



Use of “Needle in the Arm” Donors for Urgent Status Recipients in Heart Transplantation

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Abstract

Background: Drug abuse (DA) donors are deemed high risk in heart transplantation (HTx) due to risk of infection transmission, including HIV and hepatitis C. Donors with recent exposure to illicit drugs may not demonstrate positive serology at time of donation due to short incubation period. Whether recent intravenous (IV) DA (cocaine, methamphetamine, morphine or opioids) portends worse outcome after HTx has not been determined. However, there is rationale to use these high risk donors in urgent status recipients in order to save lives. We assessed outcomes after HTx of patients (pts) with extreme high-risk IVDA donors.

Methods: Between 2007-2014 we identified 45/518 HTx pts whose donors had IVDA within 2-4 weeks prior to declaration of brain death. These high risk donors were allocated to status 1 patients. Endpoints included 3-yr survival, 1-yr freedom from any-treated rejection (ATR), 1-yr freedom from infection, 3-yr freedom from cardiac allograft vasculopathy (CAV) ($\geq 30\%$ angiographic stenosis) [Table]. Incidence of primary graft dysfunction (PGD) was also assessed. This group was compared to pts who received non-high risk donors in the same era (n=473).

Results: All pts had negative serologies for HIV and hepatitis C at the time of transplant. There was no significant difference in PGD, first-yr infection, rejection or 3-yr survival and freedom from CAV relative to the control. No transmission of hepatitis C or HIV was detected in the first 3 months post-HTx by routine surveillance monitoring.

Conclusion: Donors with recent illicit IVDA for urgent status patients do not appear to be a contraindication to HTx. This will increase the donor pool and save lives.

Background

- Drug abuse (DA) donors are deemed high risk in heart transplantation (HTx) due to risk of infection transmission, including HIV and hepatitis C.
- Donors with recent exposure to illicit drugs may not demonstrate positive serology at time of donation due to short incubation period.
- Whether recent intravenous (IV) DA (cocaine, methamphetamine, morphine or opioids) portends worse outcome after HTx has not been determined.
- However, there is rationale to use these high risk donors in urgent status recipients in order to save lives.

Purpose

- We assessed outcomes after HTx of patients (pts) with extreme high-risk IVDA donors.

Methods

- Between 2007-2014 we identified 45/518 HTx pts whose donors had IVDA within 2-4 weeks prior to declaration of brain death.
- These high risk donors were allocated to status 1 patients.
- Endpoints included:
 - 3-yr survival
 - 1-yr freedom from any-treated rejection (ATR)
 - 1-yr freedom from infection
 - 3-yr freedom from cardiac allograft vasculopathy (CAV) ($\geq 30\%$ angiographic stenosis)
 - Incidence of primary graft dysfunction (PGD)
- This group was compared to pts who received non-high risk donors in the same era (n=473).

Demographics

Demographic	Drug Abuse Donors (n=45)	Non-High Risk Donors (n=473)	P-Value
Mean Recipient Age, Years $\pm$ SD	54.8 $\pm$ 14.5	55.7 $\pm$ 13.2	0.634
Mean Donor Age, Years $\pm$ SD	31.2 $\pm$ 10.2	34.5 $\pm$ 13.1	0.046
Body Mass Index, Mean $\pm$ SD	25.1 $\pm$ 4.6	25.6 $\pm$ 4.3	0.579
Female (%)	13.3%	28.8%	0.034
Previous Pregnancy in Females (%)	66.7%	78.7%	0.486
Ischemic Time, Mean Mins $\pm$ SD	174.9 $\pm$ 63.2	165.4 $\pm$ 61.3	0.325
Primary Reason for Transplant, Underlying Diagnosis of Coronary Artery Disease (%)	44.2%	44.9%	0.568
Status 1 at Transplant (%)	71.1%	71.5%	0.961
Cytomegalovirus Mismatch (%)	21.4%	21.6%	0.982
Diabetes Mellitus (%)	13.3%	28.8%	0.027
Treated Hypertension (%)	42.5%	49.2%	0.418
Insertion of Mechanical Circulatory Support Device (%)	15.6%	21.8%	0.326
Prior Blood Transfusion (%)	32.5%	33.8%	0.867
Pre-Transplant PRA $\geq 10\%$ (%)	77.8%	72.7%	0.465
Pre-Transplant Creatinine, Mean $\pm$ SD	1.3 $\pm$ 0.5	1.5 $\pm$ 1.2	0.045
ATG Induction Therapy (%)	48.8%	49.9%	0.895

Outcomes

Endpoints	Drug Abuse Donors (n=45)	Non-High Risk Donors (n=473)	P-Value
3-Year Survival	86.7%	83.5%	0.681
1-Year Freedom from Any-Treated Rejection	86.1%	84.5%	0.969
1-Year Freedom from Infection	64.4%	55.6%	0.207
3-Year Freedom from CAV	86.7%	88.1%	0.733
Incidence of Primary Graft Dysfunction, %	4.4%	6.3%	1.000

Results Summary

- All pts had negative serologies for HIV and hepatitis C at the time of transplant.
- There was no significant difference in PGD, first-yr infection, rejection or 3-yr survival and freedom from CAV relative to the control.
- No transmission of hepatitis C or HIV was detected in the first 3 months post-HTx by routine surveillance monitoring.

Conclusion

- Donors with recent illicit IVDA for urgent status patients do not appear to be a contraindication to HTx.
- This will increase the donor pool and save lives.

Author Disclosures

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