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BK virus nephropathy Coincident with Acute pyelonephritis

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Case Study:

Introduction)

BK virus is a ubiquitous polyoma virus that lies in uroepithelial cell can reactivate when host is immunocompromised state.

In KT recipient, BK virus occurs in early post KT state because most intensive immunosuppression has been done.

We present a case of BK virus nephropathy after deceased donor kidney transplantation and coincident with acute pyelonephritis.

Result)

59-year-old female who undergone deceased donor post kidney transplanted state, had a fever 3 days ago before admission. Also, Sudden decrease of renal function. She was diagnosed T2DM with diabetic nephropathy and she was on hemodialysis since 2012-02 through before KT. She had a deceased donor kidney transplantation 2019-02-18. At that time, she was treated with anti-human thymocyte immunoglobulin 75mg as an induction therapy. Other immunosuppressive agent, tacrolimus, mycophenolate (MMF), and prednisolone were used as a maintenance therapy. The tacrolimus TDM was maintained from 6 to 14 through following.

In laboratory study, BUN, Cr was increased comparing last exam. (BUN/Cr 29.7/2.14 mg/dL & 31.0/1.38 mg/dL). To evaluate fever and azotemia, kidney biopsy and urine cytology, urine culture and serum BK virus PCR was done.

The biopsy result showed that virus particles in the tubular epithelial cells. Immunochemical staining SV40 T antigen result was positive. (Polyoma virus nephropathy, grade B2)

In urine cytology the decoy cells were exist. BK virus PCR 999,686 copies/mL that increasing copies comparing last exam 397,042 copies/mL.

In urine culture, the result showed that ESBL(+) E.coli was growing.

The patient reduced Tacrolimus dose and tacrolimus TDM adjusted to lower limit. (TDM 6-8) After decreasing immunosuppressive medications and using antibiotics, BUN/Cr was getting better and fever also improved.

Conclusion)

In KT recipient, Immunosuppression treatment have pros and cons. BK virus PCR check regularly and if the titer is significantly increased, decreasing immunosuppression treatment will help recipient immune system recovery.