PANCREAS-KIDNEY TRANSPLANTATION IMPROVES QUALITY OF LIFE AND THE EMPLOYMENT STATUS OF PATIENTS WITH TYPE 1 DIABETES

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INTRODUCTION

Simultaneous Pancreas-kidney transplantation (SPKT) is commonly considered the best treatment for patients with type 1 diabetes and end-stage renal disease. It may also improve health-related quality of life (HRQOL) of these patients

OBJECTIVES AND METHODS

We have assessed the changes perceived by SPKT patients of our unit, using two questionnaires: the EuroQol-5D and the Gastrointestinal Quality of Life Index (GIQLI). We selected those with >3 months after discharge who gave their informed consent. Patients were asked to compare retrospectively, for each question, how their HRQOL had changed from pretansplantation to the last visit. A subsample of 20 patients was also prospectively studied. The surveys were administered pretransplantation (time0) and 4-12 months after the procedure (time1). When scoring the items at time 1, they were also requested to score again, for each item, their pretransplant situation. We could analyze if the answers given at time 1 concerning their pretransplant status (time0 "retrospective"), were significantly different from those given previously at time0.

RESULTS

126 SPKT ► 66 females : 60 males
► Mean age on transplantation date: 34.7±6.0 years
► mean time on dialysis prior SPKT: 29.7±20.7 months
► mean time of diabetes prior SPKT: 23.9±5.9 years
► Included if: > 3 months of follow-up after discharge
 - at least one functioning graft
 - not having a rejection, infection or admission for the last 3 months
 mean follow-up after SPKT: 5 years;
► 84.1% with both grafts functioning,
► 15.9% had one graft functioning

ATG+Tac+ MMF+Pred

In all 5 domains of **EuroQol-5D-5L**, scores were better after SPKT than before:

	Before PKT	After PKT	P value	Effect Size (95% CI)
	Total Sample (n=126 PKT patients)			
EQ-5D-5L survey				
Mobility(1-5 points)	1.48 ± 0.68	1.26 ± 0.54	<0.001	0.36 (0.29; 0.44)
Self-care (1-5 points)	1.19 ± 0.41	1.10 ± 0.29	0.001	0.25 (0.21; 0.30)
Usual activities (1-5 points)	2.76 ± 0.66	1.63 ± 0.72	<0.001	1.64 (1.55; 1.72)
Pain/discomfort (1-5 points)	3.13 ± 0.66	1.63 ± 0.58	<0.001	2.43 (2.35; 2.50)
Anxiety/depression (1-5 points)	3.30 ± 0.64	1.79 ± 0.63	<0.001	2.40 (2.32; 2.48)
VAS scale (%)	38.13 ± 16.30	84.17 ± 10.82	<0.001	3.34 (-5.04; -1.64)
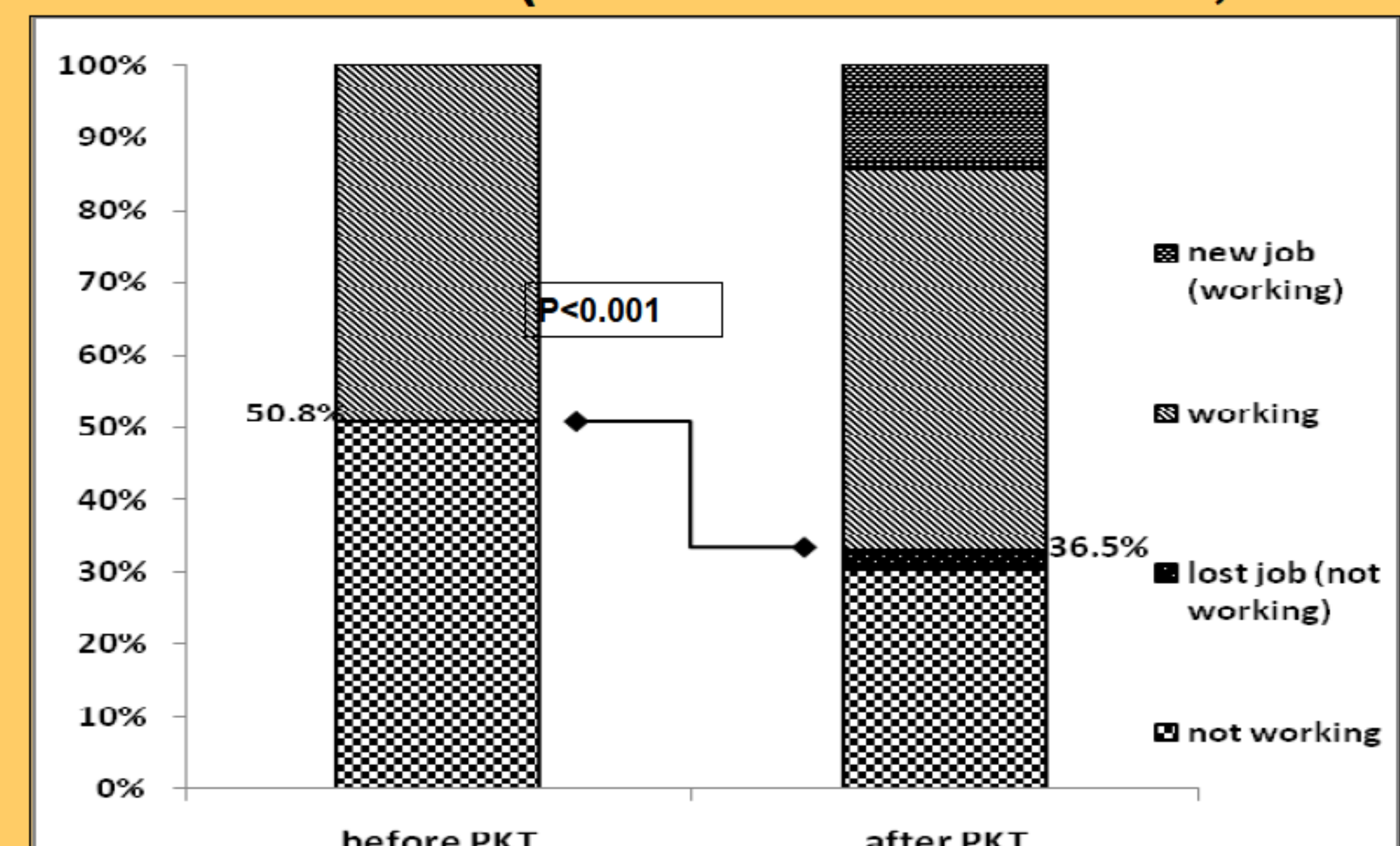
In the **prospective group**, the mean values for each domain <u>did not significantly differ between "time0" and "time0 retrospective"</u>, with the exception of physical items; all items improved from time0 →time 1

