Gender-specific approach to diabetes

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The international guidelines on the drug-based therapy of diabetes mellitus specify which factors need to be taken into account during treatment. Factors such as age, the duration of the condition, life expectancy, the social environment and co-morbidities all have a part to play. "What's missing in this checklist, however, is gender," states Alexandra Kautzky-Willer, expert in gender medicine at the MedUni Vienna, in the run-up to the 7th annual conference of the Austrian Society for Gender-Specific Medicine, which is being held next Friday in Vienna.

Diabetes has been effectively treatable with medications for many years,

and new classes of drugs are constantly being added that work in new ways. This treatment, however, lacks the gender-specific equation, says Kautzky-Willer: "The various medicines and treatments have different side effects and effects on men and women. This isn't thought about in most cases – or doctors aren't aware of the issue."

One of the latest treatments for diabetes uses SGLT2 inhibitors, which cause sugar to be excreted in the urine and only a small amount is absorbed back into the circulation via the kidneys. Studies, however, have shown that this treatment can lead to more genital infections (vaginal yeast infections) in women. "On the other hand, it is precisely this form of treatment that is particularly popular among women because of the weight loss associated with it," says the diabetes expert from the MedUni Vienna. "Moreover, this new class of drugs is not associated with an increased risk of hypoglycaemia, which is more common among women on insulin therapy than men."

A further form of treatment, based on the 11β hydroxysteroid-dehydrogenase enzyme, is currently in development. These medicines block the conversion of inactive cortisone into active cortisol and therefore influence energy regulation and the metabolism, including the formation of liver fat. In a current international study, in which the MedUni Vienna was involved, it was demonstrated that 20 per cent of the study subjects with fatty livers had normalisation of their liver fat levels after three months on this treatment and a reduction in the fat around their middle. The unwanted side effect, however, was that female study participants experienced a significant rise in their testosterone levels.

Says Kautzky-Willer: "These examples alone show how important gender-specific approaches and choices of therapy are in the context of personalised medicine." The study has now been published in the journal *Lancet Diabetes Endocrinol.*

Fatty deposits around the heart as a late consequence of diabetes

In a further recent study published in *PLOS ONE*, the researchers from Vienna's University Department of Internal Medicine III investigated whether fatty deposits in the hearts of patients with diabetes mellitus occurred in the early stages of the disease in young women at high risk - which is the case for fat in the liver. This could then lead to a higher rise in the risk of cardiac complications for female diabetic patients compared to male diabetic patients. The result: fatty deposits in the heart, with their associated increased risk of developing diabetic cardiomyopathy, is a late consequence of diabetes and could be prevented or delayed by adopting lifestyle changes and losing weight.

600,000 Austrians have diabetes

Around 600,000 people in Austria, approximately eight per cent of the population, have diabetes. These are the latest figures from the current Austrian Diabetes Report 2013 published by the Ministry of Health. Women with diabetes frequently report a poorer quality of life than men, with women feeling less psychologically able to cope than men. Female diabetic patients are also more likely to be depressed than their male counterparts.

There are a number of preventative approaches that can be taken to prevent the onset of type 2 diabetes, since lifestyle factors play a considerable role in this. The main causes include stress, smoking, lack of exercise, an unhealthy diet and most importantly central obesity.

The dangerous thing about diabetes is that it develops insidiously and many people affected by it only find out that they have it when they experience a dangerous consequential condition such as a heart attack,

stroke, impaired vision or impaired kidney function. Alexandra Kautzky-Willer, who is also President of the Austrian Society for Gender-Specific Medicine, therefore advises early screening. This is particularly the case for at-risk groups: people over the age of 45, overweight people, people with a large waistline, those with a genetic predisposition to diabetes, but also people who have heart failure or fatty liver diseases. In women at higher risk, an oral glucose tolerance test (OGTT) is recommended.

More information: "Hepatic Rather Than Cardiac Steatosis Relates to Glucose Intolerance in Women with Prior Gestational *Diabetes*." Yvonne Winhofer, Martin Krssak, Peter Wolf, Andrea Tura, Christian-Heinz Anderwald, Lana Kosi, Gert Reiter, Giovanni Pacini, Siegfried Trattnig, Anton Luger, Michael Krebs, Alexandra Kautzky-Willer. *PLOS ONE*, March 12, 2014.

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