

In Shortly about Diabetes Control

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Abstract

Diagnosis of diabetes involves a wide range of diseases that are characterized by elevated blood glucose levels. Diabetes may be due to decreased insulin secretion from pancreatic beta cells and thus type 1 diabetes, and may also be due to reduced sensitivity of liver, muscle and fat cells to the action of insulin leading to type 2 diabetes. In children and adolescents it is most often type 1 diabetes that has arisen as a result of autoimmune processes in the body. The incidence of this form of diabetes has increased significantly in the last 50 years. At the same time, the disease is becoming more frequent in younger children.

Keywords: *Diabetes; Type 1; Type 2; Care; Prediction*

Introduction

Before embarking on complex programmes, it is essential to have a clear view of the requirements of each individual patient [1]. The malaise associated with poorly controlled diabetes almost always responds to better treatment with considerable improvement in well-being. Occasionally, those whose control has been persistently poor for very long periods may for a time feel less well when blood glucose levels are reduced and consequently are at first reluctant to make the effort to improve control.

Pancreas

The pancreas is actually two glands in one: a digestive exocrine gland and an endocrine gland [2]. The exocrine tissue of the pancreas, which is concerned solely with digestion, secretes an alkaline pancreatic juice rich in digestive enzymes into the duodenum through the pancreatic duct. The proteindigesting (proteolytic) enzymes are secreted in an inactive form and are activated after they are discharged into the duodenum. Exocrine pancreatic tissue makes up more than 80 percent of the pancreas and consists of enzyme-secreting acini arranged around ductules that ultimately drain into the pancreatic duct. The endocrine tissue of the pancreas consists of multiple small clusters of cells scattered throughout the gland called the pancreatic islets, or islets of Langerhans, which discharge their secretions directly into the bloodstream. Each islet is composed of several different types of cells, including alpha cells, beta cells and delta cells. Alpha cells secrete a hormone called glucagon. The more numerous beta cells secrete insulin in response to a rise in blood glucose after eating, which restores blood glucose to normal. Both glucagon and insulin regulate the level of glucose in the blood but have opposing effects. Glucagon raises blood glucose; insulin lowers it. Delta cells produce a hormone called somatostatin, which inhibits secretion of both glucagon and insulin. Diffuse islets of Langerhans occur in the head of the pancreas as cords between pancreatic acinar cells. The diffuse islets contain

predominantly beta cells and cells that secrete human pancreatic polypeptide (HPP), which helps regulate both pancreatic and gastrointestinal function and may also play a role in regulating food intake.

Diabetic neuropathies

Diabetic neuropathies (DN) are a heterogeneous group of disorders that include a wide range of abnormalities [3].

Adolescents

Carbohydrates, which are found in all plants, are produced from carbon dioxide and water through a process of photosynthesis [4]. There are three main forms of carbohydrates: sugars, starches, and dietary fibre, and each source is essential for the production of energy.

Glycemic index

The glycemic index (GI) is a classification proposed to quantify the relative blood glucose response to foods containing carbohydrate [5].

Glycemic control

For individuals with both type 1 and type 2 diabetes, maintenance of long-term levels of glycemia contributes to a lower risk of long-term complications [6]. In the diabetes control and complications trial (type 1 diabetes), the risk of cardiovascular events was reduced by 42% alongside substantial reductions in renal disease and eye complications for those with better glycemic control. For individuals with type 2 diabetes, long-term follow-up of the UKPDS study where glucose levels were lower in the intervention compared to a control group observed reductions of 24% for microvascular complications and 15% for myocardial infarction.

Tight control of other risk factors, including blood pressure, cholesterol, and smoking are also major contributors to reduction in complications, but the management of glycemia presents unique challenges, as well as providing an exemplar for management of other risk factors including blood pressure and cholesterol levels.

There is therefore an unmet need for improved glucose control for people with diabetes in the context of maintaining quality of life and reducing the burden of selfcare. Utilizing data about levels of glucose control to bring glycemic control for people with diabetes back to physiological levels requires pharmacological and lifestyle measures. Measurement of blood glucose or HbA_{1c} is often considered in the context of a diagnostic test, with a reason for an abnormal measurement considered and an action prescribed. However, it is not just used as a single test, but as a test repeated over time with the aim of identifying excursions beyond a defined range of normal values or to modify an intervention intended to reestablish the parameter within a defined range.

