

## P622

# Role of right ventricular strain measured by 2D-echocardiography in the diagnosis of cardiac amyloidosis

A. Durante Lopez, V.M.P. Monivas Palomero, M.T.S. Torres Sanabria, J.S.C. Segovia Cubero, S.M.S. Mingo Santos

University Hospital Puerta de Hierro Majadahonda, Cardiology, Madrid, Spain

**Introduction:** Cardiac amyloidosis (CA) causes a restrictive cardiomyopathy usually associated with a poor prognosis. Two subtypes predominate: systemic (ALCA) and transthyretin (ATTR, either wild type -TTRwt- or mutant -TTRm-). Left ventricle (LV) apical sparing has been extensively studied by speckle-tracking echocardiography (STE) for diagnosis, but right ventricular (RV) deformation pattern has not been described.

**Purpose:** To characterize RV involvement in CA patients and to identify which parameters may help in the differential diagnosis between ALCA and ATTR subtypes.

**Methods:** 78 patients with CA (47 ALCA, 20 TTRwt, 11 TTRm) and 24 healthy controls were included. We analyzed global longitudinal strain (GLS) in 16 LV and 6 RV segments. LV and RV apical ratios (AR) were obtained.

**Results:** LVGLS and Free-Wall RVLS were impaired in all patients (LVGLS:  $11.9 \pm 2.9\%$  in ALCA,  $12.5 \pm 3.8\%$  in TTRwt,  $14.9 \pm 2.7\%$  in TTRm,  $21.9 \pm 2.6\%$  in controls and Free-Wall RVLS:  $13.1 \pm 6.8\%$  vs  $14.9 \pm 4.5\%$  vs  $17.2 \pm 3.4\%$  vs  $22.1 \pm 3.1\%$ , respectively). LV and RV AR were higher in ALCA as compared to both TTRwt, ATTRm and controls (LVAR:  $1.1 \pm 0.2$  vs  $0.8 \pm 0.2$  vs  $0.9 \pm 0.1$  vs  $0.7 \pm 0.1$ ,  $p < 0.001$ ; RVAR:  $1.1 \pm 0.2$  vs  $0.6 \pm 0.2$  vs  $0.6 \pm 0.1$  vs  $0.6 \pm 0.1$ ,  $p < 0.001$ ). Cut-off values of LVAR  $> 0.96$  and RVAR  $> 0.8$  showed high accuracy to differentiate between ALCA and ATTR.

**Conclusion:** RV dysfunction is a common finding in CA. Apical sparing pattern was present in RV strain, similarly to that described in LV and we describe it as an specific finding of ALCA patients. We propose RVAR as an accessible and easy way to differentiate, among different subtypes of amyloidosis based on STE analysis.