

Maja Oblak

Slovenia

The nature of diabetes is present in Slovenia. I am an internal medicine specialist at the Clinic for Endocrinology and Diabetes at the University Medical Centre, Ljubljana, who explains the development of the disease, possible complications and ways of preventing its occurrence, and Tadej Battelino, MD, PhD, Chief Executive at the Department of Paediatric Endocrinology, Diabetes and Metabolism at the University Children's Hospital in Ljubljana, who explained ways of treating the disease today and in the future as well as perspectives of the disease in the world. In addition, Iva, a 27-year old student from Ljubljana answered some questions about the disease that she has been dealing with for the past year. If one falls ill with diabetes, they suffer from a progressive chronic disease that has long-term effects and poses high and invisible risks for numerous complications. Despite medical progress and modern approaches towards diabetes treatment that give the patient easier management and control over the disease, these complications are still quite frequent. Suddenly and unexpectedly, life-threatening acute complications are occurring, which pose greater risks today. A high blood sugar level can lead to damage to blood vessels. With the small renal failure, the consequence is retinal failure, the nervous system, and damage to the heart, which can lead to heart-attack and diabetic retinopathy, which is the most frequent cause of blindness in the world today. Due to diabetic nephropathy or renal failure, a large number of people need to be treated with dialysis, the consequence of which is a lower quality of life. In addition, progression of diabetes can cause poorly managed diabetes to damage the blood vessels in the legs and in the worst case can even lead to diabetic gangrene, which the percentage of amputation is increasing.

ed by Andrej Janež, MD, PhD, Endocrinology and Diabetes at the University Medical Centre, Ljubljana, and Tadej Battelino, MD, PhD, Paediatric Endocrinology, Diabetes and Metabolism at the University Children's Hospital in Ljubljana, who explained ways of treating the disease today and in the future as well as perspectives of the disease in the world. In addition, Iva, a 27-year old student from Ljubljana answered some questions about the disease that she has been dealing with for the past year. If one falls ill with diabetes, they suffer from a progressive chronic disease that has long-term effects and poses high and invisible risks for numerous complications. Despite medical progress and modern approaches towards diabetes treatment that give the patient easier management and control over the disease, these complications are still quite frequent. Suddenly and unexpectedly, life-threatening acute complications are occurring, which pose greater risks today. A high blood sugar level can lead to damage to blood vessels. With the small renal failure, the consequence is retinal failure, the nervous system, and damage to the heart, which can lead to heart-attack and diabetic retinopathy, which is the most frequent cause of blindness in the world today. Due to diabetic nephropathy or renal failure, a large number of people need to be treated with dialysis, the consequence of which is a lower quality of life. In addition, progression of diabetes can cause poorly managed diabetes to damage the blood vessels in the legs and in the worst case can even lead to diabetic gangrene, which the percentage of amputation is increasing.



Maja Oblak

Media

Moje zdravje
30 May 2006

Slovenia

Inhabitants in Slovenia: 2,003,358
Source: Statistical Office of Republic of Slovenia

People with diabetes in Slovenia: 100,000
Source: Slovenian Diabetes Society

DIABETES

In the past, the present and the future

Diabetes is becoming an invisible epidemic of the modern world. Despite modern guidelines on healthy ways of living and the struggles of health organisations to constantly inform the public about healthy eating habits, the fact is that the number of overweight people who do not live healthily or do not get enough exercise is increasing, which is of great concern. These are factors that represent high-risk levels that can lead to this severe chronic disease. It is impossible to prevent type 1 diabetes; however, type 2 diabetes does not develop overnight. It is often hidden and waiting to attack our health. Decades or more might pass before one can notice it. It is impossible to predict its incidence. However, every moment is suitable for starting to take relatively easy preventive measures since tomorrow might be too late to become conscious about healthy living for those who have just fallen ill.

By Maja Oblak

The nature of diabetes is presented by Andrej Janež, MD, PhD, internal medicine specialist at the Clinic for Endocrinology and Diabetes at the University Medical Centre, Ljubljana, who explains the development of the disease, possible complications and ways of preventing its occurrence, and Tadej Battelino, MD, PhD, Chief Executive at the Department of Paediatric Endocrinology, Diabetes and Metabolism at the University Children's Hospital in Ljubljana, who explained ways of treating the disease today and in the future as well as perspectives on treating the disease in Slovenia and in the world. In addition, Iva, a 27-year-old student from Ljubljana answered some questions about the disease that she has been dealing with for the past year.

