

What Should be the Activities of a Diabetes Center Focused On Islet Transplantation?



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Introduction

Patients with type 1 diabetes mellitus (T1DM) may experience diabetic ketoacidosis^[1,2]. Patients with type 2 diabetes mellitus (T2DM) are likely to experience hyperglycemic non-ketotic hyperosmolar coma^[3,4]. Later microvascular complications include retinopathy^[5,6], nephropathy^[7] and peripheral and autonomic neuropathy^[8]. Macrovascular complications include coronary and peripheral atherosclerotic arterial disease. The macrovascular disease such as atherosclerosis can lead to symptomatic coronary artery disease, claudication, skin necrosis and infection^[5,9-13]. Retinopathy may progress to macular edema or proliferative retinopathy with retinal detachment or hemorrhage, which can cause blindness^[5,14]. Diabetic nephropathy develops in about one third of patients with T1DM and in a smaller percentage of those with T2DM, and can be a cause of nephrotic syndrome^[5,7]. Diabetic neuropathy is usually encountered as a polyneuropathy. Acute mononeuropathies occur more frequently in older diabetics. Autonomic neuropathy occurs primarily in diabetic patients with polyneuropathy^[5,8]. Ulcers of the feet and joint problems are important causes of morbidity in DM^[15,16]. The most important predisposing cause is the diabetic polyneuropathy. The risk of infection by fungi and bacteria has increased due to the depression of cellular immunity induced by hyperglycemia and acute circulatory deficits induced by chronic hyperglycemia^[17,18]. For all of the mentioned reasons, diabetes is a major health problem of societies, which draws interest of all disciplines of medicine. To combat these questions, there must be created multidisciplinary centers of excellence where coordinated operations on research and application of diabetes are carried out both at baseline and clinical levels^[19-21].

Principle activities should be as follows:

- It should be established a general area to play all kinds of cooperation in science and research with national and international organizations in the field of diabetes.
- The centers must participate in national and international scientific research in the field of diabetes and produce prestigious projects.
- Several scientific meetings should be organized, along with other public and private institutions should be made qualified diabetes studies, participation as a partner to the studies should be guaranteed.
- Isolation, culture and transplantation of islets of Langerhans in the experimental stage must be carried out and realized this program in clinic.
- There should be a laboratory of stem cells for radical treatment of diabetes.

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- To be a multidisciplinary center of excellence the conditions formulated by the international diabetes must be completed.
- To support these studies, molecular and biochemical studies and research on the beta cells and other cells of the islet of Langerhans must be carried out.
- To investigate the immunogenetic etiology of T1DM should be done studies on immunology and genetics of the beta cell and should be set up projects.
- To develop experimental models of diabetes necessary animal models must be established, these models should be standardized and scientific studies must be carried out.
- To conclude, for essential importance of updating there should be held scientific meetings and organized post-graduate courses.



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