Korea-nationwide incidence of pediatric deceased donors and single-institutional status of liver transplantation using pediatric donor liver grafts

Geunhyeok Yang, Shin Hwang, Chul-Soo Ahn, Ki-Hun Kim, Deok-Bog Moon, Tae-Yong Ha, Gi-Won Song, Dong-Hwan Jung, Dea-Yeon Kim, Sung-Gyu Lee

Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Background: This study intended to know the allocation status of pediatric deceased donor liver allografts. We analyzed the incidence of pediatric deceased donors in Korean Network for Organ Sharing (KONOS) database and single-institutional status of liver transplantation (LT) using pediatric donors.

Methods: This study assessed the nationwide incidence of pediatric donors ≤ 15 years of age and conducted single-center analysis of LT using pediatric donors.

Results: Between 2010 and 2019, pediatric donors ≤ 15 years of age comprised 171 of 4,395 donors (3.9%) in KONOS database and 31 of 640 liver donors (4.8%) in Asan Medical Center (AMC) database. In AMC, 11 (35.5%) and 20 (64.5%) grafts were allocated to pediatric recipients aged ≤ 15 years and adult recipients aged ≥ 19 years, respectively. All nine livers from donors aged ≤ 5 years were implanted in pediatric recipients aged ≤ 5 years. In 21 donors aged ≥ 9 years, 16 whole liver grafts and four split extended right liver grafts were implanted to 20 adult recipients and two split left lateral section were implanted to two pediatric recipients. Remaining four split liver grafts were implanted in outside institutions. The overall patient survival rates at 1 year, 3 years and 5 years were 90.9%, 80.8% and 80.8% in pediatric-to-pediatric LT group, and 69.6%, 58.4% and 58.4% in pediatric-to-adult LT group, respectively ($P=0.21$).

Conclusions: The study results showed that over half of the pediatric donor livers were allocated to adult patients. Recipient criteria for allocation of liver allografts from pediatric donors needs revision for children on pediatric LT waitlist.

Corresponding author: Shin Hwang

E-mail: shwang@amc.seoul.kr

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