

# ELEVATED LEFT VENTRICULAR FILLING PRESSURES IN CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION

A M Pistritto, C Gerges, M Gerges, R Sadushi-Kolici, N Skoro-Sajer, I Tilea, B Moser, S Thagavi, W Klepetko, and I M Lang.

From the Department of Internal Medicine II, Division of Cardiology, Medical University of Vienna

OBJECTIVE: Chronic thromboembolic pulmonary hypertension (CTEPH) is characterized by non-resolving thromboemboli in the pulmonary arteries, with elevation of right ventricular (RV) afterload, RV failure and eventually death. CTEPH is surgically curable by pulmonary endarterectomy (PEA). According to the European CTEPH registry 16.7% of patients experience persistent or recurrent pulmonary hypertension (PH) after PEA. We hypothesized that a significant proportion of patients with persistent/recurrent PH after PEA suffer from post-capillary PH.

METHODS: 139 consecutive CTEPH patients undergoing PEA were analyzed. Right heart catheterization (RHC) was performed (1) prior to PEA, (2) within 4 days after PEA and (3) 1 year after PEA. Persistent/recurrent PH was defined as mean pulmonary artery pressure (mPAP)  $\geq 25$  mmHg and pulmonary vascular resistance (PVR)  $\geq 5$  WU 1 year after PEA. Elevated LV filling pressures were defined as (1) mean pulmonary arterial wedge pressure (mPAWP)  $> 15$  mmHg, according to the most recent ESC/ERS guidelines on

diagnosis and treatment of PH, as well as (2) mPAWP >12mmHg, according to the latest heart failure with preserved ejection fraction (HFpEF) guidelines.

RESULTS: Hemodynamics of 133 of 139 CTEPH patients undergoing PEA were available for analyses. Prior to PEA, 9 (6.8%) patients presented with mPAWP >15mmHg and 46 (34.6%) with mPAWP >12mmHg. RHC performed within 4 days after PEA in 103 patients showed that 16 (15.5%) patients had mPAWP >15mmHg, while 36 (35%) patients had mPAWP >12mmHg. Hemodynamic data 1 year after PEA were available in 84 patients. 36 patients were identified as having persistent/recurrent PH. Of those, 12 (33.3%) had mPAWP >15mmHg and 21 (58.3%) had mPAWP >12mmHg. Patients with recurrent/persistent PH and mPAWP >12mmHg were more likely to be male (63% vs. 20%; p=0.012) and to develop atrial fibrillation after PEA (31% vs. 0%; p=0.12), compared to those with mPAWP ≤12mmHg.

CONCLUSIONS: CTEPH patients sustain or even increase elevated left-ventricular filling pressures immediately postoperative and 1 year after PEA. Increased LV filling pressures seem to play an important role in the persistence or recurrence of PH after PEA.

