Results of Adult Living Donor Liver Transplantation with Sixth-Decade Donors: Propensity Score Matching Study in a High-Volume Institution

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Background:
We assessed the prognostic impact of donor age on the outcome of adult living donor liver transplantation (LDLT).

Methods:
Study population comprised adult donor and recipients of right lobe grafts for LDLT performed from January 2005 to December 2016. There were 35 living donors aged ≥50 years (old-age donor group). As a control group, donors in their 20s (young-age donor group) were selected after one-to-one propensity score matching based on sex, model for end-stage liver disease (MELD) score and primary diagnosis.

Results:
The donor age was 52.5±1.5 years versus 25.4±3.1 years in the old- and young-age donor groups, respectively. The remnant volumes of the two groups were 38.9±3.0% versus 38.1±2.9%, respectively (n.s.). The 1-month regeneration rate of the remnant liver was 101.1±10.6% versus 104.5±11.8%, respectively (n.s.), and there was no significant difference in the incidences of donor complications. Mean MELD score was 15 versus 14, respectively (n.s.). Graft-to-recipient weight ratio was 1.02±0.43 versus 0.91±0.63, respectively (n.s.). In the recipients, biliary complication occurred in 11.4% versus 8.6%, respectively (n.s.), and there was no difference in the 5-year survival rate in both groups (n.s.). The 1-week and 1-month regeneration rates of the remnant left liver were 71.6±9.9% and 100.1±10.6% in the old-age donor group respectively, whereas the rates were 80.2±12.1% and 104.5±11.8% in the young-age donor group, respectively (n.s.).

Conclusions:
Right lobe grafts from donors aged ≥50 years showed the usual recovery of graft function but rather delayed liver regeneration. Thus, old-aged donors should be selected prudently after consideration of hepatic resection rate, graft size and hepatic steatosis.