

**Global circumferential left ventricular strain impairment
in hypertrophic cardiomyopathy: comparison to left
ventricular hypertrophy and late gadolinium
enhancement**

Laurent Macron, Alban Redheuil, Golmehr Ashrafpoor, Nadjia Kachenoura,
Emilie Bollache, Albert Hagège, Michel Desnos, Pierre Croisille, Patrick
Clarysse, Elie Mousseaux

► **To cite this version:**

Laurent Macron, Alban Redheuil, Golmehr Ashrafpoor, Nadjia Kachenoura, Emilie Bollache, et al..
Global circumferential left ventricular strain impairment in hypertrophic cardiomyopathy: comparison
to left ventricular hypertrophy and late gadolinium enhancement. *Journal of Cardiovascular Magnetic
Resonance*, BioMed Central, 2013, 15 (Suppl 1), pp.E122. <inserm-00782661>

HAL Id: inserm-00782661

<http://www.hal.inserm.fr/inserm-00782661>

Submitted on 30 Jan 2013

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

POSTER PRESENTATION

Open Access

Global circumferential left ventricular strain impairment in hypertrophic cardiomyopathy: comparison to left ventricular hypertrophy and late gadolinium enhancement

Laurent Macron^{1*}, Alban Redheuil^{1,3}, Golmehr Ashrafpoor^{1,2}, Nadjia Kachenoura³, Emilie Bollache³, Albert A Hagège², Michel Desnos², Pierre Croisille⁴, Patrick Clarysse⁴, Elie Mousseaux^{1,3}

From 16th Annual SCMR Scientific Sessions
San Francisco, CA, USA. 31 January - 3 February 2013

Background

to evaluate the relationship between Left Ventricular (LV) myocardial strain, mass, wall thickness and the extent of fibrosis in hypertrophic cardiomyopathy (HCM)

Methods

Forty HCM patients and 20 matched controls underwent a comprehensive CMR including cine imaging, late gadolinium enhancement (LGE) and short axis tagging. Global peak circumferential LV strain (Ecc) was generated from tagging sequences using InTag[®]. LGE volume was quantified semi automatically using a 6SD threshold.

Results

HCM patients (50±18 years, 65% men) had normal LVEDV (149±46mL, p=0.24), LVESV (52±24mL, p=0.78) and LVEF (65±11%, p=0.38). LV mass (198±69g, p<0.001) and LV mass index (108±37g/m² p=0.002) were significantly increased, resulting in decreased LV mass/LV volume ratio (1.40±0.54, p=0.005) in HCM compared to controls. Median maximal wall thickness was 19.6 (14.4 to 32.3mm). In HCM, LGE was present in 32/40 (80%) and mean LGE mass was 4.31±4.94g.

Ecc was significantly impaired in HCM patients (-8.82±0.32 vs. -15.54±2.54%, p<0.0001)

Ecc impairment was significantly associated with increased LV mass index (r=0.51, p=0.0009), LV mass/LV volume ratio (r=0.67, p<0.0001) and LV maximal wall

thickness (r=0.51, p=0.008). Moreover, Ecc impairment was associated with increased LGE mass (r=0.39, p=0.01).

Conclusions

Global LV circumferential myocardial deformation was strongly decreased in HCM and significantly associated with LV hypertrophy and the extent of LGE.

Funding

none

Author details

¹Radiology, Cardiovascular Imaging Unit, HEGP,APHP, Paris, France. ²Cardiology, HEGP,APHP, Paris, France. ³LIF, INSERM U678, UPMC, Paris, France. ⁴CREATIS, UMR CNRS 5220 - INSERM U1044, Lyon, France.

Published: 30 January 2013

doi:10.1186/1532-429X-15-S1-E122

Cite this article as: Macron et al.: Global circumferential left ventricular strain impairment in hypertrophic cardiomyopathy: comparison to left ventricular hypertrophy and late gadolinium enhancement. *Journal of Cardiovascular Magnetic Resonance* 2013 **15**(Suppl 1):E122.

¹Radiology, Cardiovascular Imaging Unit, HEGP,APHP, Paris, France
Full list of author information is available at the end of the article