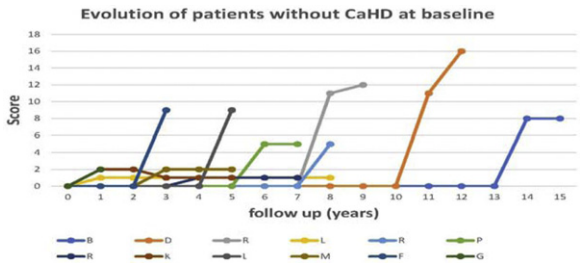

Figure 1

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Poster n°33

Is left ventricular longitudinal strain a good prognostic factor in Friedreich ataxia?

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Introduction Friedreich ataxia (FRDA) is a rare genetic ataxia. The causal mutation is an expanded trinucleotide repeat (GAA) in the frataxin gene. Hypertrophic cardiomyopathy in FRDA is the major cause of early death. Patients with progressive decline of the left ventricular ejection fraction (LVEF) have the worst prognosis. The aim of the study was to evaluate the prognostic value of 2D global longitudinal strain (GLS) compared to LVEF in FRDA patients.
Method From 2003 to 2017 consecutive patients with genetically confirmed FRDA were included. GLS was retrospectively performed. News was obtained for all patients until April 2018.
Results The study included 156 patients of 35 ± 12 years (mean ± SD) with an age at disease onset of 17 ± 11 y and GAA repeat on the shorter allele of 590 ± 241 pb. The following echocardiographic parameters were studied: LVEF 64 ± 9%, GLS -19.8 ± 5% (n = 141), septal wall thickness (SWT) 11.4 ± 2.5 mm, posterior wall thickness (PWT) 10.4 ± 1.8 mm, LV end diastolic diameter (LVEDD) 44.4 ± 6 mm. Correlation between GLS and LVEF was 0.31 (P = 0.0002).
After a mean follow-up of 7.7 ± 4.0 y, 17 (11%) patients died and the outcome (cardiac arrhythmia, heart failure, stroke or death) concerned 28 (18%) patients. In univariate analysis (Cox model), factors associated with mortality were: GLS (HR:1.2;95%CI 1.10—1.32, P = 0.0001), LVEF (HR:0.88;95%CI 0.85—0.92, P < 0.0001), GAA (HR:1.28;95%CI 1.11—1.47, P = 0.0008), age at onset (HR:0.84;95%CI 0.76—0.94, P = 0.002), LVMi (HR:1.02;95%CI 1.01—1.04, P = 0.0078), SWT (HR:1.18%CI 1.01—1.36, P = 0.03) and LVEDD (HR:1.09;95%CI 1.00—1.19, P = 0.04). In multivariate analysis LVEF was the only independent predictor of long-term mortality (HR:0.93;95%CI 0.88;099, P = 0.02). GLS was also an independent predictor of the composite outcome in multivariate analysis.
Conclusion GLS is a predictor of morbimortality but is not superior to LVEF in FRDA patients.
Disclosure of interest The authors declare that they have no competing interest.

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Poster n°34

Reliability of the latest echographic recommendations for estimating left ventricular filling pressures: A comparative study with left cardiac catheterization

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Introduction The current recommendations regarding the estimation of left ventricular filling pressures are based on expert consensus. We tried to evaluate the reliability of the actual algorithm in comparison with the left cardiac catheterization and with the algorithms published in 2009.
Method We enrolled 100 adult patients scheduled for coronary angiography between December 2017 and May 2018. An estimation of filling pressures by transthoracic echocardiography and cardiac catheterization on the same day was performed.
Results The mean age of our patients was 62.79 years ± 10.35 with a male predominance (sex ratio at 3.34). The majority had coronary artery disease (66%). The mean ejection fraction was 53% ± 13. The 2016 algorithm was superior to those published in 2009 compared to the invasive estimate. In fact, its sensitivity and specificity were 70.14% and 86.66% with an accuracy of 75.25% versus 62.21%, 86.66% and 69.79% respectively for the 2009 algorithms. Analysis, in case of preserved systolic function, showed a great decrease in the results of the 2009 algorithms while the 2016 algorithm remained valid. Regarding echographic parameters, the E/e' ratio had the highest coefficient value (r = 0.47) whereas no correlation was found for the tricuspid regurgitation jet velocity.
Conclusion In addition to its simplicity, the actual decision tree for estimating left ventricular filling pressures seems reliable and more efficient than the previous ones.
Disclosure of interest The authors declare that they have no competing interest.

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Poster n°35

Association between AF progression phenotypes with LAA strain, cardiac NT-proANP and VCAM1 levels in atrial fibrillation

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Introduction Atrial natriuretic peptide (ANP) is specifically secreted from the atria in response to tension stress and together with vascular cell adhesion protein-1 (VCAM-1) is associated with AF progression and recurrences. Recently we demonstrated an association between NT-proANP and VCAM1 levels with AF progression phenotypes based on persistent AF and low voltage areas (LVA):

paroxysmal AF with/without LVA (PAF−/PAF+), persistent AF with/without LVA (PersAF±). The aim of the current analysis was to investigate NT-proANP and VCAM1 levels in peripheral and cardiac circulation and to analyze potential association with LAA strain.

Method The study included 116 patients undergoing first AF catheter ablation. Left atrial appendage (LAA) was analyzed before ablation with mid-esophageal echocardiographic in 2D-speckle tracking imaging. LAA total longitudinal strain (LAA-TLS) was assessed as the absolute difference of the maximal systo-diastolic values in extracted strain-curves. Blood plasma samples from femoral vein and LA were collected before catheter ablation. NT-proANP and VCAM1 were analyzed using commercially available assays.

