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The effect of downstaging by locoregional treatments for Hepatocellular carcinoma beyond Milan criteria before living donor liver transplantation

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Introduction : This study aimed to assess the survival outcomes after living donor liver transplantation (LDLT) in patients beyond Milan criteria (MC) after downstaging (DS) to within MC by locoregional treatments (LRT) and to investigate the prognostic factors for HCC recurrence.

Methods : A total of 113 patients undergoing LRT before LDLT from Jan. 2010 to Dec. 2016 were enrolled. The initial tumor size and number, and alpha-fetoprotein (AFP) before LRT and at the immediate pretransplant periods were examined.

Results : The thirty-one patients beyond MC treated with LRTs resulted into DS group (n=8) and non-downstaging (non-DS) group (n=23). There were no significant differences related to the type and number of LRT. The 1-, 3-, and 5-year HCC recurrence-free survival (RFS) estimates of DS group were superior to those of non-DS group (100%, 100%, and 87.5% vs. 54.8%, 49.3%, and 37%, p=0.028). In a regression model predicting DS, the HCC with the lower initial number (odds ratio [OR]: 0.54, p=0.036) and initial log AFP (OR: 0.53, p=0.048) before LRT tended to downstage. Multivariate predictors of posttransplant recurrence were initial tumor largest size (hazard ratio [HR]: 1.20, p=0.025), initial tumor number (HR: 1.11, p=0.101), and immediate pretransplant log AFP (HR: 2.38, p=0.002).

Conclusions : The DS may lead to favorable RFS after LDLT. The lower initial tumor size and number before LRT, and initial and immediate pretransplant AFP can corroborate a better prediction of DS by LRT and RFS after LDLT.

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