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LETTER TO THE EDITORS

BK virus screening and management practices among US renal transplant programs: a survey

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Dear Sirs,

BK virus (BKPyV) is a human polyomavirus that is associated with allograft dysfunction and loss among renal transplant recipients [1,2]. Early intervention in the setting of BKPyV reactivation has been shown to be effective in preventing the development of polyomavirus-associated nephropathy (PyVAN) [3]. Universal BKPyV surveillance is therefore recommended for renal transplant recipients [4]. Available assays for BKPyV surveillance include polymerase chain reaction (PCR) testing of urine or blood and urine cytology. The optimal frequency and method for BKPyV surveillance are not clear. The 2013 American Society of Transplantation Infectious Diseases Guidelines recommend that some form of screening be performed at least every 3 months for the first 2 years [4]. More frequent testing may identify patients at risk for PyVAN earlier and should be considered in centers with higher BKPyV incidence [3,4]. As there are no safe and effective anti-BKPyV therapies available, management consists primarily of decreasing the level of immunosuppression [4,5]. However, the approach to the reduction of immunosuppression and the use of adjuvant therapies has not been standardized.

We conducted a survey to assess BKPyV surveillance and management practices at transplant centers across the United States. Using the United Network for Organ Sharing (UNOS) website, all US transplant centers that performed more than 50 renal transplants in 2011 were identified ($N = 110$). A 10-question, multiple-choice, web-based (Survey Monkey®, Palo Alto, CA, USA) survey on BKPyV screening and management practices was sent to a transplant surgeon, nephrologist, and infectious disease (ID) physician at each institution. Survey responses were collected and analyzed using Excel. BKPyV screening and management practices were summarized.

We received survey responses from 48 providers from 42 of 110 (38%) centers. All 11 Organ Procurement and Transplantation Network (OPTN) regions were represented among the survey respondents. The 42 centers represented in this survey performed 41% of adult renal transplants in 2011. 48% of respondents were nephrologists, 31% surgeons, and 21% ID physicians. There was great variability in reported screening modality and frequency across centers (see Fig. 1). Additionally, among the six centers for which there were multiple respondents from different specialties, all six reported different screening and management practices within the same center. Regarding BKPyV management, all providers reported reducing immunosuppression in response to BKPyV reactivation. In addition, some respondents reported utilization of leflunomide (46%), cidofovir (21%), a quinolone (15%), and intravenous immunoglobulin (IVIG) (8%). The criteria for intervention varied between institutions, with the most commonly reported indications being any BK viremia (52%) and BK viremia > 10 000 copies/ml (40%).

There is a lack of consensus regarding BKPyV management among experts and various society guidelines. Therefore, despite a suboptimal survey response rate, we believe that the variability in the approach to BKPyV screening and management reported by our respondents accurately reflects widespread BKPyV screening and management practices. Nonetheless, the impact of the various preemptive practices on kidney transplant outcomes has been positive, as evidenced by a decline in BK nephropathy and allograft loss. Multicenter studies comparing BKPyV screening and treatment approaches may further improve patient and allograft outcomes and cost-effectiveness.

