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**Graft-recipient-weight ratio and lowered immunosuppression is important for the success of adult liver retransplantation: 25-year single center experience**

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**Introduction:** This study analyzed the risk of liver retransplantation and factors related to better outcome.

**Methods:** Adult liver transplantations performed during 1996 to 2021 were included. Comparison between first transplantation and retransplantation were performed. Among retransplantation cases, comparison between whole liver and partial liver graft was performed. Multivariable Cox analyses for analyzing risk factors for graft and overall survival were performed for the entire cohort as well as the subgroup of patients with retransplantation.

**Results:** A total 2237 transplantations from 2135 adults were included and 103 cases were retransplantation. A total of 44 cases (42.7%) were related to acute graft dysfunction while 59 cases (57.3%) were related to subacute or chronic graft dysfunction. Retransplantation was related poor graft (HR=3.439, CI=2.230-5.304, P<0.001) and overall survival. (HR=2.905, CI=2.089-4.040, P<0.001) Among retransplantations, mean serum FK506 trough level 9ng/mL was related to poor graft (HR=3.692, CI=1.288-10.587, P=0.015) and overall survival. (HR=2.935, CI=1.195-7.211, P=0.019) Graft-recipient-weight ratio under 1.0% was related to poor overall survival in retransplantations. (HR=3.668, CI=1.150-11.698, P=0.028)

**Conclusion:** Retransplantation can be complicated with poor graft and patient survival compared to first transplantation, especially when the graft size is relatively small. Lowering the FK506 trough level during the first month can be beneficial for outcome.