

Outcomes Of ABO-incompatible Adult Living Donor Liver Transplantation For Patients With Hepatocellular Carcinoma Beyond The Milan Criteria

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Background : Given the organ scarcity, ABO incompatible (ABOi) living donor liver transplantation (LDLT) emerged as a treatment option for hepatocellular carcinoma (HCC) and underlying liver disease. Milan criteria became standard criteria but expansion beyond the Milan criteria have resulted in similar post-transplant outcomes, thus suggesting LT is a viable treatment option for HCC presenting beyond the Milan Criteria. However, there was few reports the outcome of the patients receiving ABOi LDLT in beyond the Milan Criteria. The aim of our study was to review the HCC-related survival outcomes in the ABOi and ABO compatible (ABOc) groups in the beyond Milan Criteria.

Methods : We retrospectively reviewed the medical records of patients undergoing LDLT for HCC from January 2000 to July 2021 at two tertiary centers in Korea. In total of 114 patients underwent ABOc and 25 patients underwent ABOi LDLT for HCC presenting beyond the Milan Criteria. The eligibility of the beyond Milan Criteria was assessed using preoperative findings by imaging study.

Results : There was no significant difference in pre-transplantation tumor staging, recipient and donor demographics between groups. In terms of operative outcomes and pathologic outcomes, there was no significant difference in both groups. The overall patient survival at 1-, 3-, and 5-year was 88.4%, 72.0% and 69.9% after ABOc LDLT and 58.9%, 58.9% and 58.9% after ABOi LDLT, respectively (P=0.139). The recurrence free survival at 1-, 3-, and 5-year was 94.7%, 86.6% and 82.7% after ABOc LDLT and 87.5%, 60.0% and 48.5% after ABOi LDLT (P<0.001). Recurrence type (intrahepatic versus extrahepatic) was no significant difference in both groups.

Conclusions : Although, recurrence free survival was significant poor in ABOi LDLT for patients with HCC presenting the beyond Milan Criteria than ABOc LDLT, overall survival was comparable between groups. ABOi LDLT may be a option for HCC with beyond Milan Criteria.

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