	Before PKT (time 0)	Before PKT retrospective (time 0 retrospective)	P value*	After PKT (time 1)	P value **
	Total Sample (n=20 PKT patients)				
GIQLI survey					
Core Symptoms (0-40 points)	24.15 ± 6.99	24.5 ± 6.49	0.110	30.30 ± 4.68	<0.001
Physical items (0-24 points)	8.00 ± 3.04	8.35±2.92	0.015	14.80 ± 4.42	<0.001
Psychological items (0-24 points)	10.20 ± 4.31	10.25 ± 4.05	0.577	18.60 ± 3.35	<0.001
Social items (0-16 points)	7.70 ± 2.52	7.80 ± 2.59	0.330	11.15 ± 3.17	<0.001
GI-specific items (0-40 points)	29.25 ± 5.05	29.45 ± 4.73	0.258	33.75 ± 3.34	<0.001
EQ-5D-5L survey					
Mobility (1-5 points)	1.55 ± 0.69	1.55 ± 0.61	1.0	1.15 ± 0.37	0.008
Self-care (1-5 points)	1.45 ± 0.61	1.40 ± 0.50	0.330	1.10 ± 0.31	0.005
Usual activities (1-5 points)	2.90 ± 0.45	2.75 ± 0.44	0.083	1.55 ± 0.69	<0.001
Pain/discomfort (1-5 points)	3.15 ± 0.49	3.10 ± 0.45	0.330	1.60 ± 0.60	<0.001
Anxiety/depression (1-5 points)	3.20 ± 0.70	3.15 ± 0.67	0.330	1.80 ± 0.52	<0.001
VAS scale (%)	40.75 ± 11.04	42.00 ± 8.34	0.234	79.00 ± 8.68	<0.001

In **GIQLI**, physical function was the domain with greater improvement, but all other domains improved after SPKT. The answers to the question about the stress with the medical treatment, also showed significant improvement with the transplant

|	Before PKT	After PKT	P value	Effect Size (95% CI)
	Total Sample (n=126 PKT patients)			
GIQLI survey				
Core Symptoms (0-40 points)	25.10 ± 6.96	29.81 ± 5.48	<0.001	0.76 (-1.53; 0.01)
Physical items (0-24 points)	7.86 ± 4.43	14.83 ± 3.86	<0.001	1.68 (-2.20; -1.17)
Psychological items (0-24 points)	10.36 ± 5.42	18.10 ± 3.96	<0.001	1.64 (-2.22; -1.05)
Social items (0-16 points)	7.24 ± 2.96	11.33 ± 2.72	<0.001	1.45 (-1.70; -1.10)
GI-specific items (0-40 points)	27.98 ± 6.20	32.92 ± 3.80	<0.001	0.96 (-1.60; -0.33)

Note: Higher scores represent better QoL in the GIQLI questionnaire and worse QoL in the EQ-5D-5L questionnaire. Effect sizes: meaningful but small at 0.20, medium at 0.50, and large at 0.80.

The question about the <u>stress with the medical treatment</u>: also showed <u>significant improvement with the transplant</u> (1.31 before vs 3.63 after SPKT , P <0.001, effect size 2.02)

The rate of unemployed patients significantly decreased after SPKT (from 50.8% to 36.5%, P<0.001)

In **linear regression multivariable analysis** of predictors of posttransplant GIQLI-36 score: **only having 1 graft functioning vs 2 grafts functioning were predictors of inferior QoL** scores (B=-5.157, p=0.015)

(Variables included in the model: recipient gender, age at transplantation, duration of diabetes prior to PKT, number of grafts functioning, acute rejection, CV disease, dialysis vintage time, duration of PKT hospitalization and time since PKT to the survey)

CONCLUSIONS

✓ For all assessed domains of both questionnaires, , patients reported a significant improvement in quality of life after SPKT.
✓ The scores collected prospectively were almost coincident with those obtained retrospectively.
✓ Maintenance of the two grafts functioning predicted higher improvement of HRQOL scores.