

## BACKGROUND

Cardiac allograft vasculopathy (CAV) remains a vexing problem limiting survival beyond the early posttransplant years. While global coronary artery flow reserve (CFR) may detect early CAV, standard “norms” have not yet been established in heart transplant recipients (HTR). It is further unsettled whether these CFR should be based on recipient or donor age. The recipient-donor age mismatch in HTR provides a unique opportunity for such study using cardiac stress PET (CPET).

## METHODS

The CPET database at Intermountain Medical Center was queried for HTR with normal coronary arteries (CAV0). CFR were derived from the CPET preceding the normal coronary angiograms. The study group was age and gender-matched in a 1:2 fashion to a control group of non-transplant patients with normal CPET and coronary arteries.

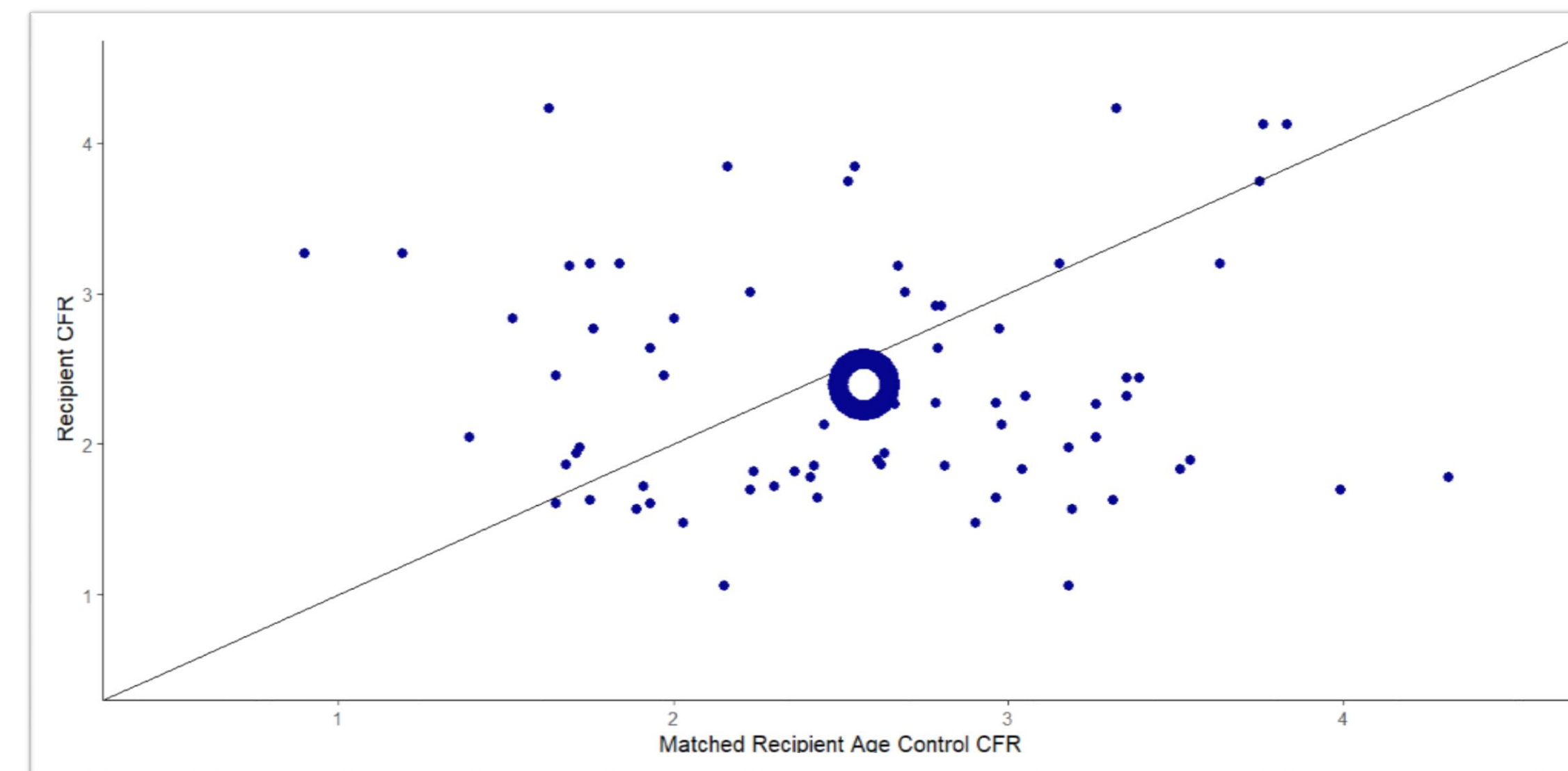
## RESULTS

36 HTR and 72 controls were eligible for inclusion. Average recipient age was  $60 \pm 13$  years, 81% were male; average donor age was  $34 \pm 9$  years, 78% were male; average time-since-transplant was  $9 \pm 2$  years (table1). The HTR's resting heart rate was higher than the control (Table2). The mean CFR (ml/g/min) of HTR and controls were  $2.39 \pm 0.8$  and  $2.45 \pm 0.84$  ( $p=0.72$ ) respectively (figure1) despite the differences in resting and stress heart rate between the HTR and control ( figure2)

