Clinical values for an index predicting postoperative residual liver function by pre-operative liver-scintigraphy in patients with liver disease

Masatada TANABE,* Toyosato TAMAI,* Hisashi MIMURA,** Kunzo ORITA,**
Makoto TSUMURA,** Kiichiro MIZUKAWA,* Katashi SATOH,* Kanji KOJIMA,*
Motoomi OHKAWA,* Hitoshi TAKASHIMA,* Ichiro HINO,* Yoshiro KAWASE,* Hiroyuki SEO,*
Nobuyuki HOSOKAWA,* Shinsuke MATSUNO* and Tsutomu MIYAMOTO*

*Department of Radiology, Kagawa Medical School
**First Department of Surgery, Okayama University Medical School

Hepatic resection is essential in treating hepatocellular carcinoma. However, before an operation, it is difficult to predict the functional reserve in the remnant following massive resection. We devised an original method by which effective liver volume was measured by liver scintigraphy. In order to predict the residual liver function before hepatic resection in a preoperative radiocolloid study, we obtained a predictive index by combining the K values with effective liver volumes which seemed to have the estimated residual liver function. Twenty-one patients with liver or biliary tract disease were selected at random for the present study. We divided them into 3 groups in accordance with prognosis after hepatic resection. There were statistically significant difference between the deceased group who died from hepatic failure and the group who died from causes other than hepatic failure; and between the deceased group who died from hepatic failure and the living group in the preictive index (p<0.01). Our data suggest that if the predictive index is above 0.45, the probability of hepatic failure after hepatic resection is low. We concluded that our predictive index is useful to use in preoperative prediction of post-hepatectomic residual liver function.

Key words: predictive index, residual liver function, liver scintigraphy, liver volume, hepatocellular carcinoma