### Objective(s)

The improved longevity of heart transplant recipients demands heightened awareness of the long-term complications. In those with advanced heart failure, orthotopic heart transplantation (OHT) is the gold standard of care. However, little is known about the impact of symptomatic PVD on survival of OHT recipients. The aim of this study is to investigate the relationship between recipient symptomatic PVD and survival after heart transplantation.

### Methods

We retrospectively analyzed the United Network for Organ Sharing (UNOS) adult heart transplant data from January 2000 to December 2013. PVD was noted in 41,697 patients (51%). Recipients were stratified by presence of PVD: no PVD (n= 40,373, 96.8%) and PVD (n = 1,324, 3.2%). Demographic and outcomes data were analyzed, with a primary end-point of 10-year survival.

### Results

OHT recipients with PVD were significantly older (55.6 ± 10.0) compared to those without PVD (45.6 ± 19.1, p = 0.001). PVD patients were also noted to have a significantly higher incidence of insulin dependent diabetes (32.5% vs. 14.1%, p = 0.001). Donors did not differ in gender (p=0.84), left ventricular ejection fraction (p=0.47) or allograft ischemic time (p=0.33); however, donor allografts to PVD patients were significantly older than those grafts to patients without PVD (31.4 ± 13.2 vs. 28.2 ± 14.5, p= 0.0001). Patients with pre-transplant symptomatic PVD had poorer post-transplant mortality compared with those without PVD (1-, 5- and 10-year survival rate 98.4% vs. 98.5%, 92.1% vs. 92.5%, 48.7% vs. 59.7% respectively, log-rank p = 0.0018). On propensity matched multivariate analysis to control primarily for donor and recipient age, factors associated with a lower survival rate were presence of PVD (hazard ratio 1.37, 95% CI 1.12 to 1.56, p = 0.028), presence of insulin dependent diabetes (hazard ratio 1.6, 95% CI 1.43 to 1.91, p = 0.030) and female gender (hazard ratio 1.25, 95% CI 1.19 to 1.33, p = 0.046).

### Conclusions

For patients with pre-transplantation symptomatic PVD, a lower survival rate of post heart transplantation was noted. As a result, symptomatic PVD should be considered an independent risk factor for poor prognosis in patients undergoing OHT evaluation. Aggressive management and intervention of symptomatic disease in this subpopulation may forestall and prevent the progression of peripheral vascular disease after heart transplant.