

Abstract

Therapy of diabetes mellitus and its possible complications

The aim of this thesis is to describe and explain the therapy and possible complications of diabetes mellitus. My document also includes a few interesting case reports belonging to this topic.

Diabetes mellitus is a chronic condition that occurs when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Hyperglycemia and other related disturbances in the body's metabolism can lead to serious damage to many of the body's systems, especially the nerves and blood vessels.

A diabetes epidemic is underway. At least 171 million people worldwide have diabetes. This figure is likely to be more than double by 2030. Around 3,2 million deaths every year are attributable to complications of diabetes. Diabetes has become one of the major causes of premature illness and death in most countries, mainly through the increased risk of cardiovascular disease.

There are two basic forms of diabetes:

Type 1 – people with this type of diabetes produce very little or no insulin. People with type 1 diabetes require daily injections of insulin to survive.

Type 2 – people with this type of diabetes cannot use insulin effectively. People with type 2 diabetes can sometimes manage their conditions with lifestyle measures alone, but oral drugs are often required, and less frequently insulin, in order to achieve good metabolic control.

And Type 3 of diabetes, gestational DM develops during some cases of pregnancy but usually disappears after pregnancy.

Most people with diabetes have type 2. Many of them have no symptoms and are only diagnosed after many years of onset. As a consequence, almost half of all people with type 2 diabetes are not aware that they have this life-threatening condition.

Diabetes mellitus is accompanied by many complications (microvascular and macrovascular problems). Diabetic neuropathy is probably the most common complication. Major risk factors of this condition are the level and duration of elevated blood glucose. Neuropathy can lead to sensory loss and damage to the limbs. It is also a major cause of impotence in diabetic men. Diabetic retinopathy is a leading cause of blindness and visual disability. Diabetic is among the leading causes of kidney failure. Cardiovascular disease is responsible for between 50% and 80% of deaths in people with diabetes. Risk factors for heart disease in people with diabetes include high blood pressure, high serum cholesterol, obesity and smoking. Recognition and management of these conditions may delay or prevent heart disease in people with diabetes. Diabetic foot disease, due to changes in blood vessels and nerves, often leads to ulceration and subsequent limb amputation.

Prevention and treatment of diabetes includes healthy diet and regular physical activity, good insulin therapy and oral antihyperglycemic therapy.

Insulin therapy is a necessity for patients with type 1 diabetes. It can also give patients the opportunity for healthy and productive lives. Injectable insulin is commonly available. Insulin now comes in a variety of preparations that differ in time of onset and length of action. The most recently available advance in insulin delivery is the insulin pump. Another promising route of insulin administration is through nasal inhalation (EXUBERA, market by Pfizer).

In my document, I review the mechanism of action, efficacy and side effects of the different classes of OHAs (α -glucosidase inhibitors, biguanides, insulin secretagogues, insulin sensitizers and intestinal lipase inhibitor) and discuss the current recommendations for their use.

The second part of my document consists of 6 interesting case reports about diabetic complications (proximal diabetic neuropathy, erectile dysfunction, treatment of obesity, connection of all possible complications, amputation of a lower limb due to diabetic necrosis, diabetes induced by acute parotitis viral infection).

In my opinion, the most useful role of pharmacist in the prevention and therapy of diabetes is to educate patients about possible diet, regular physical activities and to help them with right and precise administration of medicines.

