

Statins and diabetes

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The treatment of diabetes has traditionally focused on controlling the blood sugar level through diet combined with injections of insulin or tablets.

There's no doubt that good glucose control is central to minimising the risk of long-term complications such as damage to nerves, circulation, kidneys and eyes.

But over recent years, attention has focussed on the fact that people with diabetes are up to four times more likely to suffer a major event involving the circulation - for example a heart attack or a stroke (cerebrovascular accident).

In fact, coronary heart disease is the leading cause of death in people who have both Type 1 and Type 2 diabetes.

All this means it's now recognised that diabetes, particularly Type 2, is as much a disease of the circulatory system as it is of blood glucose control.

How can I reduce my risk?

Term watch

Cardiovascular means the heart and circulation.

Cardiovascular diseases are those diseases caused by hardening of the arteries.

This leads to:

- angina (chest pains)
- heart attacks
- stroke
- poor circulation.

There have been significant inroads in the prevention and treatment of cardiovascular disease.

- Stopping smoking and good blood pressure control has a significant impact in reducing long-term damage to the circulation.
- Raised cholesterol levels is another factor that increases your cardiovascular risk.
- The benefits from stopping smoking, reducing cholesterol levels and lowering high blood pressure multiply up.

Stopping smoking is probably the most important thing you can do to reduce your cardiovascular risk. Many GPs run special smoking cessation clinics. Diet and exercise help lower raised blood pressure. But how can you reduce cholesterol levels?

While a healthy lifestyle plays a part, the most effective way to reduce cholesterol levels is by using a group of drugs known as statins.

How do statins work?

Although we get cholesterol from our diet, more than 80 per cent of cholesterol in our bodies is made by the liver.

Statins slow the action of an enzyme in the liver that plays a key role in the manufacture of cholesterol. This causes the level of blood cholesterol to drop.

There are currently five drugs in this class available for prescription in the UK:

- atorvastatin (Lipitor)
- fluvastatin (Lescol), (Lescol XL)
- pravastatin (Lipostat)
- rosuvastatin (Crestor)
- simvastatin (Zocor).

All of the statin drugs work in the same way.

How effective are statins for people with diabetes?

Statins lower cholesterol, but would they make a difference for people with diabetes? Two major studies investigated the benefits.

In both, the effects of a daily dose of a statin versus no treatment was compared in people with diabetes.

Collaborative Atorvastatin Diabetes Study (CARDS)

This study involved nearly 3000 people with Type 2 diabetes aged 40-75.

It looked at the benefits of taking a 10mg dose of atorvastatin daily.

None of the participants had heart disease at the start of the trial, but they did have an extra risk factor for developing it, such as smoking, high blood pressure, diabetic retinopathy or protein in the urine indicating diabetic kidney disease.

For those taking the statin, the risk of heart attack reduced by 37 per cent and stroke by 48 per cent.

These benefits were seen regardless of age, sex or whether the cholesterol level was high or low.

The trial's success meant it was halted two years early.

The Heart Protection Study (HPS)

The HPS study involved nearly 6000 people with diabetes aged 40-80.

It looked at the benefits of taking a 40mg dose of simvastatin each day. Just under half of the participants showed signs of cardiovascular disease, while half did not.

It found this routine use of statins cut the number of heart attacks and strokes in both groups by a third.

Cholesterol levels

- Ideal level: less than 4mmol/l.

Benefits were also seen in people whose cholesterol levels were not high in the first place (less than 5mmol/l) and in those at the top of the age range.

The results showed statins can prevent cardiovascular disease, because they reduced heart attacks and stroke in people who didn't have cardiovascular disease at the start of the trial.

What are the side effects?

Statins are generally well tolerated.

But in some people they cause headaches, affect liver function and cause stomach problems such as abdominal pain, constipation, flatulence, diarrhoea and vomiting.

More rarely, they can cause rashes and disorder of the muscles (myopathy).

Where a statin cannot be tolerated, alternative medications such as ezetimibe or a fibrate drug may be tried but these medications do not lower cholesterol to the same degree as a statin.

Should everyone with diabetes take a statin?

This is currently a matter of intense debate.

All people with diabetes over the age of 40 should take a statin, according to the NICE guidelines (2008). Statins may be prescribed in diabetic patients who are under 40 years of age if there are additional cardiovascular risk factors or if there is diabetic eye disease (retinopathy) or kidney disease (neuropathy) present.

The CARDS and HPS studies have clearly shown that statins reduce cardiovascular risk, regardless of how low cholesterol levels are in the first place.

This suggests there shouldn't be a level of blood cholesterol below which statin treatment is considered unbeneficial.

More research is now in progress to try and clarify the broader use of statins in diabetes treatment.

Below are some factors that need to be considered.

- **Not everyone with diabetes has the same risk:** there are people with Type 2 diabetes who aren't overweight. Not all smoke or have high blood pressure. So while the studies show statins are effective across the board, we can't yet say everyone should take them.
- **The role of statins for those under 40:** it isn't suggested that people under 40 will benefit from taking a statin. This needs to be looked at, especially in view of the rising numbers of young adults with Type 2 diabetes.
- **A statin is just one part of treatment:** while statins reduce cholesterol levels, there are other factors that increase cardiovascular risk. This means sensible eating, exercise, good blood pressure control and avoidance of smoking and excess drinking.

In the long term

Tackling the cardiovascular risk of diabetes is every bit as important as regulating your blood sugar level.

For many people it is more important, and statins are now among the most powerful tools we have to influence this risk.

References

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