action between LV and left atrial (LA) filling dynamics. Until now, it has not been possible to easily obtain simultaneous LV and LA volume curves to perform this analysis. We aimed to analyse CT-based filling dynamics in a group of patients with DD and in a normal control group, compared to Echo-Doppler.

**Methods:** We identified 40 patients who had various grades of DD by echo-Doppler, and who had undergone cardiac CT angiography within 1 month, as well as 37 normal controls. LV and LA volumes were measured every 10% of the RR interval, using semi-automatic commercial software, and end-diastolic (ED), end-systole (ES) and mid-diastole (MD) identified. From these 3 volumes, systolic, early-diastolic and late-diastolic volume changes were calculated, and additional parameters of diastolic filling derived (see Table).

**Results:** Patients with DD had larger LV volumes and mass and lower ejection fraction (LVEF) than controls. They had significantly larger LA volumes and signifi- cantly worse LA function, manifesting as reduced early, late and total emptying fraction (LATEF) and increased conduit volume as % early LV filling (%CV/E). By ROC analysis, LA MD volume had an AUC of 0.92 to separate between normal and DD, while LATEF had an AUC of 0.8 and %CV/E an AUC of 0.77. Logistic regression using LA MD volume, LV mass and early-diastolic emptying fraction, had a 90% accuracy to separate between the 2 groups. Severe DD was further characterized by a significant reduction in late LA contractile function.

**Conclusion:** DD is characterized by significant LA enlargement as well as reduced LA function, which worsens with worsening DD. CT can help detect and characterize DD, mainly via its effect on LA emptying dynamics.

### EPIDEMIOLOGY AND OUTCOMES

**P2464 | BENCH**

Prognostic significance of tricuspid regurgitation peak velocity in patients with heart failure and preserved ejection fraction

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**Background:** In patients with heart failure and preserved ejection fraction (HF-PF), tricuspid regurgitation peak velocity (TRPV) may help to stratify the clinical risk. Data are limited, and the purpose of this work is to investigate the prognostic significance of TRPV in HF-PF.

**Methods and results:** Eighty five consecutive patients with HF-PF (Framing- ham criteria, EF > 50% and BNP > 200 pg/ml, recommendation ESC 2009) who prospectively underwent quantitative Doppler echocardiographic measurements were followed up for 12 months. Of these, 48 had an overt or suspected elevated pulmonary artery pressure (TRPV > 2.8 m/s) and 28 presented cardiac events during follow-up (readmission for heart failure or cardiac death). Ischaemia analysis, patients who had elevated TRPV exhibited more stroke (p = 0.037), and anemia (p = 0.024). Furthermore, they had higher transmural early E wave peak velocity (p = 0.001), transmitral E/A ratio (p = 0.029), blood to tissue E/e' ratio (p = 0.030), and larger left atrium (p = 0.028). These patients experienced more frequently symptoms of dyspnea (p = 0.006). By multivariate Cox regression analysis, independent predictors of cardiac events were as follows: an increase in mean TRPV > 2.8 m/s (ROC, sensitivity 77.78, specificity 61.40, p=0.015, IC [1.50-18.73]), an history of ischemic heart disease (p = 0.013, CI [1.53-35.12]), an anticoagulation therapy (p = 0.033, CI [1.01-32.45]), and a smaller left ventri- cle end-diastolic diameter (p = 0.003, CI [0.71-0.93]). Tricuspid regurgitation peak velocity provided incremental prognostic value in patients with HF-PF (logrank, p = 0.015, figure 1).

**Conclusions:** Tricuspid regurgitation peak velocity could be useful to identify a high-risk subset of patients with heart failure and preserved ejection fraction.

**Logrank curve assessing the occurrence of cardiac events**

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Association of biochemical parameters of renal function with left ventricular diastolic dysfunction in a community-based elderly population in China

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**Purpose:** Relationship of left ventricular diastolic dysfunction (LVDD) with parameters that could provide more information than hemodynamic renal indexes has not been clarified. We aimed to explore the association of comprehensive renal parameters with LVDD in a community-based elderly population.

**Methods:** 1166 community residents (aged ≥ 65 years, 694 females) participating the Shanghai Heart Health Study with complete data of renal parameters were investigated. Echocardiography was used to evaluate diastolic function with conventional and tissue Doppler imaging (TDI) techniques. Serum urea, creatinine, urea-to-creatinine ratio, estimated glomerular filtration rate (eGFR), and urinary albumin-to-creatinine ratio (UACR) were analyzed on their association with LVDD.

**Results:** LVDD were diagnosed in 464 (39.8%) subjects outside of the 1166 participants. The prevalence of LVDD increased in proportion to increasing values of serum urea (P = 0.038), urea-to-creatinine ratio (P = 0.005) and UACR (P = 0.029), and these three parameters were also found correlated with LVDD in logistic univariate regression analysis. Serum urea, urea-to-creatinine ratio and UACR were negatively correlated to peak early (E) to late (A) diastolic velocities ratio (E/A), and positively correlated to left atrial volume index (LAVI); UACR was also positively correlated to E to peak early (E') diastolic mitral annular velocity ratio (E/E'). After adjustment for confounders, urea-to-creatinine ratio was remained independently correlated to LVDD (Odds ratio (OR) 2.82, 95% confidence interval (CI) 1.34-5.95, P = 0.006). Serum urea (OR 1.18, 95% CI 1.03-1.34), creatinine (OR 0.53, 95% CI 1.70-25.02), eGFR (OR 0.22, 95% CI 0.07-0.65) and UACR (OR 2.15, 95% CI 1.42-4.24) were all found independent correlates of advanced LVDD.

**Conclusions:** Biochemical parameters of renal function were closely linked with LVDD. This finding described new cardio-renal relationship in the elderly population.