**Table 1 HRT and donor Characteristics**

HRT average age (std) yrs	60.17(13.17)
HRT Male (%)	80.6%
Time since transplant (std) (yrs)	9.1 (2.7)
Donor heart age (std) (yrs)	33.1(9)
Donor male (%)	77.8

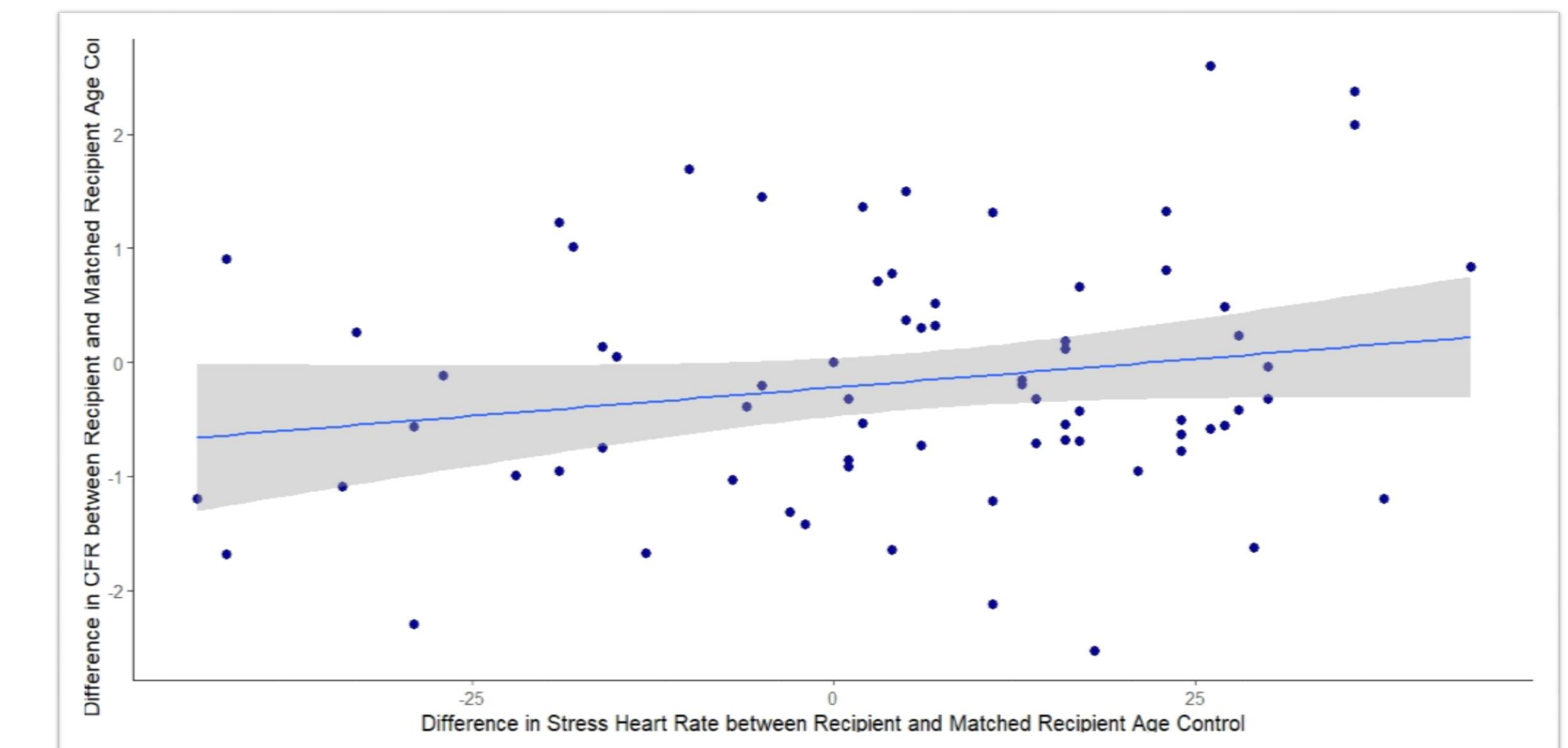
Figure 1



**Table 2**

	Recipient	Recipient Age Matched Control	pvalues*
Rest Heart Rate, mean (std)	82.5 (13.0)	70.6 (14.8)	<0.0001
Stress Heart Rate, mean (std)	95.4 (15.2)	90.3 (15.8)	0.04

Figure 2



## CONCLUSIONS

Our study suggests that the CFR for HTR match the expected values in non-transplant controls when based on recipient age . Hence it is reasonable to use the normal CFR range of general population as reference in HTR. That the CFR in HTR is recipient rather than donor age-driven is most intriguing and deserves further investigation