

Quantitative lung perfusion scintigraphy and detection of intrapulmonary shunt in liver cirrhosis

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Objective: Frequent association between liver cirrhosis and hypoxemia has been well documented. It is mostly attributable to intrapulmonary shunt due to dilation of pulmonary vasculature. We performed quantitative lung perfusion scintigraphy to detect an intrapulmonary shunt in cirrhosis patients. **Methods:** Prior to injection, Tc-99m MAA was applied to thin layer chromatography for quality control. Three cirrhosis patients who had hypoxemia were examined as well as 11 control subjects. After i.v. injection of Tc-99m MAA, whole body anterior and posterior images were taken at 5 min in patients with cirrhosis and at 8 time points up to 60 min in control subjects. Regions of interest were placed at the bilateral lungs and the whole body, and pulmonary accumulation was calculated. **Results:** All the control subjects demonstrated more than 90% of radioactivity in the lungs until 20 min. In contrast, all the patients showed values less than 80% at 5 min. In the cirrhosis patients with hypoxemia, the presence of intrapulmonary shunt was confirmed on quantitative lung perfusion scan. In control subjects, pulmonary accumulation of Tc-99m MAA dropped as a function of time and became less than 90% after 30 min. **Conclusion:** The timing of measurements is essential in evaluating intrapulmonary shunt.

Key words: liver cirrhosis, lung perfusion scintigraphy, technetium-99m MAA, intrapulmonary shunt, pulmonary vascular dilation