

The Liver Combine Test: Calculation tool for safe major hepatectomy.

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Introduction:

Post-operative liver failure is the major cause of mortality after major hepatectomy. We here to report our calculation tool "The Liver Combine Test" (LCT) for safe major hepatectomy.

Methods:

LCT calculation is based on the additive value of allowed hepatic resection (AHR) and future liver remnant (FLR). AHR is calculated based on AHR graft which is plotted using results from ICG-R15, a graft that is proposed by Tokyo Women's Medical University Hospital, Japan. FLR is calculated using CT volumetry based on OsiriX, a DICOM viewer program.

We retrospectively studied patients from our center who were planned for major hepatectomy (resection of 3 segments of liver or more), with Child-Pugh score A and ECOG 0-1. We hypothesized that LCT value of more than 100 is considered safe for major hepatectomy.

Results:

From October 2013 to November 2016, 53 patients were included in the calculations for LCT. Twenty-three patients failed to pass the test. Remaining 30 patients, 1 patient denied surgery and 2 patients failed surgery due to advanced disease. Leaving 27 patients succeeded operation, 1 patient developed Grade A liver failure due to accidental injury of MHV during operation. He subsequently recovered and was discharged 1 week after operation. One patient died from Grade C liver failure due to left bile duct injury caused by stapling device. The remaining patients recovered and were discharged without any significant complications.

Conclusion:

We conclude that LCT may be a useful predictive tool for safe major hepatectomy.