

European Respiratory Society Annual Congress 2012

Abstract Number: 481

Publication Number: P3884

Abstract Group: 4.3. Pulmonary Circulation and Pulmonary Vascular Disease

Keyword 1: Circulation **Keyword 2:** Pulmonary hypertension **Keyword 3:** Oxygen therapy

Title: Daytime measurements underestimate nocturnal oxygen desaturations in pulmonary arterial and chronic thromboembolic pulmonary hypertension

Dr. Florian 3955 Hildenbrand florian.hildenbrand@usz.ch MD ¹, Prof. Dr Konrad E. 3956 Bloch konrad.bloch@usz.ch MD ¹, Prof. Dr Rudolf 3957 Speich rudolf.speich@usz.ch MD ¹ and Dr. Silvia 3958 Ulrich ulris@bluewin.ch MD ¹. ¹ Heart-Vessel Thorax, University Hospital, Zurich, Switzerland, 8091 .

Body: Background: Nocturnal hypoxemia is important in precapillary pulmonary hypertension (pPH) as it worsens pulmonary hemodynamics. Whether daytime oxygen saturation (SpO₂) predicts nocturnal hypoxemia in pPH patients has not been conclusively studied. Therefore, we investigated the prevalence of nocturnal hypoxemia in ambulatory pPH patients in comparison to daytime SpO₂ and disease severity. Methods: Consecutive patients diagnosed with pPH classified as either pulmonary arterial (PAH) or chronic thromboembolic pPH (CTEPH) had daytime resting and exercise SpO₂ (at the end of 6-minute walk test), thereafter they underwent overnight pulse oximetry at home. Functional class, pro-BNP and tricuspid pressure gradient were assessed. Results: 63 patients (mean age±SD 60±15, 43 females) with PAH (44) and CTEPH (19) were included. The resting SpO₂, exercise SpO₂ and mean nocturnal SpO₂ were 94±3, 87±9 and 89±4 %. 49 patients (77%) spent >10% of the night with SpO₂ <90% (desaturators), 33 (52%) spent >50% of the night with SpO₂ <90% (sustained desaturators). The positive predictive values of a daytime SpO₂ ≥91% to predict nocturnal desaturation or sustained desaturation were 75 resp. 47%. Nocturnal SpO₂ was negatively correlated with the tricuspid pressure gradient, but not with functional class, 6MWT and pro-BNP. Conclusion: Nocturnal hypoxemia is very common in PAH and CTEPH despite often normal daytime SpO₂ and reflects disease severity. Nocturnal pulse oximetry should be considered in routine evaluation of pPH patients and research be directed to the treatment of nocturnal desaturation in pPH.