Evolution of the art and science of kidney transplantation in HIV positive patients

Once considered prohibitive, kidney transplantation in HIV (+) recipients is achieving outcomes similar to comparable recipients without HIV. These successes are possible because of incremental improvements in care that resulted from lessons learned from the last two decades of care at centers that had a high volume of HIV + transplants.

Our paper in AJKD describes an overview of the lessons learned and advances realized in our single center experience. These advances in the care of HIV (+) kidney transplant recipients include: improved immunosuppression management, better tolerated anti-retroviral therapy, selective donor kidney allograft management, outcome focused post-transplant monitoring, and therapies directed towards common comorbidities. (Fig. 1)

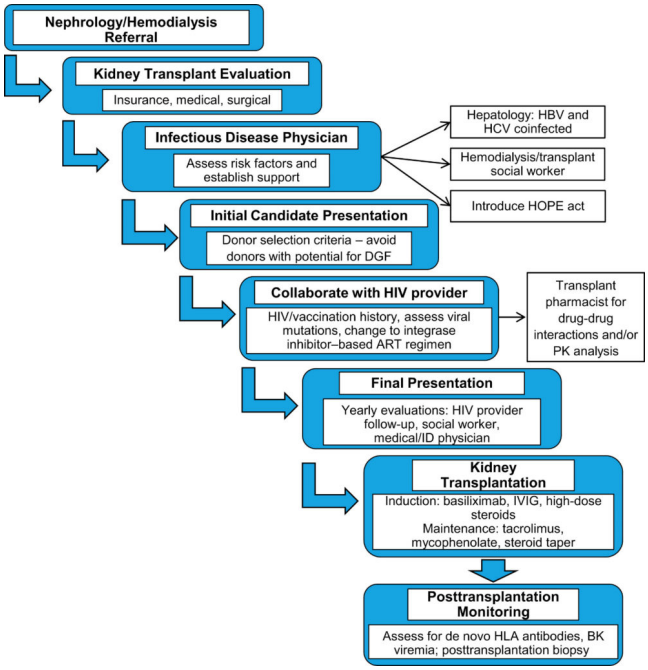

Fig. 1.

Immunosuppression management starts with effective induction therapy and therapeutic maintenance immunosuppression. The manuscript outlines the immunosuppression protocol used in our experience in the HIV (+) population. We utilize effective, targeted induction immunosuppression for immediate prophylaxis against cellular and antibody mediated recognition against the kidney allograft. Second, our maintenance immunosuppression protocol incorporates agents proven in the general kidney transplant population, along with therapeutic drug monitoring.

We next review the improvement in anti-retroviral therapy that somewhat paralleled the changes in immunosuppression over time. Historically, the available anti-retroviral agents made dosing immunosuppression challenging, with dosing schemes that, unfortunately, led to both decreased efficacy and increased toxicity. Over time, better anti-retroviral agents came on line that had a high threshold for resistance against the HIV virus and fewer drug-drug interactions. The use of these agents has allowed for more consistent immunosuppression dosing which has likely contributed to the decreased allograft rejections rates and improved allograft survival reported in the more recent cohorts of patients.

Delayed graft function, defined as the need for dialysis support within the first week after kidney transplant, occurs~ 30 – 50% of the time. We and others have previously reported that the survival of kidneys transplanted into the HIV (+) population is suboptimal if delayed graft function occurs after kidney transplantation. Why this deleterious effect is so magnified in HIV (+) kidney transplants remains incompletely understood. In our article, we describe our approach to mitigate these negative effects with specific protocols that focused on thoughtful kidney donor management that minimized delayed graft function for HIV + recipients.

We also address our clinical approaches to the increased risk of rejection seen with HIV (+) kidney transplantation where there is a pronounced role for both cellular and humoral immunologic pathways and markedly decreased allograft survival once rejection occurs. We describe reduced rates of rejection over time with a number of specific clinical protocols including pre-transplant evaluations of drug-drug interactions and alterations in anti-retroviral therapy, immunosuppression choices, and the addition of standard post-operative IVIG.

Based on the lessons reviewed, we outline a stepwise process for managing kidney transplantation in the HIV population. This process includes specific recommendations for a successful transition from candidate evaluation through post-transplant monitoring of an HIV (+) kidney transplant recipient and highlights the multidisciplinary team that we feel is integral to a successful in the care of such patients.

Our hope is that by providing an overview of the lessons our center learned in HIV (+) kidney transplantation, other centers can adapt their practice, allowing for sustainable improvement in national outcomes in this population.

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