

## Future Liver Remnant Less Than 30% Is Not A Contraindication To Living Donor Right Hepatectomy

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**Background :** The evidence for defining a safe remnant/total volume ratio(RTVR) for in living donors undergoing right hepatectomy for living donor liver transplantation (LDLT) is still not clear yet. The current practice of arbitrarily requiring an RTVR of at least 30% is based on the experience of early studies to keep donor safety. Recently, some centers reported that extended resection with RTVR less than 30% for living donor right hepatectomy but there is no consensus has been established for future remnant liver volume (FRLV) ratio limit. Herein, we describe our center's experience for living donor right hepatectomy with RTVR < 30% and evaluate the outcomes of living donors with RTVR < 30%

**Methods :** We retrospectively reviewed the outcomes of 473 living donor right hepatectomy (LDRH) which performed at our institution from January 2010 to December 2020. We performed right hepatectomy for living donors with RTVR <30% under the following criteria ; 1) Age ≤40 2) Preservation of MHV 3) No or Minimal fatty changes (<15%) 4) Flat fish shaped left hemiliver 5) RTVR > 25% and FRLV / BW ≥ 0.45. The outcomes in these extended living donors were compared with those in living donors under conventional criteria.

**Results :** The mean RTVR in extended group was  $27.1 \pm 1.2$  % (range, 25.1–28.9). Posthepatectomy liver failure (PHLF) occurred in 50 donors (10.6%) and most cases were grade A except one case in conventional group and no clinically significant PHLF was not evident for these extended donor group. PHLF and major complications were not more frequent in living donor group with RTVR <30%. In multivariate only the event for major complications was associated with PHLF but RTVR less than 30% was related to PHLF. To adjust for between-group differences, donors with FLR ≤30% and >30% were matched based on baseline characteristics and overall complication rates and the incidence of PHLF were not different between the two groups.

**Conclusions :** LDRH under our extended criteria could be performed safely in donors with RTVR ratio <30% under our strict criteria when no other donors are available and our extended criteria might be helpful to expand donor pools without adverse effects on donor safety.

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