

Patient information

Diabetes: The Complications

Introduction

The long term complications of diabetes involve many different systems in the body. These may be found at time of diagnosis of diabetes, or many years after the onset of diabetes. Many of the long term complications of diabetes are thought to be due to persistently elevated levels of blood glucose and it has been shown, that controlling blood glucose levels and blood pressure may minimize or prevent the onset of these complications.

It is difficult to predict who is likely to develop chronic complications of diabetes which may sometimes occur regardless of the level of control.

What are the complications of diabetes?

The complications of diabetes may be categorised as:

- Acute metabolic complications - diabetic ketoacidosis and hypoglycaemia
- 'Macro-vascular' (involving large blood vessels) complications - coronary heart disease, strokes, peripheral vascular disease
- 'Micro-vascular' (involving small blood vessels) complications - diabetic retinopathy, neuropathy, diabetic nephropathy
- Infections
- Other problems include cataracts, erectile dysfunction

What is known about the risk of complications in Type 1 diabetes?

It is unusual for people with type 1 diabetes to have complications such as retinopathy and nephropathy within the first five years of their diabetes.

Studies have shown that the risk of kidney damage and eye disease are more common in people with poor control. This risk rises steeply above HbA1c values of 9% and is highest if the HbA1c value is above 12%.

The Diabetes Control and Complications Trial (DCCT) showed that 12% of people Type 1 diabetes who were intensively treated (tight control) developed new retinopathy changes after nine years, compared to 54% of people who were treated with conventional (less tight

control) methods. Progressive retinopathy was uncommon at HbA1c levels below 7%. People with very mild retinopathy were also less likely to progress to severe retinopathy if they were well controlled.

Similar observations have been made for diabetic nephropathy. Once retinopathy or nephropathy are well established, tight control is unlikely to provide a significant benefit. Prevention of complications is therefore desirable in people with Type 1 diabetes by tight control, started early, in suitable people.

What is known about the risk of complications in Type 2 diabetes?

The main concern in Type 2 diabetes is with regard to the risk of vascular complications. This form of diabetes carries a heightened risk of heart attacks, stroke and circulatory problems.

The United Kingdom Prospective Diabetes Study showed that high blood glucose concentrations contribute to the risk of small vessel disease in type 2 diabetes as well. The researchers examined over 4000 people with type 2 diabetes, once again looking at the effects of 'intensive' and 'conventional' treatment. Over a period of ten years, people in the intensively treated group, who had an HbA1c level of 7.0% (compared to 7.9% in the conventional treatment group) were found to have a 25% risk reduction in complications such as eye and kidney disease.

Does everyone with diabetes develop complications?

No, not everyone who has diabetes will develop complications. There is good evidence that good control of blood sugar, blood pressure, cholesterol lowering, a healthy lifestyle with plenty of exercise and no smoking will prevent complications in most people.

Can these complications be cured?

Acute complications of diabetes usually resolve completely with treatment.

Once the chronic complications of diabetes are established, they rarely resolve completely. The best counsel therefore, is that of 'prevention'. Much can be done to alleviate the problems associated with chronic complications of diabetes.

For further information go to: www.diabetesuffolk.com

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