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BK 바이러스 혈청 검사가 이식신 예후에 미치는 임상적 중요성

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The Clinical Impact of BK Virus Surveillance on Outcomes in Kidney Transplant Recipients

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Background: The objective of this study was to investigate the clinical impact of BK virus surveillance to prevent BK virus associated graft injury in kidney transplantation.

Methods: We evaluated the prevalence of BK viremia using plasma quantitative polymerase chain reaction (PCR) and BK virus associated nephropathy (BKVAN) and the clinical impact of BK viremia on graft outcomes in the kidney transplant recipients between January 2008 and June 2013.

Results: In this study, 213 kidney transplant recipients were included. The prevalence of BK viremia and high BK viremia (>1×10^4 copies/mL) were 66.7% (142/213) and 17.4% (37/213) respectively. Nine cases were finally diagnosed as BKVAN by allograft biopsy. Although low BK viremia (<1×10^4 copies/mL) group had comparable eGFR after transplantation, high BK viremia group showed significantly lower eGFR at 6, 12 and 18 months after transplantation when compared with no viremia group. In receiver operating characteristic curve analysis, area under the curve of peak BK viremia for the diagnosis of BKVAN was 0.980. We found 92,850 copies/mL was significant cut-off level to predict BKVAN with 89% sensitivity and 94.6% specificity.

Conclusion: High BK viremia was associated with poor graft function after kidney transplantation. The serial monitoring of BK viremia in kidney transplant recipients was helpful to predict BKVAN and might prevent further progression.

Key Words: 신이식, BK virus, 혈청 검사
Kidney transplantation, BK virus, Serum PCR