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Donor Safety Of Remnant Liver Volumes Of Less Than 30% In Living Donor Liver Transplantation: A Systematic Review And Meta-analysis

Sang-Hoon KIM, Ki-Hun KIM*, Hwui-Dong CHO

Division Of Liver Transplantation And Hepatobiliary Surgery, Department Of Surgery, Asan Medical Center, University Of Ulsan College Of Medicine, Seoul, REPUBLIC OF KOREA

Background : This meta-analysis aimed to investigate the acceptability of donor remnant liver volume (RLV) to total liver volume (TLV) ratio (RLV/TLV) being <30% as safe in living donor liver transplantation (LDLT).

Methods : Online databases were searched from January 2000 to June 2022. Pooled odds ratios (ORs) and standardized mean differences (SMDs) with 95% confidence intervals (CIs) were calculated using fixed- or random-effects model.

Results : One prospective and seven retrospective studies comprising 1935 patients (164 RLV/TLV < 30% vs. 1771 RLV/TLV \ge 30%) were included. Overall morbidity (OR = 1.82; 95% CI [1.24, 2.67]; p = 0.002) and minor morbidity (OR = 1.88; 95% CI [1.23, 2.88]; p = 0.004) were significantly lower in the RLV/TLV \ge 30% group than in the RLV/TLV <30% group (OR = 1.82; 95% CI [1.24, 2.67]; p = 0.002). No significant differences were noted in the major morbidity, biliary complications, and hepatic dysfunction. Peak levels of bilirubin (SMD = 0.50; 95% CI [0.07, 0.93]; p = 0.02) and international normalized ratio (SMD = 0.68; 95% CI [0.04, 1.32]; p=0.04) were significantly lower in the RLV/TLV \ge 30% group. No significant differences were noted in the peak AST and ALT levels and hospital stay.

Conclusions : Considering that there was no difference in the major morbidity between the two groups, the eligibility of potential donors in LDLT whose RLV/TLV is expected to be <30% should be reconsidered.

Corresponding Author : Ki-Hun KIM (khkim620@amc.seoul.kr)