Illnesses caused by diabetes

If one falls ill with diabetes, they suffer from a progressive chronic disease that has long-term effects and poses high and invisible risks for numerous acute and chronic micro and macrovascular complications. Despite

medical progress and modern approaches towards diabetes treatment that give the patient easier management and control over the disease, these complications are still quite frequent. Sudden and unexpected worsening of life-threatening acute complications is visibly reduced today than it was decades ago. However, slowly developing chronic complications pose greater risks today. A high blood sugar level can eventually lead to damage to blood vessels. With the smaller blood vessels the consequence is retinal failure, renal failure or damage to the nervous system, and damage to the large blood vessels can lead to heart attack or stroke. Retinal failure can lead to diabetic retinopathy, which is the most frequent cause of blindness in the world today. Due to diabetic nephropathy or renal failure, a large number of people need to be treated with dialysis, the consequence of which is a lower quality of life. In addition, progression of diabetes or poorly managed diabetes can cause damage to vessels in the legs and in the worst case can even lead to diabetic gangrene, which is the cause of the

extremely high percentage of non-traumatic amputations, Dr Andrej Janež explained.

Type 1 and type 2 diabetes

Regarding the cause of the disease, diabetes can be divided into two types. The direct cause of type 1 diabetes is the autoimmune attack of a person's own immune system on the beta cells that produce insulin in the pancreas. The beta cells are completely destroyed within a few months to a year. The only option for treating this type of diabetes is with insulin. Experts still do not know the exact cause of the disease; however, the chance of it being inherited is 40 per cent, mostly because of the histocompatibility complex (HLA) that determines the immune characteristics of each individual. This type of diabetes affects a smaller percentage of people – up to 10 per cent of all people with diabetes. Type 1 generally occurs at a younger age, up to 30 years old.

Unlike type 1 diabetes, in type 2 diabetes, or diabetes mellitus, the pancreas still secretes



GLOBAL DIABETES W  LK
FOR THE DISADVANTAGED AND THE VULNERABLE
WORLD DIABETES DAY **14 NOVEMBER 2006**

www.gwlk.info



WORLD DIABETES FOUNDATION



novo nordisk®

© 2006 NOVONORDISK

insulin but too little or ineffectively. 90 per cent of all people with diabetes have type 2 diabetes, and the percentage is still increasing. In the past it was believed that it was mostly people over 45 who fell ill from this form of the disease, which was why it was also called "adult diabetes". However, this is not the case today, since more and younger people suffer from the disease. In most cases of this type of diabetes, the reason is not just the inadequate control of glucose metabolism. People with diabetes often have high blood pressure or blood fat levels that have negative effects on diseases of the heart and blood vessels, Dr Janež explained.

Forms of treatment

While type 1 diabetes is treated with insulin from the outset, the first stage of type 2 diabetes can be regulated successfully by simply changing your lifestyle and, if the disease progresses, with drugs and later with insulin. Dr Janež also explained that regardless of how the patient is treated – with drugs, insulin or a combination of both – diet and a suitable way of life are still the basis of good health.

Insulin treatment

Type 1 diabetes has been treated since 1927,

when insulin was discovered, explained Dr Tadej Battelino. To begin with, purified animal insulin was used for treatment and research showed that pork insulin was the most effective, beef insulin less so. In the 80s, recombinant DNA technology brought great changes in the science of diabetes. Recombinant human insulin became available. This was a product of genetic engineering and is still used today.

Based on duration and activity, insulin is divided into short, medium and long-acting forms.

Insulin analogues are frequently used for treating type 1 diabetes, mostly for younger people. A combination of a long-acting analogue, that acts regularly, and short-acting analogues, that take effect after meals, is used most frequently.

Type 2 diabetes is treated with insulin if treatment with diet and drugs is no longer effective.

Chances of treatment in the future

Dr Battelino said that current research in new ways of treating diabetes focuses on the development of electro-chemical measuring devices that constantly measure blood sugar levels. Such measuring devices allow patients round-the-clock tracking of blood sugar levels, and the integrated alarm mechanism warns

them when major deviations occur. The most beneficial function of this development is a combination of the measuring device for blood sugar levels and an insulin pump that automatically injects insulin according to the blood sugar level measured. At the moment, such pumps still need input and decisions from the patient (the pump can only recommend the insulin dosage) but perhaps scientists will develop a completely automatic device within a few years.

As an alternative to injecting short-acting insulin, a patient can also inhale it. One of these insulin inhalers is already registered, but it has been treated with caution by the experts in spite of promising short-term studies. Much research is still on going; however, the insulin inhaler seems likely to become one of the future methods of treatment. Nevertheless, we still hope that scientists will some day discover a medicine that can stop or cure diabetes.

Alternative methods

Among others, traditional herbal medicine lists the following herbs as agents that improve hypoglycaemia or low blood sugar level: onion, chicory, cucumber, artichoke, string beans, sage, nettle and bilberries. Current research on the effects of such herbs shows that cinnamon might soon be on that list, as well, for being a soothing drug for diabetes. ■

Global Diabetes Walk

The Global Diabetes Walk is an initiative by the World Diabetes Foundation supported by Novo Nordisk and is held on World Diabetes Day, 14 November, every year.

INTERVIEW

Iva, a 27-year-old student from Ljubljana

What were your first feelings when you found out you had to deal with the disease and how do you accept it today?

At first it was shocking – how is this possible? What does this mean? Why me? It took me a couple of days to start comprehending my new circumstances. My closest friends were very helpful: my cousin (who found out that he had diabetes a year before me), family, friends and doctors and nurses at the hospital, to whom I addressed all my questions.

