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The left graft may be the “right” graft: A comparative study of using the right versus left graft in adult-to-adult living donor liver transplantation

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Introduction: Adult-to-adult living donor liver transplantation (LDLT) has been a dominant type of liver transplantation, especially in Asian countries where deceased donors are extremely scarce. Several centers have been attempted to use left liver graft because it could reduce the postoperative risk to the donor. This study retrospectively compared clinical outcomes between right and left liver grafts in adult-to-adult LDLT.

Methods: All consecutive 116 patients who underwent adult-to-adult LDLT between 2010 and 2020 were enrolled in this study. The study cohort comprised of 94 patients in the right liver (RL) group and 22 in the left liver (LL) group. When both hemiliver grafts meet the selection criteria, LL graft was preferred. Prospectively collected clinicopathologic characteristics, perioperative outcomes, and survival were evaluated.

Results: In terms of donor variables, median actual graft-to-recipient weight ratio was higher in the RL group than in the LL group (1.01 [0.66–1.66] vs. 0.85 [0.63–1.50], $p = 0.030$). Total bilirubin level and prothrombin time on postoperative day 5 were worse in the RL group, but it did not reach statistical significance. In terms of recipient variables, hepatic venous pressure gradient after reperfusion was comparable between the groups. The 90-day complication (above Clavien–Dindo grade IIIA) and 1-year graft survival rates were not different between the RL and LL groups (35.9% vs. 56.2%, $p = 0.123$; 91.3% vs. 93.8%, $p = 0.744$; respectively).

Conclusions: This study demonstrated comparable donor and recipient outcomes between the RL and LL groups. In an effort to minimize potential donor risk, LL graft is worth considering when both grafts meet the selection criteria.

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