Long-term outcome after prevention of de novo hepatitis B in recipients of core antibody-positive livers with hepatitis B immunoglobulin only

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Background: Anti-HBc positive donors represent an important source of organs in hepatitis B virus (HBV) endemic areas despite the risk of occult HBV infection. We analyzed long-term outcome of prevention for de novo HBV with hepatitis B immunoglobulin (HBIG) only after liver transplantation (LT) using core-positive grafts.

Methods: We retrospectively reviewed the prospective collected data of 1,479 recipients between 1988 and 2018 at Seoul National University Hospital. 1,458 were eligible and enrolled. If either donor or recipient had core antibody, HBIG 4000 IU was administered 4 times until postoperative day 3.

Results: Of 1,458 LTs, 478 (32.8%) used anti-HBc positive grafts. Three hundred twenty-six (68.2%) was allocated to hepatitis B surface antigen (HBsAg)-positive recipients, with 152 (31.8%) to HBs-negative recipients. 21 (13.8%) of de novo HBV infection occurred in 152 core-positive grafts. One (25%), 11 (22.4%), 0, 9 (9.2%) was diagnosed of de novo HBV infection in 4 of hepatitis B surface antigen (HBcAb) and HBsAb negative, 49 of HBcAb-negative and HBsAb-positive, 1 of HBcAb-positive and HBsAb-negative, 98 of HBcAb and HBsAb positive recipients respectively. Anti-HBc negative recipients were more likely to develop de novo HBV infection compared with anti-HBc positive recipients (22.6% vs. 9.1%, $P=0.021$). Incidence of de novo HBV infection did not differ by recipient HBsAb status ($P=0.530$). The median follow-up time was 69 months (range, 29–165 months). The median time to detection of HBsAg seropositivity was 18 months (range, 8–55 months). Two had no treatment, twelve were treated with nucleoside analogs (NA) monotherapy, and seven were treated with NA plus HBIG. The median treatment duration was 41 months. Seven acquired seroconversion. There were 42 (8.8%) of graft losses in study period. The 1-, 5-, 10-year patient survival with anti-HBc positive liver were 97.5%, 93.2%, and 90.5%. No patient died of de novo HBV infection.

Conclusions: De novo HBV did not affect patient survival. However, HBIG only prophylaxis was not enough to prevent de novo HBV development in the era of NA.

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