ISLET TRANSPLANTATION

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Diabetes Mellitus (DM) remains one of the few life-threatening diseases whose incidence is increasing. The development of devastating secondary complications, which include heart disease, stroke, kidney disease, blindness, and amputations can be slowed down by intensive insulin therapy but at the expense of a three-fold increase in severe hypoglycaemic episodes. Combined kidney and pancreas transplantation is a successful strategy for achieving normal glucose metabolism to inhibit nephropathic lesions in the newly transplanted kidney. However, whole pancreas transplantation is a major operation with significant technical complications, whereas islet transplantation carries less risks and can be repeated several times.

Successful human islet transplantation was reported recently by Shapiro et al. (2000). The recipients in this study were patients with hyperlabile diabetes but without secondary complications. The success was due to improved islet preparations and a novel combination of chemical and biological immunosuppressive reagents.

This presentation will review new developments in islet transplantation, its success rate, patient selection, immunosuppressive therapies and illustrate the problems of isolating sufficient islet tissue for grafting. New strategies to overcome the shortage of pancreatic islets for transplantation into diabetic patients will be discussed.