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## **Pre- and Post- Transplant BK Virus-Specific ELISPOT Assay for Predicting the outcome of BK virus infection in Kidney Transplant Recipients**

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**Introduction:** It is needed to plan optimal therapeutic strategies for controlling BK viremia. Our previous study showed that BK virus (BKV)-specific T-cell immunity measured by an interferon-enzyme-linked immunospot (ELISPOT) are related to outcome of BKV infections. However, there was limitations about difference of time and viremia status.

**Methods:** We included 84 KTRs who experienced at least one BK viremia at RQ-PCR of BKV-DNA. BKV-ELISPOT were measured in all included recipients at the time of pre-transplant, post- 4 weeks , post- 12 weeks transplant, and when viremia were detected. We divided into two groups Controller and Noncontroller according to sustained duration of BKV infection. We compared BKV-ELISPOT results at each times.

**Results:** We reduced or stop mycophenolic acid in 88.6% of BK viremia patients and used leflunomide for 48% patients ( 38.6% and 70% for each group). BKV-ELISPOT results were higher in controller groups at the time of pre-transplant, 4 weeks post-transplant, 12 weeks post transplant, first viremia detected. When first viremia detected, we analyzed BKV ELISPOT including five BKV peptide mixes. Controller group had higher LT, ST, VP1,VP2 ELISPOT results. Also, Those who had no biopsy proven BKVAN had higher LT, ST, VP1, VP3 ELISPOT results.

**Conclusion:** Pre- and Post- BKV-ELISPOT assay may help to distinguish patients with well controlling BK Viremia from those who have persisting BK Viremia who need more intensive therapy to prevent BKVAN.