Objectives We used CMR with extracellular volume fraction (ECV) measurement to characterise cardiac involvement in relation to outcome in ATTR amyloidosis.

Methods Subjects comprised 263 patients with cardiac ATTR amyloidosis corroborated by grade 2–3 99mTc-DPD cardiac uptake, 17 with suspected cardiac ATTR amyloidosis (grade 1 99mTc-DPD) and 12 asymptomatic individuals with amyloidogenic transthyretin (TTR) mutations. Fifty patients with cardiac AL amyloidosis acted as disease controls.

Results In contrast to AL amyloidosis, asymmetric septal hypertrophy was present in 79% of ATTR patients (70% sigmoid septum and 30% reverse septal curvature), whilst symmetric left ventricular hypertrophy (LVH) was present in only 18%; 3% of patients has no LVH. In patients with cardiac amyloidosis, the pattern of LGE was always typical for amyloidosis (29% subendocardial, 71% transmural) including right ventricular LGE (96%), 63 patients died during follow-up (19 ±14 months). ECV independently correlated with mortality and remained independent after adjustment for age, N-terminal pro-brain natriuretic peptide, ejection fraction, E/E' and left ventricular mass index (hazard ratio, 1.164; 95% confidence interval, 1.066–1.271; p<0.01).

Conclusions Asymmetric hypertrophy, traditionally associated with hypertrophic cardiomyopathy, is the commonest pattern of ventricular remodelling in ATTR amyloidosis. LGE imaging is typical in all patients with cardiac ATTR amyloidosis. ECV correlates with amyloid burden and provides incremental information on outcome even after adjustment for known prognostic factors.

Comparison of Acceleration Algorithms in Whole-Heart Four

026 DIMENSIONAL FLOW Cardiovascular Magnetic Resonance: Two-Centre, 1.5T, Phantom and In Vivo Validation Study

Background Validation of four-dimensional (4D) flow CMR accelerated acquisition methods is needed to make them more robust for clinical applications. Our aim was to compare three widely-used acceleration methods in 4D flow CMR: 4D segmented fast-gradient-echo (4D- turbo-field-echo, 4D-TFE), 4D non-segmented gradient-echo with echo-planar imaging (4D-EPI) and 4D-k-t Broad-use Linear Acquisition Speed-up Technique accelerated TFE (4D-k-t BLAST).

Methods CMR was performed in two institutions on identical 1.5T systems. Acceleration methods were compared in static/