After one year diabetes has become a part of me. I've come to terms with it and I live a completely normal life. The disease is not an obstacle.

How does diabetes change a person's life and daily habits?

Diabetes is a serious disease, even a life-

threatening one. But if you are responsible and adjust your ways of living to the disease, you can live your way of living and with no complications.

Life changes to some extent of course, but I never took these changes as something very dramatic. You need to become more responsible for yourself and your body, you need to act more careful and things can no longer be as spontaneous and carefree as they used to be. It might sound strange, but since I've fallen ill I live healthier than before. Exercise is very important for a person with diabetes. I exercise every day for at least half an hour, I go for walks, ride my bicycle if the weather is fine and so on.

For a person with diabetes it is important to be psychically balanced and calm since stress has negative effects on the blood sugar level. Autogenic training is very helpful as well.

Diet is very strict for a diabetic patient. What are your dietary or eating habits like?

In the beginning I strictly followed the diet I was given at the hospital. I still follow it, but I do not take it as something that was forced on me since it has simply become my way of

eating. Now my menu consists of a lot of fresh vegetables and fruit, and as little carbohydrates and fat as possible. I have realised that white bread is my worst enemy because it increases the blood sugar level more than some desserts do. I do not take sugar and I stay away from artificial sweeteners.

Now I can say that such a diet suits me. Even if I had a chance to eat the way I did before, I would never do it.

In addition to diet, insulin treatment is necessary for type 1 diabetes. How do you find this therapy and what kind of insulin and accessories do you use?

I use short and long-acting insulin – I take short-acting insulin three times a day before meals and long-acting insulin once a day, before I go to sleep. The sugar-measuring device is a very important accessory because I can measure my blood sugar level any time I want. This is very helpful in the beginning as you are getting used to it but eventually you get a feel for it and measuring is not needed as frequently. However, the sugar-measuring device is still an obligatory part of the "equipment" for people with type 1 diabetes (who are treated with insulin). ■

The pre-diabetic state – an alarming state?

"It is very important to discover the people who are in the high-risk group – that is those who have high blood sugar levels and are overweight. There are several studies today that show that people with a disturbed sugar tolerance – who are in some pre-diabetic state – can significantly decrease the possibility of developing diabetes by changing their lifestyle and especially by regulating their weight. This fact was shown by studies in Finland and in China. In addition, the studies also showed that it is possible to decrease the occurrence of diabetes by 58 per cent through suitable management of the person's weight. However, it is impossible to reduce the occurrence of the disease by more than 20-30 per cent using any of the pharmacological means that reduce blood sugar levels.

"Changing your lifestyle is a necessity in order to stop the disease from occurring (so) suddenly," added Dr Andrej Janež.

INTERVIEW

Doctor Tadej Battelino

How do we diagnose the disease?

The disease can be diagnosed when children, adolescents and young adults who have not been feeling well for the past couple of days or weeks, noticing an increased thirst and other signs, come to the hospital and are found to have an increased blood sugar level, or in the worst case ketoacidosis. Then we start treatment with liquids and insulin.

How do children, teenagers and adolescents deal with diabetes, especially teenagers who are very sensitive at this time?

The same way as with every problem. This means that they partly reject and partly accept the disease. Certainly, adolescence is additionally problematic for every chronic patient. This is especially true for diseases such as diabetes where the patient must follow strict rules.

Adolescents often reject and give up control over the disease. It is very helpful to talk to them, advise them, have more frequent control over them, remind them of things and offer them additional options, such as treatment with an insulin pump, which can be more attractive for a teenager.

Is a diabetic patient stigmatised in some way in today's society?

As far as the expression is concerned, we do not talk about diabetic patients but about people with diabetes, which is very important. One of the goals of the "St. Vincent Declaration" is not to treat people with diabetes as patients but as healthy people who have blood sugar levels sorted in a different way. However, we are noticing that these goals are not completely realised in all countries, although we know that people with well-managed diabetes have a surprisingly small number of problems. We can also say that children and adolescents who have diabetes in our schools function completely normally, mostly with no special treatment (or additional benefits and attention).

The incidence of people with type 2 diabetes across the world is increasing rapidly. Can we speak of an epidemic?

We can. The countries most prone are the United States, Germany and England, that is, countries with an ethnically mixed population. It is well known that Asians, Africans and Latin Americans are more inclined towards developing type 2 diabetes. Unfortunately the disease is increasing in other European countries as well and mostly in the developing countries. Whether Slovenia will need to face this problem depends on whether we will be able to successfully stop the extreme obesity problem. At the moment, the problem is under control in young people, but whether we will be able to maintain that remains a challenge.

How is Slovenia preparing for such a problem?

Several programmes currently exist in Slovenia that give advice to children and adolescents about exercise and healthy living. The first cross study on the obesity problem was published last December, when we presented the starting points.

If Slovenia succeeds in preventing children and adolescents from gaining too much weight, this would most certainly be one of the biggest successes of public healthcare for children and adolescents. ■