



Simultaneous Kidney-Pancreas Transplantation - The VGH Experience

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Background

- Demand for renal transplantation continues to exceed organ supply
- Patients with Chronic Renal Failure (CRF) and Type I Diabetes Mellitus (DM) have higher mortality than CRF without Type 1 DM
- Literature suggests Simultaneous Kidney-Pancreas Transplants (SKPT) have similar survival to Living Donor (LD) kidney transplants



Purpose

- To review the Simultaneous Kidney-Pancreas Transplant program at VGH



Selection Criteria

- Vancouver General Hospital Site
- 1986-2003:
 - Simultaneous Kidney-Pancreas Transplants (SKPT)
 - Living-Related Donor Kidney Transplants (LD)
 - Cadaveric Donor Kidney Transplants (CAD)
- Type 1 Diabetes Mellitus



Recipient Demographics

	SKPT	LD	CAD
Number	73	254	664
Age (Years)	39.7 ± 1.62	42.7 ± 1.59	46.1 ± 0.98
Sex			
Male	47 (64.4%)	170 (66.9%)	393 (59.2%)
Female	26 (35.6%)	84 (33.1%)	271 (40.8%)
Ethnicity			
Caucasian	68 (93.2%)	204 (80.3%)	508 (76.5%)
Asian	4 (5.5%)	22 (8.7%)	89 (13.4%)
East Indian	0	17 (6.7%)	34 (5.1%)
Filipino	0	8 (3.1%)	18 (2.7%)
Black	1 (1.4%)	2 (0.8%)	11 (1.7%)
Other	0	1 (0.4%)	4 (0.6%)



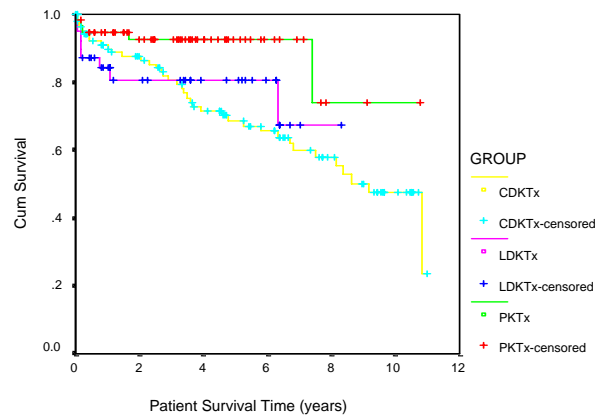
Recipient Demographics

	SKPT	LD	CAD
Duration of Dialysis (Months)	23.0 ± 7.12	15.2 ± 3.24	44.2 ± 5.84
Pre-Transplant CrCl (mL/min)	14.8 ± 1.75	12.2 ± 0.64	10.1 ± 0.54
Transplant Number			
1	73 (100.0%)	214 (84.3%)	542 (81.6%)
2	0	39 (15.4%)	111 (16.7%)
3	0	1 (<0.1%)	9 (1.4%)
4	0	0	2 (<0.1%)
Waiting Time (Days)	421.5 ± 79.54	N/A	796.0 ± 53.30

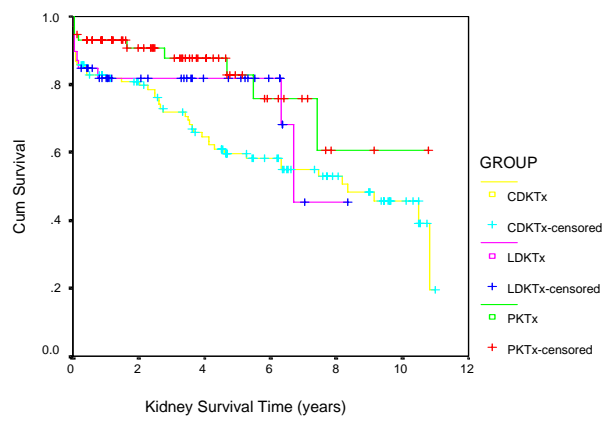
Demographics

	SKPT	LD	CAD
Donor Age (Years)	28.3 ± 2.88	41.1 ± 1.36	33.1 ± 1.30
Total MHC Mismatch (/6)	4.3 ± 0.30	2.8 ± 0.21	3.2 ± 0.09
CMV Risk	26.4%	17.8%	2.4%
Cold Ischemic Time - Kidney (Minutes)	548.6 ± 46.12	165.6 ± 10.89	960.8 ± 35.65
Warm Ischemic Time - Kidney (Minutes)	50.8 ± 2.39	31.7 ± 1.04	31.0 ± 0.85
Pancreas Drainage	Bladder - 33.3% Enteric - 66.7%	N/A	

