Gout drug offers hope for heart disease patients

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(Medical Xpress)—Research at the University of Dundee has shown than an old, inexpensive anti-gout drug has benefits for heart disease sufferers and has the potential to one day help prevent heart disease, sudden deaths and strokes.

The Dundee team, led by Allan Struthers, Professor of Cardiovascular Medicine, has shown that allopurinol, a drug that has been used to prevent gout for more than 40 years, reduces thickening of the heart muscle wall, known as left ventricular hypertrophy (LVH).

Such thickening is known to be a modifiable risk factor for future cardiovascular events and, as such, patients with heart disease may be able to prevent such adverse outcomes by taking allopurinol.

Previous studies by Professor Struthers and his team at the University's Division of Cardiovascular & Diabetes Medicine have shown that angina sufferers who were given allopurinol were able to exercise longer and harder before they experienced the chest pain that occurs when the heart runs short of oxygen. This means the drug reduces symptoms and has the potential to reduce the need for angioplasty, surgery and hospital admissions.

According to Professor Struthers this latest research, funded by the Medical Research Council (MRC) and published today in *Journal of the American College of Cardiology*, represents another "piece of the jigsaw" in establishing the benefits that allopurinol can bring in terms of cardiac

health.

"The fact allopurinol has been shown to work in several different ways means it possesses exciting potential for use in heart disease patients," he said. "Our work has been leading towards allopurinol improving both symptoms and survival rates. We have already shown the former to be the case and this latest research shows that the latter may also be true".

In this latest paper Professor Struthers and his team looked at a sample group of 66 heart disease 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 was significantly reduced in the group who took allopurinol. Allopurinol probably does this for two reasons.

Firstly, Allopurinol reduces oxidative stress which is a process that leads to the production of oxidative free radicals that cause thickening of the left ventricle of the heart.

In addition, allopurinol also improves blood vessel health, meaning they will provide less resistance against the pumping of the heart and such resistance can cause LVH itself.

Professor Struthers continued, "Using cardiac magnetic imaging we were able to show that allopurinol reduces thickening of the left ventricle of the heart and that is usually thought of as a key surrogate, meaning that the same treatment should reduce heart failure, sudden death and strokes in the future.

Professor Struthers says the next step is for a large-scale trial to take place involving thousands of patients that will seek to prove for sure that allopurinol improves survival rates.

If that proves positive, he believes that it would be possible to begin treating heart disease sufferers immediately after.

"We would be looking to offer allopurinol as an additional treatment that can improve outcomes for patients who have already presented with heart disease. Allopurinol has been on the market for about 40 years and so it's a cheap drug, one that is obviously very well tolerated with very few side-effects.

"What we have shown is that it has properties which potentially improve vascular health, reduce pain for angina patients, reduce oxidative stress and potentially prevent sudden death, heart failure, stroke and possibly heart attacks. We live in an age of austerity and finding new uses for old drugs that are cheap and safe is exactly what we need at this time."

Provided by University of Dundee