

European Respiratory Society Annual Congress 2012

Abstract Number: 593

Publication Number: P961

Abstract Group: 4.3. Pulmonary Circulation and Pulmonary Vascular Disease

Keyword 1: Exercise **Keyword 2:** Pulmonary hypertension **Keyword 3:** No keyword

Title: End-tidal CO₂ pressure may facilitate differential diagnostics between PH patients with chronic heart or lung disease and CTEPH

Maria 5123 Tscherner m.tscherner@medunigraz.at MD ^{1,2}, Gabor 5124 Kovacs gabor.kovacs@medunigraz.at MD ^{1,2}, Vasile 5125 Foris Vasile.Foris@lvr.lbg.ac.at MD ², Stefan 5126 Scheidl stefan.scheidl@medunigraz.at MD ¹, Alexander 5127 Avian alexander.avian@medunigraz.at ³, Andrea 5128 Olschewski andrea.olschewski@lvr.lbg.ac.at MD ^{1,2} and Horst 5129 Olschewski horst.olschewski@medunigraz.at MD ¹. ¹ Internal Medicine, Division of Pulmonology, Medical University of Graz, Austria ; ² LBI, Ludwig-Boltzmann-Institute for Lung Vascular Research, Graz, Austria ; ³ Medical Statistics, Medical University of Graz, Austria and ⁴ Anesthesiology and Intensive Care Medicine, Medical University of Graz, Austria .

Body: Background: End-tidal CO₂ pressure (PETCO₂) is a simple parameter, which may be assessed at rest or during exercise during cardiopulmonary exercise testing (CPET). PETCO₂ changes have been described in patients with cardiac failure and acute pulmonary embolism, as well as in pulmonary hypertension (PH), but it is not known if PETCO₂ may be helpful in differentiating between PH subgroups. Patients and Methods: We retrospectively investigated PETCO₂ data of patients with a mean PAP >25 mmHg at rest, due to chronic left heart (LH-PH), and pulmonary disease (Lu-PH) or CTEPH. PETCO₂ was measured at rest and during maximal exercise. Mean values were compared by ANOVA and multiple comparisons were performed with Scheffé equation as post hoc test. Results: N= 46 patients were included (LH-PH: n= 14, mean PAP 40±11 mmHg, PVR 327±188 dyn s cm⁻⁵, PAWP 21±5 mmHg; Lu-PH: n=15, meanPAP 34±8 mmHg, PVR 441±266 dyn s cm⁻⁵, FEV1%pred. 63±27; CTEPH: n=17, meanPAP 46±11mmHg, PVR 732±308 dyn s cm⁻⁵). PETCO₂ at rest was 4.97±1.04 mmHg, 4.70±1.19 mmHg, and 3.55±0.71 mmHg in LH-PH, Lu-PH and CTEPH patients. The PETCO₂ difference between LH-PH and CTEPH was 1.38 (CI 95% 0.48 to 2.29 p=0.001), and between Lu-PH and CTEPH 1.14 (CI 95% 0.24 to 2.04 p=0.007). Comparable similar results were obtained with PETCO₂ during maximal exercise. Conclusion: PH caused by CTEPH is characterized by lowered PETCO₂ as compared to PH due to chronic heart or lung disease.