Patient Survival



Kidney Graft Survival



Pancreas Graft Survival

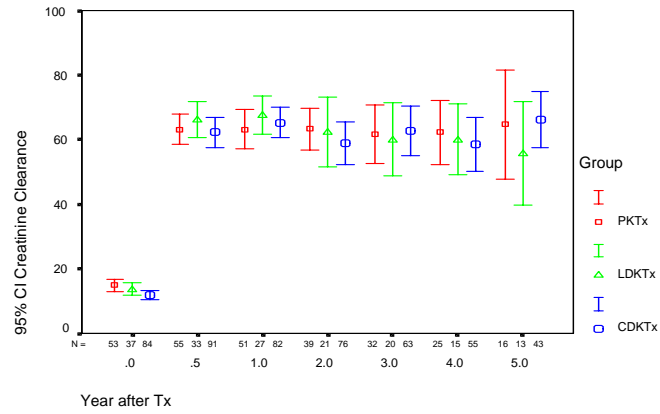
Reasons for Kidney Graft Failure

	SKPT	LD	CAD
Hyperacute Rejection	0	0	3
Acute Rejection	4	5	41
Chronic Rejection	4	9	101
Vascular Thrombosis	1	4	19
ATN	0	1	11
Infection	2	0	1
Primary Non-Functioning	0	2	5
Recurrent Disease	0	3	8
Surgical	0	0	2
Other/Uncertain	2	7	61
TOTAL	13/73	31/254	252/664

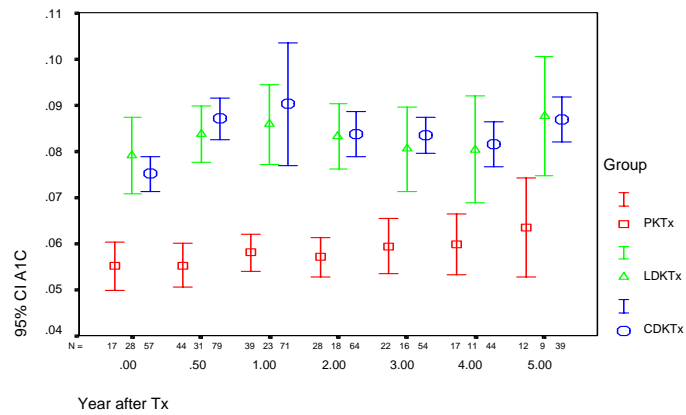
Reasons for Pancreas Graft Failure

	SKPT
Hyperacute Rejection	0
Acute Rejection	0
Chronic Rejection	4
Vascular Thrombosis	0
ATN	0
Infection	0
Primary Non-Functioning	0
Recurrent Disease	0
Surgical	0
Other/Uncertain	9
TOTAL	13/73

Kidney Graft Function



Pancreas Graft Function





Conclusions - Demographic Differences

Significant

- Transplant Number
- Waiting Time
- Cold Ischemic Time
- Warm Ischemic Time

Non-significant

- Age
- Sex
- Ethnicity
- Duration of Dialysis
- Pre-op CrCl
- Donor Age
- MHC Mismatch
- CMV Risk



Conclusions

- Patient and kidney graft survival were comparable between SKPT, LD, and CAD transplant recipients
- Kidney graft function was comparable between SKPT, LD, and CAD transplant recipients
- Blood sugar control was significantly improved with SKPT compared with LD or CAD transplantation in Type 1 DM patients



Patient and Graft Survival

	Patient Survival			Kidney Graft Survival		Pancreas Graft Survival	
	1-Year (%)	5-Year (%)	10-Year (%)	1-Year (%)	5-Year (%)	1-Year (%)	5-Year (%)
SKPT	95.5	93.9	75.3	93.9	85.5	90.9	78.5
LD							
CAD							