Prolonged lung retention of $^{123}$I-IMP in pulmonary fibrosis

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We compared radiographic findings and the retention of N-isopropyl-$^{123}$I-iodoamphetamine ($^{123}$I-IMP) in 23 patients with pulmonary fibrosis. During the 30 minutes following a rapid injection of 55.5 MBq of $^{123}$I-IMP into the antecubital vein, the image of regional activity was stored. After this, 185 MBq of $^{99m}$Tc-MAA was injected and its image was stored to determine the region of interest. The half time ($T_{1/2}$) of $^{123}$I-IMP release from the lung was calculated in each pixel between 10 and 25 minutes after the injection. Chest roentgenograms were taken, and the lung field was divided into 6 portions (right upper, middle and lower, and left upper, middle and lower). A quantitative score was assigned to the radiographic finding (X-ray score). The $T_{1/2}$ values in the above patients were longer than the $T_{1/2}$ values in normal subjects. Prolonged $T_{1/2}$ values were observed in the lung fields which had high X-ray scores. The X-ray scores and the $T_{1/2}$ values in corresponding areas had a positive relation.

Key words: $^{123}$I-IMP, lung dynamic scintigraphy, pulmonary fibrosis