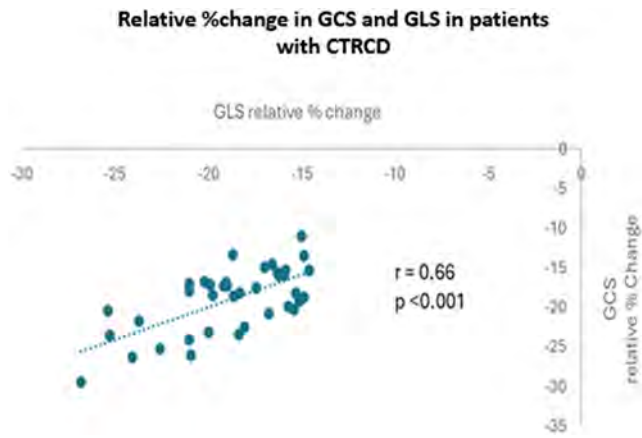


change in GCS was similar to GLS in both CTRCD (-19% for both) and no-CTRCD (-5% and -4% respectively) pts, with moderate correlation in both groups (CTRCD: $r = 0.66$, $p < 0.001$; no-CTRCD: $r = 0.74$, $p < 0.001$, Figure 1). Relative reduction in GCS >15% was concordant with that in GLS in 35/38 (92%) CTRCD pts and 37/40 (93%) no-CTRCD pts. **Conclusion:** GCS demonstrates a parallel reduction to GLS in patients who develop mild CTRCD, with moderate correlation and high concordance in detecting clinically relevant LV dysfunction. These findings support the potential utility of GCS as an alternative or complementary tool for identifying subclinical CTRCD in pts undergoing cancer therapy, particularly when GLS assessment is limited by suboptimal apical windows.



2026 PRESIDENT'S CIRCLE 1 (PC1)

Presented Friday, June 26, 4:30 PM-5:15 PM

Adult Congenital Heart Disease
 PC1-01

Advanced Techniques (3D, Doppler, Contrast)
 PC1-02 through PC1-13

Artificial Intelligence and Machine Learning
 PC1-14 through PC1-21

Circulation and Vascular
 PC1-22 through PC1-23

Developing Technologies and Innovation
 PC1-24 through PC1-28

Ischemic Heart
 PC1-29 through PC1-31

Miscellaneous / Other
 PC1-32 through PC1-34

PC1-01

Right Ventricular-Arterial Coupling Evaluated by Three-Dimensional Echocardiography in Patients with Different Etiologies of Pulmonary Arterial Hypertension
 Dehong Kong, Haiyan Chen, Cuizhen Pan, Xianhong Shu. Zhongshan Hospital, Fudan University, Shanghai, China

Background: Right ventricular (RV) function is a key diagnostic and prognostic factor in patients with pulmonary arterial hypertension (PAH). This study aimed to evaluate the characteristics of RV ventricular-arterial coupling using three-dimensional echocardiography (3DE) in patients with PAH of different etiologies. **Methods:** Echocardiography images were acquired from 70 adult PAH patients and 27 matched normal controls to evaluate tricuspid annular plane systolic excursion (TAPSE), tricuspid annular peak systolic velocity (S'), fractional area change (FAC) and pulmonary arterial systolic pressure (PASP). RV global and regional end-diastolic volume (EDV) and ejection fraction (EF) were assessed by 3DE. N-terminal pro-B-type natriuretic peptide (NT-proBNP) level was recorded for PAH patients. Mean pulmonary arterial pressure (MPAP) and pulmonary vascular resistance (PVR) were measured via right heart catheterization. According to PAH etiology the patients were divided into group A (n=44, PAH associated with congenital heart disease) and group B (n=26, idiopathic PAH). **Results:** Image quality was adequate to analyze in 93% of the 3DE acquisition. PAH patients showed significantly higher RV global and regional EDV and lower EF compared to controls ($P < 0.001$). RV global and regional EDV, S', MPAP and PVR did not differ significantly between group A and group B. Group B demonstrated significantly lower ratios of EF/PASP, FAC/PASP, TAPSE/PASP, and S'/PASP, along with higher NT-proBNP levels, than Group A

