

# 항바이러스제 도입 이후 만성 B형 간염 환자의 신장 이식 후 장기 경과

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## Long-Term Outcome of Hepatitis B-Positive Renal Allograft Recipients after Development of Antiviral Treatment

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Hepatitis B virus (HBV) infection can be aggravated by immunosuppressive therapy and adversely affect clinical outcome of kidney transplantation (KT). Short-term efficacy of lamivudine has been demonstrated for chronic HBV infection in renal allograft recipients. To clarify long-term impact of antiviral agents for HBV-positive renal allograft recipients, we retrospectively reviewed 94 hepatitis B surface antigen (HBsAg) positive (male 73%) and 282 age-sex matched HBsAg negative patients who had undergone KT from February 1997 to November 2009, after lamivudine had come into wide use. Mean follow-up was 75.7 and 78.6 months, respectively. 56 received antiviral agent (51 of lamivudine and 5 of entecavir) for prophylaxis, and other 18 patients (16 of lamivudine and 2 of entecavir) for HBV reactivation. During follow-up, 15 patients (16%) died. Of these 15, there were five HBV related deaths (5%). Although patient survival rate was significantly lower than HBsAg negative controls (89% vs. 94% at 5 years and 78% vs. 88% at 10 years,  $p=0.031$ ), graft survival was comparable (86% vs. 92% at 5 years and 73% vs. 81% at 10 years,  $p=0.113$ ). Of the 26 hepatitis B e antigen (HBeAg) positive patients, 14 experienced HBV reactivation, but all survived with stable serum alanine aminotransferase level, except for one patient who died of hepatocellular carcinoma (113 months after KT). Only one patient had HBeAg clearance. Among 57 HBeAg negative patients, 7 developed HBeAg reversions and one had HBsAg clearance. 12 patients died, but other 45 survived with stable hepatic function. In conclusion, after treatment of hepatitis B-positive renal allograft recipients with antiviral agent, HBV still be a risk factor for patient death, but graft survival will not be adversely affected by HBV infection.

**Key Words:** B형 간염, 신장 이식, 라미부딘  
Hepatitis B, Kidney transplantation, Lamivudine

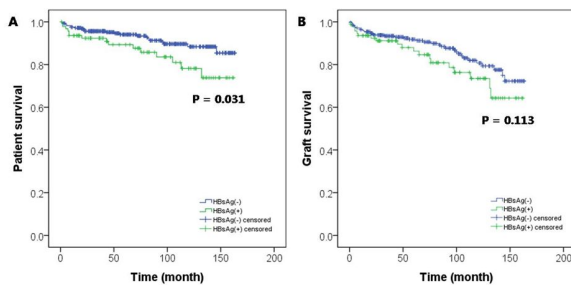


Figure 1. Patient (A) and graft (B) survival of hepatitis B surface antigen positive renal allograft recipient compared with age/sex-matched control.

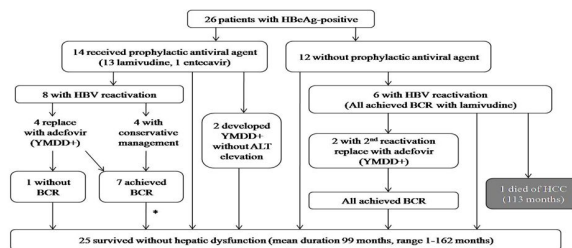


Figure 2. Clinical outcomes of HBeAg-positive renal recipients. HBV, hepatitis B virus, BCR, biochemical response, HCC, hepatocellular carcinoma, ALT, alanine aminotransferase \* 1 patient acquired HBeAg clearance without seroconversion 80 months after renal transplantation.

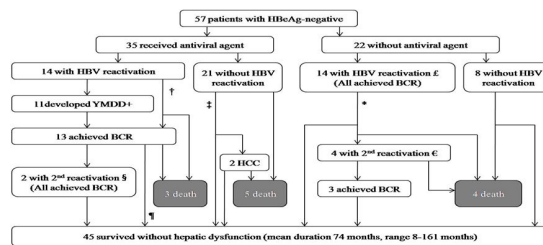


Figure 3. Clinical outcomes of HBeAg-negative renal recipients. HBV, hepatitis B virus, BCR, biochemical response, HCC, hepatocellular carcinoma \* 2 patients developed HBeAg reversion, then 1 acquired HBeAg seroconversion 25 months after reversion. † 2 patients developed HBeAg reversion. ‡ 3 patients developed HBeAg reversion, then 1 acquired HBeAg seroconversion 16 months after reversion. § 1 replaces lamivudine with entecavir due to YMDD mutation, another replace entecavir with lamivudine. ¶ 10, 2 and 2 patients received lamivudine, entecavir and conservative therapy, respectively. †† 2 and 2 patients received lamivudine and entecavir (1 with YMDD mutation), respectively. ††† 1 patient achieved HBeAg loss, 73 months after renal transplantation.