Quality of Life After Kidney/Pancreas Transplantation

NATHAN DM, FOGEL H, NORMAN D, RUSSELL PS, TOLKOFF-RUBIN N, DELMONICO FL, AUCHINCLOSS H JR, CAMUSO J, COSIMI AB: LONG-TERM METABOLIC AND QUALITY OF LIFE RESULTS WITH PANCREATIC/RENAL TRANSPLANTATION IN INSULIN-DEPENDENT DIABETES MELLITUS. *TRANSPLANTATION* 52:85–91, 1991

OBJECTIVE— To compare metabolic outcome and the quality of life of recipients of combined pancreas/kidney transplants with that of insulin-dependent diabetic recipients of kidney transplants only.

RESEARCH DESIGN AND METHODS— Prospective comparison of these two groups at baseline and at follow-up for a total of 42 months.

SETTING— The Diabetes, Renal, and Transplant Units and the Department of Psychiatry, Massachusetts General Hospital, Boston, MA.

PATIENTS— All patients had insulin-dependent diabetes mellitus; 33 with renal failure received simultaneous cadaveric kidney and pancreas transplants. Eighteen insulin-dependent subjects received only a kidney transplant during the same period and 1 pancreas/kidney transplant recipient lost the pancreas 24 h after surgery but retained the kidney. Both patient groups were similar in age (34 vs. 36 yr), duration of disease (22 vs. 24 yr), and diabetic complications.

PRIMARY OUTCOME MEASURES— Patient survival, graft survival and function, complications, and quality-of-life measures.

RESULTS— Patient survival did not differ between the two groups for the mean follow-up periods of 21 and 22 mo in the pancreas/kidney recipients and the kidney only group, respectively; 3 patients in the former group died and 2 in the latter group died. Pancreas graft survival (defined as maintenance of normal HbA_{1c} without exogenous insulin and with an unrestricted diet) was 85% at 1, 2, and 3 yr. Renal graft survival was not different between the pancreas/kidney (88%) and kidney only recipients (83%). Pancreas/kidney recipients required hospital readmission at a mean rate of 1.8 admissions/patient-yr compared with 0.84 readmissions/patient-yr for the kidney recipients. As measured by the Diabetes Control and Complications Trial quality-of-life assessment at baseline and 18 mo after transplant, the patients with combined transplants showed a significantly improved quality of life compared to the kidney only group on the following scales: satisfaction, impact, worry-vocational, worry-diabetes, and total score.

CONCLUSIONS— Successful pancreas transplantation improves quality of life with respect to diabetes but this benefit is accomplished at a cost of increased hospital admissions and complications related to the transplanted pancreas.

COMMENTARY— Disease has been defined as that pathobiological entity that causes illness in individuals (1). Chronic illness is a constellation of disruptions in psychosocial and physiological function that individuals with the disease experience. Thus, disease is the same entity that does not change from patient to patient, whereas illness that is a patient's manifestation and response to disease varies widely from individual to individual. Chronic illness is characterized by the realization that there is no likely cure and the patient will always have the disease. The goal of medical care, therefore, is to optimize health status rather than cure the disease. The quality of life of such patients is becoming more important as the technical aspects of transplantation are becoming more routine. Thus, the question is not "Is the patient alive?" but rather "How is the patient living?" Because health-care dollars for high-tech treatments are becoming more scarce, it is not enough to know that a procedure can be performed but the functional outcome must also be worth the cost.

In 1981, Gutman et al. (2) showed that dialysis patients were functioning at a very low level, especially those with diabetes. More recent observations have indicated that kidney transplantation can improve the quality of life for the patient with end-stage renal disease. However, the patient with diabetes continues to achieve a perceived quality of life that is less than the patient without diabetes. As outlined by Levine and Croog (3), there are five dimensions to quality of life: *1*) physiological state, *2*) emotional state, *3*) cognitive or intellectual function, *4*) the performance of social values, and *5*)

sense of well-being or perceived quality of life. The study by Nathan et al. has provided data that patients can survive with combined pancreas/kidney transplants and that these grafts can function well. Under these set of circumstances, the patients perceive an improved quality of life. This is not surprising because their underlying disease has, indeed, been cured, at least temporarily. However, it is disappointing that the authors did not provide data concerning the functional status of the patients. Were they working or in school before the transplant? If so, did they continue afterward, or if not, did they begin school or work with the functioning grafts in place? Follow-up data from Morel et al. (4) would indicate that children who receive a kidney transplant have an improved quality of life but are also holding jobs or continuing their education.

Thus, the data of Nathan et al. are important because they not only assess the morbidity and mortality of the patients and allografts but also determine whether such transplantation efforts make a difference to the patient who is being subjected to the procedures. The goal of future research should be to improve on the technical and immunological aspects of transplantation and to assess the quality of life the patients are receiving. Research in the latter area is just beginning to be performed and presented.

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Influence of Regional Adiposity on Atherogenic Risk Factors in Men and Women With Type II Diabetes

BAYNES C, HENDERSON AD, ANYAOKU V, RICHMOND W, JOHNSTON DG, ELKELES RS: THE INFLUENCE OF REGIONAL ADIPOSITY OF ATHEROGENIC RISK FACTORS IN MEN AND WOMEN WITH TYPE 2 DIABETES. *DIABETIC MED* 8:458–63, 1991

OBJECTIVE— This study was designed to *1*) determine whether body fat distribution could predict lipid, lipoprotein, apolipoprotein and blood glucose concentrations, and blood pressure better than overall adiposity in non-insulin-dependent (type II) diabetes and if this relationship was similar for both sexes; 2) determine whether sex differences in lipoprotein risk factors in type II diabetes can be entirely explained by body fat distribution; and 3) examine the relationship between hepatic lipase and the waist-hip ratio (WHR) because this enzyme may be one mechanism by which the WHR and sex affect high-density lipoprotein (HDL) cholesterol.

RESEARCH DESIGN AND METHODS— This study is a cross-sectional study of 47 type II diabetic subjects (26 men, 21 women) matched for age, body mass index (BMI), and blood glucose control. All had been diagnosed for >6 mo at the time of the study and had no clinical evidence of macrovascular disease, hypertension, abnormal renal, liver, or thyroid function.

PATIENTS— All subjects were of stable weight and metabolic control, and none had ever received insulin or were taking any medication known to affect carbohydrate or lipid metabolism. Overall adiposity was assessed by BMI (kg/m^{-2}) and regional adiposity by the minimum waist circumference to the maximum hip circumference ratio (WHR). Blood pressure was measured in the standard manner. Blood was obtained for the determination of HbA_1, insulin, C-peptide, lipids, lipoproteins, and apolipoproteins (apo) after an overnight 12-h fast. After blood sampling heparin was given intravenously and blood was drawn at 15 min and frozen