

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 5187  
**Publication Number:** P2637

**Abstract Group:** 4.3. Pulmonary Circulation and Pulmonary Vascular Disease

**Keyword 1:** Pulmonary hypertension **Keyword 2:** Circulation **Keyword 3:** Extrapulmonary impact

**Title:** Hemodynamic assessment of patients with pulmonary hypertension due to lung disease and/or hypoxia

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**Body:** **PURPOSE:** Current guidelines classify PH due to lung disease and/or hypoxia (group 3) as pre-capillary PH (mean pulmonary artery pressure (mPAP)  $\geq$ 25mmHg and mean pulmonary capillary wedge pressure (mPCWP)  $\leq$ 15mmHg). In the setting of lung disease, multiple mechanisms of disease play a role apart from classical pulmonary arteriopathy, hypoxia, hypercapnia, mechanical stress of hyperinflated lungs, emphysematous and fibrotic changes, inflammation and toxic effects of cigarette smoke. We hypothesized that a significant proportion of patients with PH due to lung diseases carries a post-capillary component. **METHODS:** A large database (n=3107) of right and left heart catheterizations was interrogated. **RESULTS:** Of 291 patients with PH due to lung disease, 96 patients had normal hemodynamics ("Non-PH" mPAP<25mmHg). Of the remaining 195 patients with PH, 53 were classified as pre-capillary PH (mPCWP  $\leq$ 15mmHg), and 142 had elevated left ventricular filling pressures (mPCWP >15mmHg). Multivariate analysis identified stable ischemic heart disease as an independent predictor of survival (p=0.014).

Table 1. Age and hemodynamic characteristics of patients with pulmonary hypertension due to lung disease and/or hypoxia

	PH due to lung diseases and/or hypoxia		
	mPCWP $\leq$ 15mmHg (n=142)	mPCWP >15mmHg (n=53)	p-value
Age	59.9 $\pm$ 13.6	63.5 $\pm$ 12	0.074
SaO <sub>2</sub> (%)	89.9 $\pm$ 10	94.5 $\pm$ 2.3	<0.001
SvO <sub>2</sub> (%)	64.1 $\pm$ 11.3	61 $\pm$ 10.3	0.108
mRAP (mmHg)	7 $\pm$ 3.3	12 $\pm$ 5.4	<0.001
mPAP (mmHg)	38.2 $\pm$ 15.3	39.2 $\pm$ 9.9	0.606
mPCWP (mmHg)	10.6 $\pm$ 3.1	25.7 $\pm$ 7.4	<0.001

**CONCLUSION:** The data demonstrate that a significant proportion of patients with PH due to lung disease suffers from post-capillary pulmonary hypertension.