Results There were significant differences between the groups with LAA-TLS ($P < 0.001$), cardiac NT-proANP ($P = 0.009$), and VCAM1 ($P = 0.048$). On univariable analysis, age, gender, PersAF, LAA-TLS, renal function, and cardiac NT-proANP and VCAM1 significantly predicted LVA. However, on multivariable analysis, age (OR 1.097, 95%CI 1.009—1.192, $P = 0.029$), PersAF (OR 4.713, 95%CI 1.131—19.649, $P = 0.033$), LAA-TLS (OR 0.945, 95%CI 0.898—0.995, $P = 0.032$) and VCAM1 (OR 1.002, 95%CI 1.000—1.004, $P = 0.034$) remained significant predictors for LVA.

Conclusion Beside age and AF type, LAA-TLS and VCAM1 were significant predictors for LVA. Larger studies analyzing non-invasive predictors for electro-anatomical remodeling in AF patients are needed to prove our results.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Poster n°36

Analysis of NT-proBNP Baseline Levels in APOLLO as a Predictor of Survival in Hereditary Transthyretin-mediated (hATTR) Amyloidosis

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Introduction Hereditary transthretin amyloidosisis (hATTR) is a multisystemic, fatal disease resulting TTR amyloid deposition. Clinical manifestations include neuropathy as well as cardiomyopathy, a major cause of death. NT-proBNP, cardiac biomarker, has shown prognostic value in cardiac diseases clinically validated. For hATTR and wild-type ATTR, survival in patients with NT-proBNP levels > 3000 ng/L was linked with poorer survival.

Method APOLLO, phase 3, randomized (2:1), double-blind study of patisiran 0.3 mg/kg or placebo IV q3 W in patients with hATTR with polyneuropathy. Fifty-six% of patients had cardiac involvement defined by prespecified criteria: left ventricular (LV) wall thickness ≥ 13 mm and absence of aortic valve disease or hypertension. $n = 225$: mean age 61 years, 57% non-V30 M mutation, NT-proBNP median 756.4 ng/L. To assess the prognostic significance of baseline factors on survival, a Cox regression analyses were conducted. NT-proBNP was evaluated as a continuous variable following logarithmic transformation as well as a binary variable using a cut off value of 3000 ng/mL.

Results Median survival follow-up duration was 18.7 months. 13 deaths not related to the treatment, 6 (8%) PB0 arm and 7 (5%) in patisiran arm. NT-proBNP was the key significant factor predictive of survival based on univariate and multivariate analyses. The risk of death increased with higher baseline NT-proBNP (hazard ratio = 2.9) [95% CI: 1.8, 4.8, P-value = $8.7 \times 10-7$] per unit increment in log(NT—proBNP). Patients with NT-proBNP > 3000 ng/L ($n = 29$) had a 19.3-fold [95% CI 5.9, 62.8, p-value = $8.7 \times 10-7$] increased risk for mortality compared with those below 3000 ng/L ($n = 196$).

Conclusion Based on the data from APOLLO, baseline NT-proBNP serum levels in hATTR patients are predictive of survival. These data underscore the importance of diagnosing and treating patients early in the course of the disease.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Poster n°45

Right ventricular dysfunction in heart failure with preserved ejection fraction

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Introduction The underlying pathophysiology of right ventricular (RV) dysfunction in heart failure with preserved ejection fraction (HFpEF) is still debated. The aim of this study is to assess the prognostic significance of echocardiographic right ventricular abnormalities in HFpEF.

Method We enrolled 150 patients with HFpFE in sinus rhythm and no history of chronic lung disease in this observational study. Over a median follow-up of 18 months, 58 patients (38.6%) reached the end point study of hospitalization for heart failure or death (group 1) and 92 remained asymptomatic (group 2).

Results While mean ages, sex ratio, BMI, creatinine level, left ventricular (LV) ejection fraction, LV and RV dimensions were similar between the 2 groups, group 1 patients compared to group 2, had higher ratio of early mitral diastolic inflow velocity E to early diastolic mitral annular velocity e' (E/e' ratio: 17 ± 6 vs 13 ± 7; $P < 0.01$), higher pulmonary artery (PA) pressures (45 ± 11 vs. 36 ± 12 mmHg; $P < 0.01$) with higher right heart filling pressures. Furthermore, group 1 patients had reduced RV function evidenced by reduced tricuspid annulus systolic velocities obtained at the basal RV free wall (8.9 ± 2.1 vs. 10.9 ± 1.9 cm/s; $P < 0.01$), reduced tricuspid annular plane systolic excursion (TAPSE: 14.9 ± 2.4 vs. 17.8 ± 2.7 mm; $P < 0.01$) and reduced RV fractional area change (FAC: 41 ± 6 vs. 48 ± 7%; $P < 0.01$).

Conclusion In HFpEF patients, right ventricular dysfunction progresses with increasing afterload PA pressures, and is associated with worse outcome.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Poster n°46

Impaired systolic function in heart failure with preserved ejection fraction: A specific phenotype?

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Introduction Background: Impairment in left ventricular (LV) systolic function has been described in heart failure (HF) with preserved ejection fraction (HFpEF), but the prognostic of HFpEF according to de degree of LV-systolic dysfunction has been weakly