

Gout drug shown to benefit diabetes patients at risk of heart disease

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New research carried out at the University of Dundee has led to the possibility of using an old drug to help prevent the biggest cause of death in Type II diabetes patients.

Allopurinol, an inexpensive drug used to prevent gout for more than 50 years, has been shown to reduce thickening of the heart muscle wall, known as Left Ventricular Hypertrophy (LVH), in [diabetes patients](#). Reducing thickening is known to help reduce the risk of future cardiovascular events and, as [heart disease](#) and stroke account for 65 per cent of all fatalities in people with diabetes, the findings offer the possibility of improving the [life expectancy](#) of patients.

The senior corresponding author on the study, Dr Jacob George from the University's Division of Cardiovascular & Diabetes Medicine says that this follows on from previous studies at Dundee that have shown that [allopurinol](#) has benefits for patients with heart failure, angina and previous stroke.

"Cardiovascular disease is the single biggest cause of death in diabetic patients," said Dr George. "Diabetics' cardiovascular risk is significantly higher than non-diabetics. In particular, large trials have previously shown us that patients with [left ventricular hypertrophy](#) are at much higher risk and so it should follow that if we reduce LVH we will reduce mortality rates.

"Previously, our group have looked at patients with coronary artery

disease and how allopurinol helps them, but this is the first time we have looked specifically at people with Type II diabetes who have heart muscle thickening.

"There may be different reasons for patients with coronary heart disease and those with diabetes experiencing left ventricular hypertrophy and although we had good reason to suppose that allopurinol should help to reduce thickening in this second group, it had never been proven before.

"It was very important to show that allopurinol was able to reduce LVH in diabetics as well as non-diabetic coronary artery disease patients. As obesity becomes more of an issue in the UK and diabetes becomes more prevalent, this treatment could become an important weapon in improving the cardiovascular outcome in diabetic patients."

Dr George and his colleagues looked at a sample group of 66 Type II diabetes patients, half of whom who were given allopurinol and half a placebo for nine months. The results showed that the thickness of the [heart muscle](#) wall, measured by cardiac MRI, was significantly reduced in the group who took allopurinol.

It is believed that allopurinol reduces oxidative stress, the process that leads to the production of damaging free radicals that cause thickening of the left ventricle of the heart, while also improving blood vessel health. This means the blood vessels will provide less resistance against the pumping of the heart and such resistance has been shown to cause LVH.

The research, funded by the charity Diabetes UK, is also interesting in that it shows allopurinol does not affect blood pressure, unlike other drugs currently used to reduce LVH.

Dr George continued, "The most common reason for developing LVH is

high blood pressure but our patients were very well controlled with optimal treatments currently available for patients and despite that still experienced thickening. This might be down to oxidative stress molecules, and there is evidence that diabetes patients experience higher levels of this than the non-diabetic population.

"If a larger-scale study backs up these findings then there is reason to be excited about the potential for using allopurinol as a therapy to reduce [cardiovascular events](#) in patients with Type II diabetes. It has been on the market for decades so is cheap and safe and our research suggests it is a way of treating LVH without lowering blood pressure.

"This is another piece of the large jigsaw we've been putting together in Dundee for over the last 20 years. We have shown that allopurinol has potential in [heart](#) failure, coronary artery disease, [stroke](#) and now [diabetes](#) patients. We are building a body of evidence that will allow us to determine whether putting patients on high doses of allopurinol is a realistic way of significantly reducing cardiovascular mortality.

The paper resulting from the Dundee study is published today in the prestigious *Journal of the American College of Cardiology*, along with an accompanying editorial highlighting the findings.

Provided by University of Dundee

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