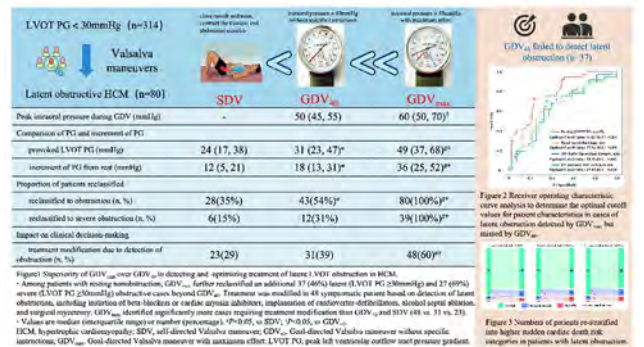
($P < 0.05$). In all PAH patients, RV global and regional EF/PASP, FAC/PASP, TAPSE/PASP, S'/PASP ratios were negatively correlated with MPAP ($r = -0.481 \sim -0.635$, $P < 0.05$) and PVR ($r = -0.400 \sim -0.660$, $P < 0.05$). In group B, EF_{global}/PASP, EF_{inflow}/PASP, FAC/PASP, TAPSE/PASP, S'/PASP ratios were negatively correlated with log₂NT-proBNP ($r = -0.476 \sim -0.593$, $P < 0.05$). **Conclusion:** RV ventricular-arterial coupling characteristics differ between PAH types. At comparable levels of RV afterload, RV systolic performance is better preserved in PAH associated with congenital heart disease than in idiopathic PAH. In PAH without intracardiac shunt, 3DE-derived RV ventricular-arterial coupling indices correlate inversely with PVR and NT-proBNP levels.

PC1-02 - Oral

Maximal-Effort versus Traditional Goal-Directed Valsalva: Improved Detection of Latent and Severe Left Ventricular Outflow Tract Obstruction in Hypertrophic Cardiomyopathy

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Background: The goal-directed Valsalva maneuver (GDV) is superior to the self-directed Valsalva maneuver (SDV) for unmasking latent left ventricular outflow tract (LVOT) obstruction in hypertrophic cardiomyopathy (HCM). Current guidelines recommend an intra-aortic pressure >40 mmHg during traditional GDV (GDV₄₀) but do not consider inter-individual variability in physiological response. We sought to determine whether maximal-effort GDV (GDV_{max}) provides incremental diagnostic value over GDV₄₀ in identifying latent and severe LVOT obstruction and to evaluate its impact on clinical decision-making. **Methods:** In this prospective study, 314 patients with HCM and a resting LVOT gradient <30 mmHg underwent SDV, GDV₄₀, and GDV_{max} during transthoracic echocardiography. Intra-aortic pressure, LVOT gradient, reclassification to latent (≥ 30 mmHg) or severe (≥ 50 mmHg) obstruction, and subsequent changes in clinical decision-making were assessed. **Results:** Median peak intra-aortic pressure was higher with GDV_{max} than with GDV₄₀ (60 vs. 50 mmHg, $P < 0.001$). During GDV₄₀, latent obstruction was identified in 43 patients, including 12 with severe obstruction. GDV_{max} further detected an additional 37 (46%) latent and 27 (69%) severe obstructive cases beyond GDV₄₀ (all $P < 0.001$) (Figure 1). The 37 patients with latent obstruction missed by GDV₄₀ exhibited a lower resting LVOT velocity, wider mitral leaflet tip-septum distance, milder systolic anterior motion, thinner ventricular walls, and better New York Heart Association functional class (Figure 2). Treatment was modified in 48 symptomatic patients with latent obstruction, including the initiation of beta-blockers, calcium channel blockers or cardiac myosin inhibitors, implantable cardioverter-defibrillators implantation, alcohol septal ablation, and surgical myectomy. GDV_{max} identified significantly more patients requiring treatment modification than GDV₄₀ or SDV (48 vs. 31 vs. 23, $P < 0.001$) (Figure 3). **Conclusions:** GDV_{max} was more sensitive than GDV₄₀ for unmasking latent and severe LVOT obstruction in HCM, supporting timely and optimized clinical decision-making. Incorporating maximal-effort maneuvers into routine assessments may refine the guideline-recommended provocation protocols of GDV.



PC1-03 - Oral

3D Shear Wave Elastography: A Novel Tool for Quantitative Assessment of Myocardial Stiffness

Toika Mekki¹, Olivier Pedreira², Clement Papadacci¹, Mickael Tanter¹, Emmanuel Messas³, Mathieu Pernot¹. ¹Physics for Medicine Institute, Paris, France; ²Myosound, Paris, France; ³Hôpital Européen Georges Pompidou AP-HP, Paris, France

Background: Myocardial stiffness (MS) is a key indicator of cardiac biomechanics and function, influenced by anisotropic mechanical behavior arising from the myocardium's complex three-dimensional fiber architecture, and contraction state. Current 2D shear wave elastography (SWE) measure the stiffness in an indeterminate direction relative to the myocardial fiber orientation, leading to variability and uncertainty in the stiffness component measured. We introduce the first clinical modality based on real time 3D-SWE for quantitative diastolic stiffness assessment in complex anisotropic myocardial tissue. We aim to demonstrate the feasibility of 3D-SWE in Healthy Volunteers (HV). **Methods:** We developed a new ultrasound device for 3D-SWE based on a matrix transducer that remotely generates a shear wave using acoustic radiation force and track its propagation with ultrafast imaging (3000 volumes/s) (Fig A). The shear wave velocity