

1                   **Abstract:** Dual-energy computed tomography (DECT) is a promising technique for assessment of  
2 the lung perfused blood volume (LPBV) in the lung parenchyma. This study was performed to com-  
3 pare the LPBV by DECT between patients with pulmonary hypertension (PH) and controls and to  
4 evaluate the association between the LPBV and the perfusion ratio derived by lung perfusion scin-  
5 tigraphy. This study involved 45 patients who underwent DECT (25 patients with PH and 20 con-  
6 trols). We measured the total LPBV and distribution of the LPBV in each lobe. The total LPBV was  
7 significantly lower in the PH group than control group ( $38 \pm 9$  vs.  $45 \pm 8$  HU,  $p = 0.024$ ). Significant  
8 differences were observed in LPBV of the upper lobe between the PH and control groups ( $34 \pm 10$   
9 vs.  $47 \pm 10$ ,  $p = 0.021$  and  $37 \pm 10$  vs.  $47 \pm 8$ ,  $p < 0.001$ ). A significant correlation was observed between  
10 the LPBV and the lung perfusion scintigraphy. A lower total LPBV and lower LPBV of the upper  
11 lobe as detected by DECT might be specific findings of PH.