Long Term Outcomes of Highly Sensitized Kidney Transplant Recipients

Jude Yagan MD,MSc, Colm Magee,Belinda Lee,Stefan Tuluis,Helen Mah,Steve Gabardi , Anil Chandraker MD,FRCP,FASN

Brigham anf Women's Hospital- Harvard Medical School .Boston,MA-USA , Transplantation Research Center

OBJECTIVES

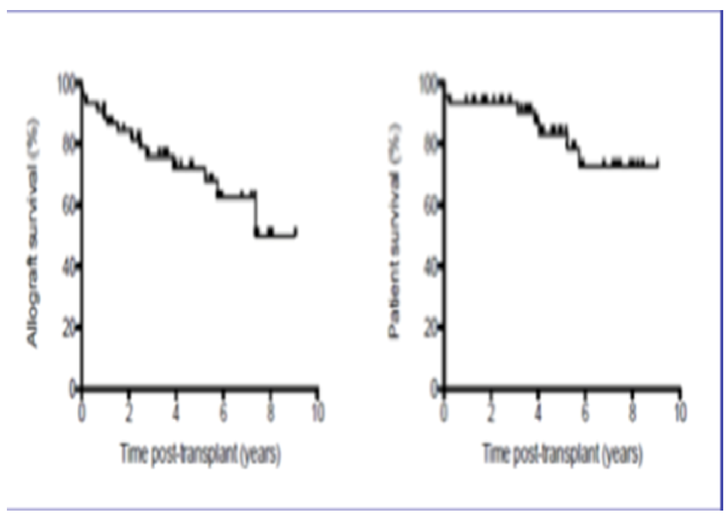
To follow the clinical outcomes of 45 highly sensitized patients who had undergone a desensitization protocol prior to kidney transplantation, and report the incidence of complications, allograft survival, and patient survival.

METHODS

We conducted a retrospective review of 45 kidney transplant recipients transplanted between 9/2002 and10/2011, who had a positive T or B cell complement dependent cytotoxic (CDC) crossmatch assay. B cell CDC crossmatches were confirmed with a solid-phase assay to determine presence of class II anti-HLA antibodies.

All subjects completed a desensitization protocol of plasmapheresis, intravenous immunoglobulin, +/- rituximab to render a negative T cell crossmatch or a negative or weak titer B cell crossmatch 24 hours prior to transplantation. Post-transplant all recipients received antibacterial and antiviral prophylaxis; allograft biopsies were performed when clinically indicated.

The mean and median follow-up was 5 years



RESULTS

- Thirty-three subjects (73%) suffered acute rejection of the allograft, 30 (67%) occurred in the first year post-transplant, and 27 (60%) occurred in the first month post-transplant.
- There was 1 case of hyperacute rejection necessitating transplant nephrectomy.
- Twenty-nine of the 33 (88%) were cases of acute antibody mediated rejection. BK viremia occurred in 7 patients (15.5%), leading to graft loss in 3.
- There were 5 patients that suffered multiple pneumonias, 5 cases (11%) of bacteremia, 1 case of fungemia, and 4 patients (8.8%) with cytomegalovirus infection.
- There were no cases of lymphoproliferative disease, although 1 patient developed an aggressive cutaneous angiosarcoma and died. There was also one case of renal cell carcinoma, and 4 cases (9%) of skin malignancies.
- The 1, 3, and 5 year allograft survival *was 87%, 76%, and 68%* respectively. The 1, 3, and 5 year patient survival *was 93%, 91%, and 84% respectively.*

CONCLUSIONS

Patients with a positive CDC crossmatch that are transplanted after a plasmapheresis-based desensitization protocol *have high rates of acute rejection and infectious complications*. Despite increased rate of rejection and over-immunosuppression, *patient and graft survival in the desensitized group is comparable* to the 1, 3, 5 year survival (graft: 89%, 78%, 67% respectively; patient: 95%, 90%, 85% respectively) of recipients of repeat transplants from living donors.

References

1. Organ Procurement and Transplantation Network (OPTN) and Scientific Registry of Transplant Recipients (SRTR) OPTN/SRTR 2010 Annual Data Report. [Available at: http://optn.transplant.hrsa.gov/].

1. Patel R, Terasaki PI. Significance of the positive crossmatch test in kidney transplantation. N Engl J Med. 1969 Apr 3;280(14):735-9.

1. Stegall MD, Gloor J, Winters JL, Moore SB, Degoey S. A comparison of plasmapheresis versus high-dose IVIG desensitization in renal allograft recipients with high levels of donor specific alloantibody. Am J Transplant. 2006 Feb;6(2):346-51.

2. Haririan A, Nogueira J, Kukuruga D, Schweitzer E, Hess J, Gurk-Turner C, et al. Positive cross-match living donor kidney transplantation: longer-term outcomes. Am J Transplant. 2009 Mar;9(3):536-42.

1. Montgomery RA, Zachary AA. Transplanting patients with a positive donor-specific crossmatch: a single center's perspective. Pediatr Transplant. 2004 Dec;8(6):535-42.

DOI: 10.3252/pso.eu.51era.2014