachycardia (SVT) by BB type, adjusting for risk factors.

Results: Among 4354 study patients 2,967 (54%) were prescribed carvedilol and 1387 (46%) metoprolol. The cumulative incidence of fast VA at 3.5 years was 15% in patients on carvedilol vs. 20% in patients on metoprolol, p = 0.01 (Figure A). Multivariate analysis showed that patients on carvedilol had a 18% lower risk of fast VA when compared to those on metoprolol. Similarly, the cumulative incidence of AF or SVT at 3.5 years was 12% in patients on carvedilol vs 15% in patients taking metoprolol, p = 0.003 (Figure B). Multivariate analysis showed that carvedilol treatment was associated with a 35% reduction in the risk of AF or SVT (HR [95% CI] = 0.65 [0.53-0.80]; p < 0.001) when compared to metoprolol.

Conclusion: Our findings suggests that HF patients with ICDs on carvedilol experience a lower risk of fast VA, AF or SVT when compared to those on metoprolol.

THE EFFECT OF ALDOSTERONE ANTAGONISTS ON MORTALITY IN PATIENTS WITH HEART FAILURE WITH PRESERVED EJECTION FRACTION AND ATRIAL FIBRILLATION

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Background: While aldosterone antagonists (AA) have not been shown to improve mortality in heart failure with preserved ejection fraction (HFP EF), their effect on left atrial myopathy could provide benefit in the subgroup of HFP EF patients with atrial fibrillation (AF).

Objective: To determine in the national Veterans Administration (VA) database if there is an effect of AA on mortality in HFP EF patients with AF.

Methods: We identified AF patients with ejection fraction ≥ 40% who were admitted with HF between 2002-2015. Baseline characteristics were determined by ICD-9/10 codes. Ejection fractions were collected from echocardiogram reports and database records. Records were reviewed for 5 years after the index hospitalization. Propensity score matching was used to create balanced groups.

Results: A total of 3,797 patient admitted with HF and had AF at baseline or during follow up were identified - 1,233 (age 69.2 ±