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**Title:** Quantitative estimation of lung perfusion scintigraphy in patients with chronic thromboembolic pulmonary hypertension and idiopathic pulmonary arterial hypertension

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**Body:** Aim: To estimate lung perfusion in patients with chronic thromboembolic pulmonary hypertension (CTEPH) and idiopathic pulmonary arterial hypertension (IPAH) by perfusion scintigraphy with technetium-99m macroaggregated albumin. Methods: The study included 54 pts with pulmonary arterial hypertension: 21pts (12 f/9m) with CTEPH and 33 pts with IPAH. Patients were comparable on age (45,7±12,5/37,5±10,5), WHO FC, systolic pulmonary artery pressure and distance in the 6 minute walking test. A 111-MBq dose of 99mTc-labeled macroaggregated albumin (99mTc-MAA) was injected into an cubital vein with the patient in a horizontal position. Just after, lung scanning was performed using a gamma-camera system Philips SKY LIGHT. Calculated including 99mTc-MAA in the upper, mean, lower zones of each lung and relation of the upper share to the lower was considered (U/L).

Results:

		CTEPH	IPAH
	Right lung, %	51.8±12.1	55.4±6.5
	Left Lung, %	47.6±12.0	44.1±6.7
<b>Zone Vesta No. 1, %</b>	Right lung	22.4±6.8	19.7±2.6
<b>Zone Vesta No. 1, %</b>	Left Lung	30.2±10.1 <sup>1</sup>	23.7±3.2
<b>Zone Vesta No. 2, %</b>	Right Lung	44.7±5.5	42.4±3.2
<b>Zone Vesta No. 2, %</b>	Left Lung	41.3±4.6	40.2±3.2
<b>Zone Vesta No. 3, %</b>	Right Lung	31.3±7.0	36.2±5.0
<b>Zone Vesta No. 3, %</b>	Left Lung	26.8±8.4 <sup>2</sup>	34.7±5.0
<b>U/L, %</b>	Right Lung	0.74 (0.56-0.89)	0.52 (0.46-0.64) <sup>3</sup>
<b>U/L, %</b>	Left Lung	1.02 (0.71-1.33)	0.69 (0.60-0.77)

<sup>1</sup>p = 0,004, <sup>2</sup>p = 0,0009, <sup>3</sup>p <0,05

Conclusions: Decrease of perfusion in the upper zone and decrease of U/L was revealed only in patients with IPAH. On the contrary CTEPH was characterized by increased in U/L. This finding may be helpful for differential diagnostics of pulmonary hypertension.