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Kidney transplantation from brain-dead Donors with Hepatitis B or C in south Korea: A 2015-2020 Korean Organ Transplantation Registry Data Analysis

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Introduction: Because of the Korean Network for Organ Sharing(KONOS) guidelines, brain-dead donor transplantation(liver/kidney) from Hepatitis B or C(+) donors only can be done to the same hepatitis(+) recipients. In the US, organ transplantation from hepatitis(+) donors to (-) recipients has been implemented for more than 15 years. We need to consider the safety of transplantation from hepatitis B or C(+) donors to hepatitis(-) recipients. The aim of the study is to show the transplantation results from hepatitis B or C(+) donors to each hepatitis(-) recipient and make it as a starting point for the consideration.

Methods: This is a retrospective, observational study using data from Korean Organ Transplantation Registry Data Analysis(KOTRY). A total of 2105 kidney transplantations from brain-dead donors, from January 2015 to June 2020 were included in this study. It consists of 80 HBV(+) grafts, 12 HCV(+) grafts and 2013 hepatitis(-) grafts.

Results: In donor characteristics, median ages of the 3 groups(HBV(+), HCV(+), hepatitis(-)) were 57.4+-10.1, 50.1+-11.8 and 48.7+-14.9, respectively($p=0.02$, HCV(+)-hepatitis(-) $p=0.04$). Baseline serum creatinine(median, mg/dL) were 1.25+-0.87, 1.45+-0.46 and 1.57+-1.34, respectively($p=0.02$, HBV(+)-hepatitis(-) $p=0.01$). In recipient characteristics, Male/Female ratio were 60/20, 7/5 and 1228/785, respectively($p=0.04$, HBV(+)-hepatitis(-) $p=0.04$). Wait time(median, days) were 1550.8+-1145.5, 1434.3+-957.2 and 2188+-1207.9, respectively($p<0.001$, HBV(+)-hepatitis(-) $p<0.001$). In post-transplant results, there were no significant differences in follow-up serum creatinine, survival, postop hospital day and complication between the 3 groups. From a Kaplan-Meier analysis, overall patient survival rates after KT at 5 years were 95%, 100% and 76.2%, respectively(HBV(+)-hepatitis(-) $p<0.001$). Overall graft survival rates after KT at 5 years were 95%, 83.3% and 84.5%, respectively(HBV(+)-hepatitis(-) $p=0.02$).

Conclusion: There were no differences in baseline, postop and follow-up serum creatinine between the 3 groups. Moreover, 5-year patient and graft survival were significantly higher in HBV(+) grafts than in hepatitis(-) grafts. Do not hesitate to consider implementing brain-dead donor transplantation from hepatitis(+) donors to hepatitis(-) recipients.