ELSEVIER

Combined Pancreas-Kidney Transplantation: A New Program in Portugal, Results From the First 12 Cases

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SIMULTANEOUS pancreas-kidney transplantation (SPKT) is, at present, the best treatment for patients with type 1 diabetes with chronic renal failure. Several studies have proved that SPKT significantly improves the quality of life,[1] neuropathy, [2] cardiopathy,[3] and may prevent recurrent nephropathy in the kidney graft.[4] Since the introduction of new immunosuppressive drugs, there has been a marked outcome improvement in SPKT. Its popularity parallels these improving results, such that SPKT is now a world-wide practice.[5] We present herein the results of the first 12 cases of our program.

METHODS

We started our program on May 2, 2000, performing our 12th SPKT on April 20, 2002. SPKT uses the whole pancreas, with enteric diversion of the exocrine secretions, and the iliac vessels for vascular supply and drainage. The immunosuppressive protocol includes quadruple-drug therapy, namely, anti-thymocyte globulin, tacrolimus, mycophenolate mofetil, and steroids. Infection prophylaxis during the first 3 days includes a third-generation cephalosporin, vancomycin, and fluconazol followed by gancyclovir and cotrimoxazol; for thrombosis prophylaxis, we begin acetyl salycilic acid and low–molecular weight heparin preoperatively.

RESULTS

The mean age of the patients was 32.0 ± 6.2 years and the mean duration of diabetes was 21.1 ± 2.8 years. Nine patients received an organ displaying at least one HLA match. One patient was on the "urgent" waiting list due to lack of vascular access for hemodialysis. During the pretransplantation evaluation one patient required coronary angioplasty after a myocardial infarction. The total length of hospital stay was 36.7 ± 21.9 days (range: 10 to 82 days), including 6.4 ± 13.1 days (range: 1 to 48 days) in the intensive care unit. Only one patient needed dialysis for 13 days after SPKT due to shock. Exogenous insulin was stopped 2.1 ± 1.8 days after SPKT. Four patients required two to four surgical reinterventions due to abdominal infection or bleeding. Nine patients' courses were complicated by extraurinary infections, namely, perigraft infections and six with urinary infections. The incidence of acute

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Table 1. Latest Analytical Values of Graft Function and Metabolic Control

Patient No.	Urea (mg/dL)	Creatinine (mg/dL)	Glucose (mg/dL)	HbA1c (%)	C-peptide (ng/mL)	Cholesterol (mg/dL)	Triglycerides (mg/dL)
1	52	0.8	80	4.8	6.9	221	127
2	62	1.3	61	4.0	6.1	172	97
3	42	0.9	78	4.3	7.7	214	81
4	60	0.9	97	5.5	3.9	220	169
5	50	1.3	94	5.0	7.3	152	116
6	60	1.1	71	4.9	5.6	151	51
7	32	0.8	68	5.2	6.4	167	184
8	24	0.7	88	4.9	7.1	156	127
9	36	0.9	63	4.6	6.1	164	105
10	53	1.0	72	4.4	7.9	133	86
11	66	1.4	92	5.1	6.3	183	139
12	47	1.1	84	5.0	8.3	155	177
Mean (SD)	48.5 ± 12.9	1.0 ± 0.2	72.7 ± 16.4	4.7 ± 0.8	6.8 ± 1.5	167 ± 31	138 ± 45

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rejection episodes (AR) was 50% (six patients with AR: one of kidney, three of the pancreas, and two of both organs). The diagnosis was based on clinical criteria including serum urea, creatinine, amylase, and lipase as well as kidney biopsy. In one third of the cases it was steroid-resistant but only one patient had more than one AR episode. Five of the 12 patients were readmitted, due to infection, AR, peripheral vascular disease, or ocular problems. They had one to four admissions. Until now all the patients have both grafts functioning without an exogenous insulin requirement. At last visit, the mean values were 48.5 ± 12.9 and 1.0 ± 0.2 mg/dL for blood urea and creatinine, respectively; 72.7 ± 16.4 mg/dL for fasting blood sugar; 4.7 ± 0.8% for HbA1c; 6.8 ± 1.5 ng/mL for C-peptide; 167 ± 31 and 138 ± 45 mg/dL for cholesterol and triglycerides, respectively (Table 1).

DISCUSSION AND CONCLUSIONS

It is possible that our incidence of AR is an overestimate, especially pancreas rejection, because it was inferred from the biochemical level of pancreatic enzymes and from the kidney biopsy. However, our center decided not to perform pancreatic graft biopsies, at least in the beginning of the program, to avoid additional risks associated with the technique. Although there are some aspects that can certainly be improved, such as surgery related complications, bleeding, and infection, SPKT has been a successful experience at our center. All patients are alive and all grafts functioning. This outcome proffers a strong motivation to continue the program.

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