

The correlation between ICG R15 and LSM on fibroscan at baseline

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Background/Aims: A preoperative liver function evaluation is important to reduce postoperative morbidity and mortality in patients with hepatocellular carcinoma (HCC). Postoperative ascites in patients undergoing surgical resections is associated with an increased risk of overall postoperative morbidity. Indocyanine green (ICG) clearance test is commonly used for assessment of preoperative risk. In chronic liver disease, the degree of liver fibrosis might be associated with preoperative liver function. The aim of study was to evaluate the risk factors for postoperative ascites in patients with suspected HCC.

Methods: A total of 42 patients with suspected HCC who performed ICG retention rate at 15 minutes (R15) and fibroscan before surgery, and underwent surgical resection were retrospectively enrolled. The clinical characteristics, laboratory data, the result of ICG R15 test, and non-invasive fibrosis markers [aspartate aminotransferase to platelet ratio index (APRI), FIB-4 index, and liver stiffness measurement (LSM) on fibroscan] were analyzed for the risks of postoperative ascites within 1 week after surgery.

Results: There was a significant correlation between the results of ICG R15 test and LSM at baseline ($r = 0.419, P=0.006$). Postoperative ascites was present in 38.1% (16/42) of patients. The means of LSM (26.1 vs. 8.6 kPa, $P=0.004$), total bilirubin (0.8 vs. 0.6 mg/dL, $P=0.048$), aspartate aminotransferase (AST) (51 vs. 35 IU/L, $P=0.015$), albumin (3.7 vs. 4.1 g/dL, $P<0.001$), FIB-4 index (3.3 vs. 2.1, $P=0.019$), and APRI (1.1 vs. 0.5, $P=0.011$) in patients with postoperative ascites were significantly different compared to patients without postoperative ascites. In the univariate analysis, LSM [odds ratio (OR): 1.28 (1.08-1.51), $P=0.004$], FIB-4 index [OR: 1.83 (1.07-3.11), $P=0.027$], and APRI [OR: 10.9 (1.7-71.8), $P=0.013$] were risk factors of postoperative ascites. In the multivariate analysis, LSM [OR: 1.24 (1.04-1.47), $P=0.015$] was an independent risk factor.

Conclusion: Although the results of preoperative ICG R15 are suitable for surgery, careful decisions about surgery are needed in patients with high preoperative LSM.

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