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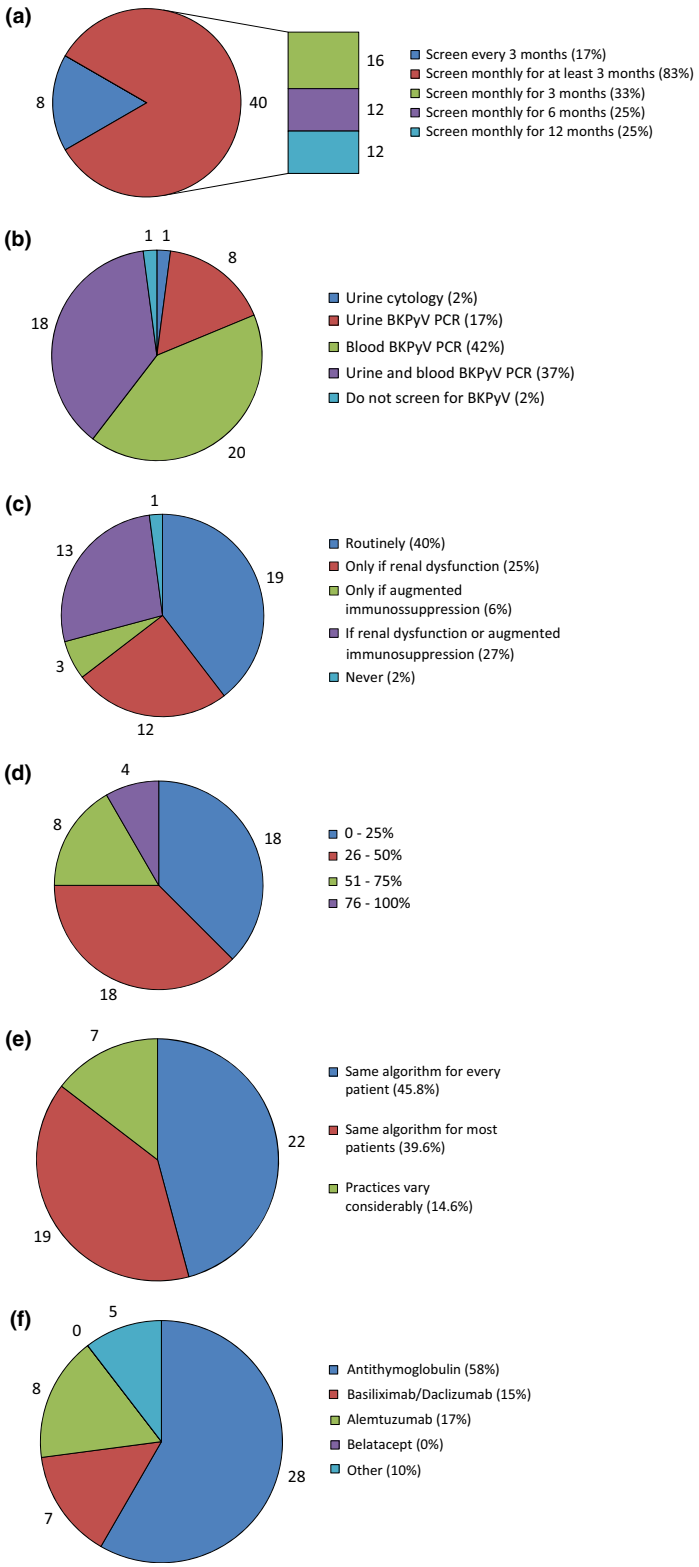

Figure 1 BKPyV surveillance practices among renal transplant providers ($N = 48$). (a) Frequency of BKPyV screening. (b) Test(s) used to screen for BKPyV reactivation. (c) BKPyV screening beyond the first 12 months post-transplantation. (d) Reported consistency in BKPyV surveillance. (e) Percentage of patients with BKPyV reactivation who undergo kidney biopsy. (f) Standard induction immunosuppression agent.

References

1. Hirsch HH, Knowles W, Dickenmann M, *et al.* Prospective study of polyomavirus type BK replication and nephropathy in renal transplant recipients. *N Engl J Med* 2002; **47**: 488.
2. Hirsch HH, Vincenti F, Friman S, *et al.* Polyomavirus BK replication in de novo kidney transplant patients receiving tacrolimus or cyclosporine: a prospective, randomized, multicenter study. *Am J Transplant* 2013; **13**: 136.
3. Brennan DC, Agha I, Bohl DL, *et al.* Incidence of BK with tacrolimus versus cyclosporine and impact of preemptive immunosuppression reduction. *Am J Transplant* 2005; **5**: 582.
4. Hirsch HH, Randhawa P, and the AST Infectious Diseases Community of Practice. BK polyomavirus in solid organ transplantation. *Am J Transplant* 2013; **13**: 179.
5. Johnston O, Jaswal D, Gill JS, *et al.* Treatment of polyomavirus infection in kidney transplant recipients: a systematic review. *Transplantation* 2010; **89**: 1057.