Journal of Cardiovascular Magnetic Resonance

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Meeting abstract

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157 Renal artery stenosis: independent predictor of increased mortality in patients with heart failure. A Magnetic Resonance Imaging study

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from 11th Annual SCMR Scientific Sessions
Los Angeles, CA, USA. 1–3 February 2008

Published: 22 October 2008

Journal of Cardiovascular Magnetic Resonance 2008, **10**(Suppl 1):A58 doi:10.1186/1532-429X-10-S1-A58

This abstract is available from: http://jcmr-online.com/content/10/S1/A58

Introduction

It is well known that renal artery stenosis (RAS) is associated with renal dysfunction and suboptimal heart failure (HF) treatment.

Purpose

To investigate the prevalence and of RAS and its prognostic impact in HF patients who are on optimal treatment with ACE inhibitors and b-blockers

Methods

234 patients with HF and on optimal treatment underwent cardiac and renal magnetic resonance imaging (MRI) examination. The renal MRI data were reviewed offline by an expert observer who identify the presence and severity of RAS. Patients were divided in 3 groups: A (normal renal arteries or RAS < 50%), B (unilateral RAS > 50%) and C (bilateral RAS > 50%).

Results

The number of patients in A, B and C were 133, 62 and 39 respectively. The mean age was 70 ± 10 years and 81% were men. Mean EF was 38 ± 14%.

Patients from group B and C were older comparing to patients form group A (73 ± 8 and 74 ± 9 vs. 67 ± 11, p < 0.0001), had lower GFR (45 ± 19 ml/min and 40 ± 18 mil/min vs. 57 ± 22 ml/min) and it was more likely to suffer form ischemic heart disease (81% and 85% vs. 66, p = 0.02) and hypertension (47% and 56% vs. 31%, p = 0.006). The patients in Group C had higher NT-BNP levels comparing to the group A and B (383 ± 385 vs. 269 ± 701 and 251 ± 290 respectively, p = 0.038) and most of them had peripheral oedema (53% vs. 18% and 23%, p < 0.0001). No statistical significant differences in cardiac MRI measurements were noted in the 3 groups.

During a follow up period of 33 ± 19 months 10% of the patients form group A, 17 (27%) from B and 15 (38%) from C died suggesting an increased mortality in the patients with RAS (p = 0.007). Applying multivariate Cox regression analysis and after adjustment for sex, age, GFR, diabetes mellitus, NYHA classification and EF, RAS (p = 0.019, HR: 2.388, 95% CI: 1.156–4.932), IHD (p = 0.015, HR: 4.610, CI: 1.342–15.838), left ventricular end-diastolic volumes (p = 0.010, HR 1.009, CI 1.002–1.016) and non b-blocker treatment (p = 0.060, HR: 1.009, CI 1.002–1.016) were found to be independent predictors of mortality.

Conclusion

RAS is a common disease in patients with HF and is associated with increased mortality. Whether renal artery

revascularisation will improve the prognosis in these patients needs further investigation.