Abstract: P753

Comparison of global and regional myocardial strains in patients with heart failure with a preserved ejection fraction vs hypertension vs age-matched control

Authors:
H Y Kim¹, KKH Kim¹, SC LEE Lee¹, R HEO Heo², ¹Chonnam National University Hospital, Department of Cardiovascular Medicine - Gwangju - Korea Republic of, ²Hanyang University, Division of Cardiology - Seoul - Korea Republic of,

Topic(s):
Tissue Doppler, Speckle Tracking and Strain Imaging

Citation:
European Heart Journal - Cardiovascular Imaging (2019) 20 (Supplement 1), i478

Background
With an increasing clinical importance of the treatment of the heart failure (HF) with preserved ejection fraction (HFP EF), it is important to be certain of the diagnosis of HF. We investigated global and regional left ventricular (LV) strains using echocardiography speckle tracking in patients with HFP EF and compared those parameters with that of patients with hypertension and normal subjects.

Methods
Peak longitudinal, circumferential and radial strains were assessed globally and regionally for each study groups with two dimensional echocardiography using speckle-tracking. Diastolic strain rate was also determined.

Results
There were fifty patients in HFP EF group, fifty-six patients in hypertension group and forty-six age-matched normal subjects. In patients with HFP EF, global peak longitudinal, circumferential and radial strain and strain rate were reduced compared to both hypertension patients and normal controls (-15.5±5.3 vs -17.7±3.1 and -19.9±2.0; -9.7±2.2 vs -19.3±3.1 and -20.5±3.3; 17.7±8.2 vs 38.4±12.4 and 43.6±11.9, respectively, P <0.001, for all). Furthermore, segmental peak longitudinal, circumferential and radial strain and strain rate were significantly lower in HFP EF group compared to both hypertension patients and normal controls, in all segments except in inferoseptal and inferolateral apical segments. In addition, global and segmental peak strain and strain rate were significantly higher in hypertension patients compared to normal subjects.

Conclusions In the speckle tracking echocardiography, impaired peak global strain and homogeneously reduced segmental strain was observed in HFP EF patients compared to the hypertension patients and normal subjects in decreasing order. This can provide early information on the initiation of LV deformation (of HFP EF) in patients with hypertension or normal subjects.
Abstract:
Comparison of global and regional myocardial strains in patients with heart failure with a preserved ejection fraction vs hypertension vs age-matched control

Authors:
H Y Kim, KKH Kim, SC Lee, R Heo

1 Chonnam National University Hospital, Department of Cardiovascular Medicine - Gwangju - Korea Republic of,
2 Hanyang University, Division of Cardiology - Seoul - Korea Republic of,

Topic(s): Tissue Doppler, Speckle Tracking and Strain Imaging

Citation: European Heart Journal - Cardiovascular Imaging (2019) 20 (Supplement 1), i478

Background
With an increasing clinical importance of the treatment of the heart failure (HF) with preserved ejection fraction (HFpEF), it is important to be certain of the diagnosis of HF. We investigated global and regional left ventricular (LV) strains using echocardiography speckle tracking in patients with HFpEF and compared those parameters with that of patients with hypertension and normal subjects.

Methods
Peak longitudinal, circumferential and radial strains were assessed globally and regionally for each study groups with two dimensional echocardiography using speckle-tracking. Diastolic strain rate was also determined.

Results
There were fifty patients in HFpEF group, fifty-six patients in hypertension group and forty-six age-matched normal subjects. In patients with HFpEF, global peak longitudinal, circumferential and radial strain and strain rate were reduced compared to both hypertension patients and normal controls (−15.5±5.3 vs −17.7±3.1 and −19.9±2.0; −9.7±2.2 vs −19.3±3.1 and −20.5±3.3; 17.7±8.2 vs 38.4±12.4 and 43.6±11.9, respectively, P <0.001, for all). Furthermore, segmental peak longitudinal, circumferential and radial strain and strain rate were significantly lower in HFpEF group compared to both hypertension patients and normal controls, in all segments except in inferoseptal and inferolateral apical segments. In addition, global and segmental peak strain and strain rate were significantly higher in hypertension patients compared to normal subjects.

Conclusions
In the speckle tracking echocardiography, impaired peak global strain and homogeneously reduced segmental strain was observed in HFpEF patients compared to the hypertension patients and normal subjects in decreasing order. This can provide early information on the initiation of LV deformation (of HFpEF) in patients with hypertension or normal subjects.