Small vessel vasculitis (SVV) commonly affects the kidney and can progress to end stage renal disease (ESRD). Of these patients, around 30% have received a renal transplant in the last 10-15 years. Past studies have focused on the effects of graft and patient survival due to mostly ANCA-associated SVV.

The purpose of this study is to compare the 1, 5 and 10-year survival outcomes between patients who received renal transplant as a result of SVV to those who received it due to non-vasculitis ESRD (non-SVV).

This is a retrospective analysis of United Network for Organ Sharing (UNOS) registry data for adult primary kidney transplants from January 2000 to December 2014. SVV patients (N = 2196) were compared to a matched group of non-SVV patients (N = 6588). Patient groups were case matched for recipient age, race, gender, donor type, and year of transplant in a 1:3 ratio. Kaplan-Meier curves of graft and patient survival were designed. Multivariable Cox regression analysis was conducted to determine independent predictors of graft and patient survival.

### Results

- Median graft survival time: 13.0 yrs for SVV group and 10.6 yrs for non-SVV group.
- Median patient survival time: 14.3 yrs for SVV group and 12.3 yrs for non-SVV group.
- New-onset diabetes after transplant: 8.3% SVV group and 11.3% non-SVV group.
- No significant difference in CMV sero-conversion in both groups.
- Recurrence in 17 patients in SVV (0.8%): 7 patients graft failure, 3 due to recurrence.
- SVV had higher risk of developing post-transplant solid organ malignancies (11.3% vs. 9.3%, p = 0.006) and lymphoproliferative disorder (1.3% vs. 0.8%, p = 0.026).
- Most common cause of death in SVV group was malignancies (21%), as compared to cardiovascular (21%) in non-SVV group.

### Summary

- Renal transplantation in ESRD patients due to SVV has favorable long-term graft and patient outcomes compared to other ESRD causes.
- Patients with renal transplantation secondary to SVV had a low disease recurrence rate (0.8%).
- SVV transplant group had lower new-onset diabetes compared to other ESRD causes.
- Most common cause of death in SVV patient was malignancy.

### Methods

This is a retrospective analysis of United Network for Organ Sharing (UNOS) registry data for adult primary kidney transplants from January 2000 to December 2014. SVV patients (N = 2196) were compared to a matched group of non-SVV patients (N = 6588). Patient groups were case matched for recipient age, race, gender, donor type, and year of transplant in a 1:3 ratio. Kaplan-Meier curves of graft and patient survival were designed. Multivariable Cox regression analysis was conducted to determine independent predictors of graft and patient survival.

### Conclusion

Renal transplant patients with SVV appear to have a favorable graft and patient survival compared to other ESRD patients. The risk of vasculitis relapse appears to be minimal. However, the risk of malignancy may be increased and contributes to the cause of death in this population.

### Acknowledgments

NIH National Center for Advancing Translational Sciences through grant number UL1TR001998.