

Pancreas Transplantation for Patients With Diabetes Mellitus

Pancreas transplantation has been performed in thousands of patients with diabetes mellitus and has become accepted therapy in certain types of patients. Successful pancreas transplantation has been shown to eliminate the need for exogenous insulin, an outcome greatly desired by patients with insulin-dependent diabetes. However, several significant issues surround the indications for pancreas transplantation and its respective benefits and risks.

This position statement presents the recommendations of the American Diabetes Association on pancreas transplantation in patients with insulin-dependent diabetes mellitus. The recommendations are based on the American Diabetes Association's technical review on *Pancreas Transplantation for Patients With Diabetes Mellitus*, which should be consulted for further information (1).

RECOMMENDATIONS

1. Successful pancreas transplantation has been demonstrated to improve significantly the quality of life of people with diabetes, primarily by eliminating the need for exogenous insulin, frequent daily blood glucose measurements, and many of the dietary restrictions imposed by the disorder. Transplantation also can eliminate the acute complications commonly experienced by patients with insulin-dependent diabetes (e.g., hypoglycemia). However, there is no evidence that pancreas transplantation can prevent or retard the development

and/or progression of the long-term complications of diabetes. Nor is there evidence that pancreas transplantation can prolong the life of patients with diabetes mellitus. Therefore, neither prevention or attenuation of the chronic complications of diabetes nor increased longevity are indications for a pancreas transplant.

2. Pancreas transplantation should be considered an acceptable therapeutic alternative to continued insulin therapy in diabetic patients with end-stage renal disease who have had or plan to have a kidney transplant. Such patients also must 1) meet the medical indications and criteria for kidney transplantation, 2) have significant clinical problems with exogenous insulin therapy, and 3) not have excessive surgical risk for the dual transplant procedure. Medicare and other third-party payors of medical care should include coverage for pancreas transplant procedures meeting these criteria. The pancreas transplant may be done simultaneous with, or subsequent to, a kidney transplant.
3. Pancreas-only transplants require lifelong immunosuppression to prevent rejection of the graft and recurrence of the autoimmune process that would again destroy the pancreatic islet cells. Immunosuppressive regimens used in transplant patients have side effects whose frequency and severity restrict their use in patients who

would not survive without the transplant (e.g., patients with end-stage renal disease) or whose quality of life is unacceptable. Also, pancreas transplantation is a major surgical procedure. In addition to the side effects of lifelong immunosuppression, the procedure itself carries a small, but not negligible risk of morbidity and mortality. Therefore, in the absence of renal failure, transplantation should be considered a therapeutic alternative to insulin therapy only in those few unusual patients who exhibit 1) a history of frequent acute severe metabolic complications requiring medical attention, 2) clinical and emotional problems with exogenous insulin therapy that are so severe as to be incapacitating, and 3) consistent failure of other therapeutic approaches to ameliorate the situation. Institutional guidelines for assuring an objective multidisciplinary evaluation of the patient's condition and eligibility for transplantation should be established and followed. Third-party payor coverage is appropriate only where such guidelines and procedures exist.

4. Institutions that perform pancreas transplantations should be tertiary care centers that have an active kidney transplant program and are equipped to adequately handle the complex medical and psychosocial needs of transplant patients.
5. Pancreatic islet cell transplants hold significant potential advantages over whole-gland transplants. However, at this time, islet cell transplantation is an experimental procedure.

References

1. American Diabetes Association: Technical review on pancreas transplantation for patients with diabetes mellitus. *Diabetes Care* 15:1668-72, 1992

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