



## Pericardial/Myocardial Disease/Pulmonary Hypertension

### CHANGE IN LEFT VENTRICULAR FUNCTION MEASURED BY CIRCUMFERENTIAL STRAIN IS A SENSITIVE MARKER OF CHANGES IN PULMONARY HEMODYNAMICS AND RIGHT VENTRICULAR FUNCTION IN PULMONARY ARTERIAL HYPERTENSION

Oral Contributions  
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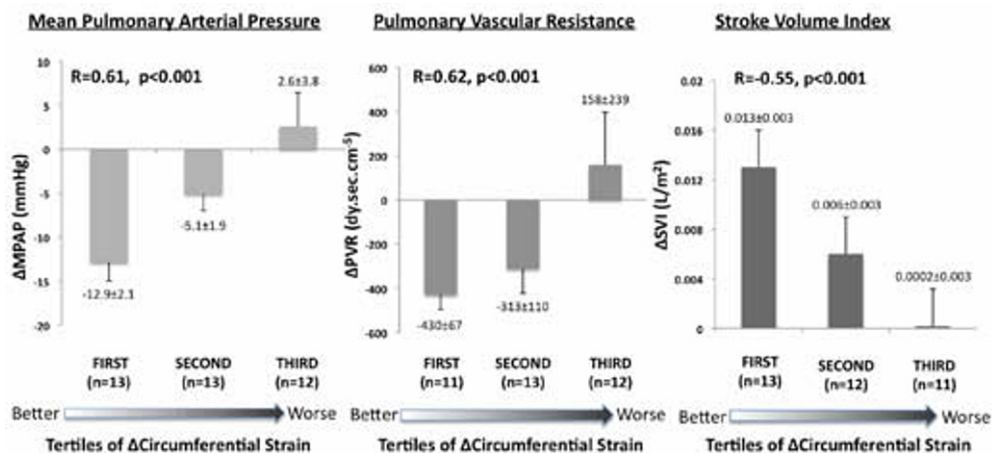
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**Background:** In pulmonary arterial hypertension (PAH), left ventricular (LV) function can be impaired due to right ventricular (RV) pressure overload and ventricular interdependence. Change in LV function, quantified by circumferential strain (CS), may be a sensitive marker of changes in pulmonary hemodynamics in these patients.

**Methods:** LV CS was measured at baseline (n=64) and 24 weeks (n=41) in patients with PAH, decreased exercise capacity, and PVR>800 dynes-sec/cm<sup>5</sup> despite ≥2 PAH-specific therapies. Patients were randomized to imatinib or placebo in the Imatinib in PAH, double-blind, placebo-controlled, Randomized Efficacy Study. LV CS was compared to 30 age- and gender-matched controls, and the relationship of LV CS with invasive hemodynamics was assessed.

**Results:** Mean age was 49.9±1.6 years and 82% were female. While global CS was not significantly different between PAH and controls (-26.6±5.4 vs -27.6±4.2, p=0.4), septal CS was worse in PAH (-24.2±8.2 vs -31.0±5.3, p<0.001). At week-24, change in LV CS correlated with changes in mean pulmonary arterial pressure (r=0.61, p<0.001), pulmonary vascular resistance (r=0.62, p<0.001) and stroke volume index (r=-0.55, p<0.001) measured invasively. These relationships were not modified by treatment arm and were better than correlations observed with RV FAC, TAPSE, or Tei index

**Conclusions:** PAH is associated with impaired LV septal CS, despite preserved global CS. Changes in LV CS closely reflect changes in pulmonary hemodynamics and RV function.



\*Correlations are independent of treatment arm and baseline Circumferential Strain