

Summary

Evaluation of the Liver Uptake Rate Measured by ^{99m}Tc -GSA SPECT to Assess Liver Function

Yuya ONODERA*, Kazuei TAKAHASHI**, Yukio SUGAI***, Masanari YOSHINO***,
Akio KOMATANI***, Kouichi YAMAGUCHI*** and Souiti ONO****

**Department of Radiology, San-yudo Hospital*

***Department of Radiology, Yamagata University Hospital*

****Department of Radiology, Yamagata University School of Medicine*

*****Department of Radiology, Yamagata Prefectural Sinjo Hospital*

Whether the global liver uptake rate of ^{99m}Tc -GSA directly measured by SPECT is useful as a new index of liver function was evaluated in comparison with biochemical test results (PT%, ChE, Alb, ICG R15, KICG) and Child classification. ^{99m}Tc -GSA SPECT was performed in 157 patients with diffuse hepatic disease or hepatobiliary tumor, and two indices, namely the global liver uptake rate measured by SPECT 15 minutes after intravenous injection of ^{99m}Tc -GSA (LUS 15) and liver uptake per volume (liver uptake density) were examined. Both LUS 15 and liver uptake density were significantly correlated

with biochemical test results and Child classification. In particular, close relationships between LUS 15 and ICG R15 ($r = -0.720$, $p < 0.0001$), LUS 15 and KICG ($r = -0.750$, $p < 0.0001$), and between LUS 15 and ChE ($r = 0.720$, $p < 0.0001$), indicate that LUS 15 is a useful index to evaluate liver function. Moreover, the local liver uptake rate measured by SPECT represented regional liver function and was considered a useful index to predict the function of the remnant liver after invasive treatment such as surgery.

Key words: ^{99m}Tc -GSA, SPECT, Local liver uptake rate of ^{99m}Tc -GSA.