INTRODUCTION

Diabetes mellitus is a syndrome characterized by insufficient insulin secretion, reduced glucose tolerance and development of universal microangipoathy, neuropathy and atherosclerosis. Diabetes has been diagnosed in all countries with, however, very varying prevalence. The frequency of diabetes increases when the standard of living rises, probably due to over nourishment and physical inactivity. Diabetes reduces the quality of life and also the duration due to the development of complications affecting heart, kidney, eyes, arteries, brain and legs. The nervous system is also affected. Coronary heart disease and uraemia are the most frequent cause of death among diabetic patients. Diabetes is the most frequent cause of acquired blindness among professionally active men and women ***(Ricordi et al., 1992)***.

Infarction of the heart is two to three times more frequent among diabetic patients than among non-diabetic patients. About 10% of diabetic patients will undergo major amputation during their lifetime and about 10 diabetic patients per million inhabitants will every year develop renal insufficiency. The majority of patients with diabetes mellitus suffer from type 2 diabetes (85%). These patients are often also suffering from other disease, and treatment of this type of diabetes is therefore usually in the hands of medical practitioners. Among the diabetic population 15% suffer from type 1 diabetes (insulin dependent). The treatment of these patients is complicated and consequently organized in diabetes clinics, where specially educated health workers take care of the

patients problems. Recent prospective studies do indicate that complications are secondary to metabolic endocrine abnormalities. In almost all diabetic patients complication will develop after 10-15 years of diabetes, but in only 50% of patients will these complication produce symptoms. At the time of diagnosis it is impossible to indicate patients who are less susceptible to the deleterious effect of high glucose and thus less prone to develop complications with symptoms. Therefore, strict metabolic control should be the goal in diabetic patients, but without inducing hypoglycaemia or neurotic side-effect. It has been shown that the cumulative incidence of blindness, amputation and uraemia is less frequent and life expectancy longer in patients who are motivated for regular control, compared with patients who neglect their medical regime. Therefore the health care system should cooperate in:

1- Recognizing and treating diabetes irrespective of the presence of symptoms;

2- Motivating and teaching patients self care and regular control;

3- Mobilizing social support; and

4- Preventing the development of complications and recognizing complication at a stage where they can still treated ***(Deckert et al,1985)***.

It is difficult to deal with these problems with the present medical treatment of diabetes mellitus and inspite of the advances in medical technology of treatment of diabetes the patients still run the risk of intermittent hypo-or hyperglycaemia. Our goal

is to achieve normoglycaemia in diabetic patients. It was found that the only way to solve this problem is to transplant the endocrine tissue which secret insulin according to the need of the body which is the whole or part of the pancreas. Any organ transplantation is defined as the process by which the diseased organ are replaced by other organ or possibly individual cells as a mean to restore normal physiological function ***(Arnold,1989).***

For more than 20 years pancreatic transplantation has been investigated as therapeutic modality in patient with insulin-dependent diabetes mellitus. When successful this procedure is the only method for attaining normoglycaemia in diabetic patients. Pancreatic transplantation restores fully effective endogenous insulin secretion and establishes an euglycaemic state which is superior to that achieved with any other form of conventional diabetes treatment ***(Tyden et al,1987a).***

The first pancreatic transplantation was performed in conjunction with renal transplantation in patient with end stage diabetic nephropathy ***(Kelly et al,1967).***

Since then most pancreatic transplantation have been performed in kidney transplant patient. There are two reasons for pancreatic transplantation in conjunction with renal transplantation. The first is end stage diabetic nephropathy to prevent the diabetic renal complication in the transplanted kidney, and the second is to avoid the risk

of life-long immunosuppressive drug for pancreatic transplantation only. Several trails of single pancreatic transplant has occasionally been carried out in non-uraemic diabetic patient for other complication of diabetes mellitus. The same procedure has been performed in diabetic patient with early signs of renal damage (proteinuria). There are other indication for single pancreatic transplantation which are prevention of microvascular changes in diabetic patients, diabetes mellitus with unawareness of hypoglycaemia, defective hormonal counter regulation, hyperlabile diabetes and subcutaneous insulin resistance ***(Bolinder and Tyden, 1989).***

So far, no standard surgical procedure for pancreatic transplantation has emerged. In the first series of pancreatic transplantation the entire pancreas including part of the duodenum was used, it is called pancreaticoduodenal graft ***(Kelly et al.1967).*** However, with occurrence of different complications with the previous procedure, segmental body and tail graft became standardized from early 1970s and onwards ***(Gliedman et al.1973).***

Few years ago the pancreaticoduodenal graft reintroduced because of better techniques for tissue preservation and better protocols for avoiding graft rejection. There are two techniques for pancreatic transplantation. In both, the whole pancreaticoduodenal graft is used but they differ in the way of how to deal with the exocrine secretion of the transplanted pancreas. In the first one the exocrine secretion is drained to the urinary tract. In the second technique the exocrine secretion is drained to the bowel ***(Bolinder and Tyden, 1989).***

Most of the graft related complication after pancreatic transplantation reflect well-known pancreatic pathophysiological condition such as rejection, pancreatitis,, pancreatic fluid collection, anastomotic leaks, fistulae, wound infection, graft thrombosis, peri-and intrapancreutic abscesses.

With advances of surgical techniques, better post- operative management and monitoring, these complication have been much reduced. So, the graft survival rate are approaching those obtained with transplantation of liver, heart and kidney. ***(Bolinder and Tyden, 1989)***.