Abstract:

Perception, diagnosis and management of BK polyomavirus replication and disease in paediatric kidney transplant recipients in Europe

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Background BK polyomavirus (BKPyV)-associated nephropathy remains a challenge to the success of kidney transplantation, but its impact varies in different transplant programmes.

Methods We investigated current practice through a web-based questionnaire made available by the European Society for Paediatric Nephrology (ESPN).

Results A total of 90 physicians (23% of 391 active members) from 27 countries participated in the study. BKPyV-associated nephropathy is seen in 1–5% of patients annually with treatment success in 30–60%, and graft loss in 10%. Quantitative BKPyV load testing is available to >90% of physicians. Screening is performed in urine alone in 26%, in urine and blood in 37% and in blood alone in 37%. Most physicians (47%) screen at month 1, 2, 3, 6, 9 and 12 post-transplant. For patients with baseline renal function and plasma BKPyV loads of 10 000–1 000 000 copies/mL, 50% report performing renal biopsies prior to intervention. Intervention consists of reducing immunosuppression first with mycophenolate (Myc) in 40%, first with calcineurin inhibitors (CNI) in 29% or with both in 31%. Changing immunosuppressive drugs is considered mainly for biopsy-proven nephropathy consisting of discontinuation of Myc in 75%, and switching from CNI to mTOR inhibitors (52%). Cidofovir, intravenous immunoglobulin G, leflunomide and fluoroquinolones are used in less than one-third of this group. Furthermore, 66% of participants see a need for new antiviral drugs and new immmunosuppressive strategies, and almost 90% are willing to participate in future observational and interventional trials.

Conclusion This ESPN survey suggests that prompt translation of a positive screening test into reducing immunosuppression could improve outcomes.

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Commentary:
Although BK nephropathy is not a new entity, many areas of uncertainty exist: is not clear how to react to positive patients and it is not even completely clear how much it impacts on the clinical course of the graft. Surveillance protocols and treatment approaches are not homogenous among centers.
This survey from the ESPN Transplant working group reflects the European approach to BK nephropathy. BK nephropathy rate in Europe appears consistent with that generally reported in the literature and it is followed by graft loss in less than 10 % of patients. Treatment was effective only in less than half of cases. Whereas blood detection is part of the evaluation for the majority of physicians, quite surprisingly, not everyone requires a renal biopsy to confirm the nephropathy. Considering all the uncertainty concerning BK, this survey is highly welcome. It might represent a stimulus for a concerted action, which might introduce common criteria for diagnosis and treatment.
At a wider level, this survey has shown that designing projects on a European basis is feasible, and proves to be a powerful tool to answer to clinical dilemmas. The use of common facilities such as the Certain Registry, which includes detailed data from European transplanted children, may provide a common instrument enabling us to share research projects.