Hypoglycemia

It's important that you learn your own signs of hypoglycemia [7]. Different people may have different feelings, so it is important to know what signals your body gives during a low glucose reaction.

Treatment-induced hypoglycemia has become the limiting factor in attaining glycemic goals [8]. The incidence of hypoglycemia is relatively low in type 2 diabetes early in the course of the disease, even when treated with insulin, but approaches that in type 1 diabetes as glycemic defenses become compromised with longer duration and progression of type 2 diabetes. Death due to hypoglycemia is estimated at a rate of 2 - 4% in individuals with type 1 diabetes, and recent evidence suggests that hypoglycemia can also be fatal in type 2 diabetes. Safety concerns associated with hypoglycemia highlight the importance that the entire diabetes health care team be exceedingly familiar with the risks, treatment, and prevention of hypoglycemia.

Care

Everyone with newly diagnosed diabetes is worried and some are very frightened, especially if they have relatives who have gone blind, had amputations, or died from diabetes [9].

Prediction

It is the predictable pattern of diseases, both in their natural history and in their response to therapy, which has been the cornerstone of modern medicine [10]. The early induction of diabetes-associated autoantibodies and the long pre-diabetic period suggested the possibility that autoimmune diabetes could be predicted.

Conclusion

Diabetes is also called the silent killer because it is difficult to understand that the symptoms indicate diabetes. People with type 2 diabetes, which occurs in adults, often do not realize that they are suffering from this disease, but attribute symptoms such as fatigue, irritability, weight fluctuations, thirst and frequent urination to the aging process. Diabetes, like no other disease, requires the full involvement of the patient, primarily in adhering to a diet plan, maintaining physical activity and only then in taking prescribed medication. In order to reduce blood sugar oscillations, too low or elevated values that occur due to the high dependence of glucose levels on the meal taken, physical activity and dose of the drug, the patient must regularly self-monitor blood sugar levels.

Bibliography

1. Watkins PJ. "ABC of Diabetes, Fifth Edition". BMJ Publishing Group Ltd, London, UK (2003): 25.
2. Reisner EG and Reisner HM. "Crowley's An Introduction to Human Disease - Pathology and Pathophysiology Correlations, Tenth Edition". Jones and Bartlett Learning, Burlington, USA (2017): 587.
3. Vinik AI. "Diabetic Neuropathies - Evaluation, Management and Controversies in Treatment Options". in LeRoith, D.; Vinik, A. I. (eds): "Controversies in Treating Diabetes - Clinical and Research Aspects", Humana Press, Totowa, USA (2008): 109.
4. Heaven PCL. "Adolescent Health - The Role of Individual Differences". Routledge, London, UK (1996): 156-157.
5. Dimosthenopoulos C., *et al.* "Principles of Healthy Nutrition". In Katsilambros, N.; Dimosthenopoulos, C.; Kontogianni, M.; Manglara, E.; Poulia, K. A. (eds): "Clinical Nutrition in Practice". John Wiley and Sons Ltd, Chichester, UK (2010): 5.
6. Farmer A and Pal K. "Home Blood Glucose Monitoring and Digital-Health in Diabetes". In Bonora, E.; DeFronzo, R. A. (eds): "Diabetes - Epidemiology, Genetics, Pathogenesis, Diagnosis, Prevention, and Treatment". Springer International Publishing AG, Cham, Switzerland (2018): 403-404.
7. American Diabetes Association. "Complete Guide to Diabetes, Fourth Edition, Completely Revised". American Diabetes Association, Inc., Alexandria, USA (2005): 165-166.
8. Franz MJ and Evert AB. "American Diabetes Association Guide to Nutrition Therapy for Diabetes, Second Edition". American Diabetes Association, Inc., Alexandria, USA (2012): 249.
9. Hillson R. "Diabetes Care - A Practical Manual, Second Edition". Oxford University Press, Oxford, UK (2015): 410.
10. Beyan H and Leslie DG. "Type 1 Diabetes Mellitus". In Weetman, A. P. (ed): "Autoimmune Diseases in Endocrinology". Humana Press, Totowa, USA (2008): 290-291.

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