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Weight reduction in LDLT as a tool in expanding the donor pool

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Lecture : The obesity epidemic worldwide has made it increasingly common to encounter liver steatosis in the living as well as deceased donor candidate. The adverse effects of steatosis in liver surgery were at first acknowledged in transplantation studies reporting impaired outcome of steatotic grafts due to increased risk of primary nonfunction or dysfunction. So, hepatic steatosis is considered an important factor affecting liver allograft function. According to the systematic review and meta-analysis of steatosis as a risk factor in major hepatic resection, compared with patients without steatosis, those with less than 30% and at least 30% steatosis had a significantly increased risk of postoperative complications, with a RR of 1.53 (95% confidence interval (CI) 1.27 to 1.85) and 2.01 (1.66 to 2.44) respectively. Patients with less than 30% and at least 30% steatosis had an increased risk of postoperative death, with a RR of 1.79 (95% CI 0.83 to 3.84) and 2.79 (1.19 to 6.51) respectively. To date, most transplant centers do not consider hepatic steatosis to be a contraindication to accept a liver graft in deceased donor liver transplantation (DDLT). However, the acceptable level of steatosis in living donor liver transplantation (LDLT) is thought to be lower than that in DDLT, because of the smaller sized graft. In terms of donor safety, it is generally accepted that moderate or severe macrovesicular steatosis should be avoided to prevent complications in the donor. There are several reports from Western, DDLT situation to show that macrovesicular 30% is acceptable threshold. Severe steatotic grafts increased risk of poor graft function, whilst moderate-to-severe steatotic grafts decreased graft survival. A couple of reports from Korea also showed that macrovesicular steatosis 30% is acceptable threshold even in living donors. A living donor's safety must always be the primary concern. Donors who are diagnosed with hepatic steatosis should undergo a diet treatment and exercise regimen without drug treatment. After these strategies, the average BMI was reduced. The appropriate short-term weight reduction in potential living liver donors is an effective tool to expand the donor pool, enabling not only the conversion of marginal donors to low-risk donors, but also the transition from ineligible donors to eligible donors. However, since a decrease in liver volume due to body weight reduction can affect graft-to-recipient weight ratio (GRWR), preoperative reevaluation is necessary in patients with expected marginal GRWR.