

Oral presentation

## Prognostic significance of myocardial fibrosis in hypertrophic cardiomyopathy using cardiovascular magnetic resonance

Rory O'Hanlon\*<sup>1</sup>, Agata Grasso<sup>1</sup>, Michael Roughton<sup>2</sup>, James C Moon<sup>3</sup>, Susan Clarke<sup>1</sup>, Ricardo Wage<sup>1</sup>, Jess Webb<sup>1</sup>, Meghana Kulkarni<sup>1</sup>, Dana Dawson<sup>1</sup>, Leena Sulaiibekkh<sup>1</sup>, Bud Chandrasekaran<sup>1</sup>, Chiara Bucciarelli-Ducci<sup>1</sup>, Ferdinando Pasquale<sup>3</sup>, Martin R Cowie<sup>4</sup>, Wiliam J McKenna<sup>3</sup>, Margaret Burke<sup>5</sup>, Mary Sheppard<sup>1</sup>, Perry M Elliot<sup>3</sup>, Dudley J Pennell<sup>1</sup> and Sanjay K Prasad<sup>1</sup>

Address: <sup>1</sup>Royal Brompton Hospital, London, UK, <sup>2</sup>R-Squared Statistics, London, UK, <sup>3</sup>The Heart Hospital, London, UK, <sup>4</sup>Imperial College, London, UK and <sup>5</sup>Harefield Hospital, London, UK

\* Corresponding author

from 13th Annual SCMR Scientific Sessions  
Phoenix, AZ, USA. 21-24 January 2010

Published: 21 January 2010

*Journal of Cardiovascular Magnetic Resonance* 2010, **12**(Suppl 1):O50 doi:10.1186/1532-429X-12-S1-O50

This abstract is available from: <http://jcmr-online.com/content/12/S1/O50>

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### Introduction

The role of myocardial fibrosis in the prediction of sudden death and heart failure in hypertrophic cardiomyopathy (HCM) is unclear.

### Purpose

We sought to investigate the prognostic significance of fibrosis detection by cardiovascular magnetic resonance (CMR) to predict major clinical events in HCM using the late gadolinium-enhanced (LGE) technique.

### Methods

A prospective cohort study of 217 consecutive HCM patients followed for 3.1 + 1.7 years to determine the role of fibrosis detected using LGE-CMR on morbidity and mortality.

### Results

LGE was present in 136/217 (LGE+, 63%). Thirty four of the 136 patients (25%) in the LGE+ group and 6/81 (7.4%) in the LGE- group reached the combined primary endpoint of cardiovascular death, unplanned cardiovascular admission, sustained VT/VF, or appropriate ICD dis-

charge, (HR 3.4,  $p = 0.006$ ). In the LGE+ group, overall risk increased with the percentage of LGE present (HR 1.03 per percent LGE increase,  $p = 0.008$ ). The risk of unplanned heart failure admissions, deterioration to NYHA III or IV, or heart failure related death was greater in LGE+ group (HR 2.5,  $p = 0.021$ ), and this risk increased as the percentage of LGE increased (HR 1.03 per percent LGE increase,  $p = 0.017$ ). All relationships remained significant after multivariate analysis. The overall percentage of LGE was an important univariate predictor for arrhythmic endpoints (sustained VT/VF, appropriate ICD discharge, SCD), HR 1.05 per percent LGE increase,  $p = 0.014$ ), but did not reach significance after multivariate analysis.

### Conclusion

In patients with HCM, myocardial fibrosis is an independent predictor of adverse outcome particularly due to heart failure