

OUTCOMES AND KEY DETERMINANTS IN LIVING DONOR LIVER TRANSPLANTS FROM OLDER DONORS: A MULTICENTER COHORT ANALYSIS

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Background : Ensuring graft survival in living donor liver transplantation (LDLT) with older donors remains challenging. The effect of living donor age on graft survival remains underexplored. We aimed to evaluate recipient and donor outcomes by donor age and identify key determinants associated with old-donor LDLT.

Methods : We included 4,035 LDLT cases from a multicenter cohort, categorizing donors as “old” or “young” based on an age cut-off of 50 years. After 1:3 propensity score matching, graft survival was compared between the groups. Risk factors for graft loss in old- versus young-donor LDLT were investigated through interaction analysis, with outcomes stratified by the number of risk factors.

Results : The old-donor group (n = 374; 9.3%) showed lower 5-year graft survival than the young-donor group (n = 3,661; 90.7%) in the matched cohort (79.6% vs. 87.7%, P = 0.004). Old-donor was an independent risk factor for graft loss (adjusted hazard ratio [HR]: 1.56, 95% CI: 1.17-2.07, P = 0.002). Significant interactions with old-donor LDLT included cold ischemic time \geq 150 minutes, Model for End-stage Liver Disease score \geq 20, and recipient body mass index \geq 25 kg/m². Old-donor LDLT with two or more of these risk factors increased graft loss risk (HR 3.78, 95% CI: 1.97-7.26, P < 0.001). Six-month donor complication rates did not differ by age (P = 0.672).

Conclusions : Graft survival for older donors (\geq 50 years) is comparable to younger donors when minimal risk factors are present, but outcomes worsen with multiple risk factors. Short-term donor outcomes are unaffected by donor age.

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