

Quantitative evaluation of the regional hepatic reserve by ^{99m}Tc -GSA dynamic SPECT before and after chemolipiodolization in patients with hepatocellular carcinoma

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^{99m}Tc -DTPA-galactosyl human serum albumin (^{99m}Tc -GSA) hepatic scintigraphy was performed in 32 patients with hepatocellular carcinoma before and after chemolipiodolization, which was performed from the right hepatic artery (RHA) in 15 patients and the proper hepatic artery (PHA) in 17 patients. Following a bolus injection of ^{99m}Tc -GSA, dynamic SPECT was performed with 1 minute rotation for 16 minutes. Data analysis was conducted by setting a region of interest (ROI) on the right liver, left liver and heart and then their time-activity curves were generated. The regional hepatic accumulation index (LHL15) and the regional uptake constant index (KU) were also calculated from the time-activity curves. In the RHA group, regional LHL15 and KU of the left lobe significantly increased, but they did not significantly increase in the PHA group. In the right lobe, no significant change in regional KU or LHL15 was observed. In the poor prognosis group, all indices in both regions decreased after chemolipiodolization, especially the value for regional KU had a poor score before chemolipiodolization. A decrease in each index in both lobes after chemolipiodolization is considered to be a sign of a poor prognosis. ^{99m}Tc -GSA dynamic SPECT scintigraphy is a useful method for evaluating the changes in regional hepatic reserve before and after chemolipiodolization.

Key words: hepatocellular carcinoma, ^{99m}Tc -DTPA-galactosyl human serum albumin, chemolipiodolization, hepatic functional reserve