TRICUSPID ANNULAR PLANE SYSTOLIC EXCURSION: CORRELATION WITH HEMODYNAMIC PARAMETERS IN CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION

ACC Poster Contributions
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Background: Tricuspid annular plane systolic excursion (TAPSE) can help assess right ventricular function in pulmonary hypertension. We studied TAPSE, right ventricular fractional area change (RVFAC) & right heart catheterization results in 67 pts referred for chronic thromboembolic pulmonary hypertension (CTEPH).

Methods: Echocardiography with TAPSE was performed 1.3±1.2 days before initial right heart catheterization. 34 pts subsequently underwent pulmonary thromboendarterectomy (PTE) & postop right heart catheterization; TAPSE was obtained 11±5 days later.

Results: TAPSE dropped from 18±6 to 9±3 mm after PTE (p < 0.0001). RVFAC rose from 25±11% to 30±12% (p = 0.05). Mean pulmonary artery pressure dropped from 43±12 to 29±7 mmHg & pulmonary vascular resistance (PVR) decreased from 656±403 to 306±145 dyne-sec/cm5 (p<0.0001 for both). Before PTE, TAPSE correlated inversely with PVR (Graph, r = 0.56, p < 0.0001, TAPSE = 47 - 4.6 × ln[PVR]). RVFAC did not correlate with PVR or pulmonary artery pressure. After PTE, both TAPSE & RVFAC correlated poorly with PVR (r=0.22 & 0.03).

Conclusions: TAPSE correlates reasonably well with PVR in pts referred for CTEPH. This likely reflects the significant inverse effect of afterload on right ventricular function. TAPSE’s correlation with PVR is superior to that of RVFAC. Early after PTE, however, TAPSE drops by ~50% and demonstrates no correlation with postoperative hemodynamic values. Thus, postoperative TAPSE cannot be used to predict successful PTE.

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