

Viagra linked with reduced heart attack risk and improved heart attack survival

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Credit: University of Manchester

Men with type 2 diabetes taking treatments for erectile dysfunction could be reducing their risk of a heart attack and improving their chances of surviving a heart attack, according to a study funded by the British Heart Foundation (BHF) and the National Institute of Health Research (NIHR).

The researchers at the University of Manchester were studying the electronic health records between January 2007 and May 2015 of almost 6,000 men with type 2 diabetes aged between 40 and 89 years old.

The findings, published in the *BMJ* journal *Heart*, provide strong evidence that [erectile dysfunction](#) treatments that block an enzyme called PDE5 act to reduce risk of death in type 2 diabetes, according to the researchers. Viagra is one example of an erectile dysfunction treatment that works by blocking the PDE5 enzyme.

Compared with non-users, the 1,359 men who were prescribed PDE5 inhibiting drugs experienced lower percentage of deaths during follow-up (19.1 per cent vs. 23.8 per cent) and lower risk of death (31 per cent) by any cause. Risk of death was still reduced after adjusting for age and other factors that affect [heart disease](#) risk. They also found that there were significantly fewer [heart](#) attacks in people taking erectile dysfunction treatment over the study period. And in a subgroup of patients who had a history of [heart attack](#) or had one during the study period, the drugs were associated with significantly lower risk of death.

3.5 million adults in the UK have been diagnosed with diabetes and 90 per cent of those people have type 2. Having diabetes can double the risk of developing cardiovascular disease.

One of the Manchester team, BHF Senior Research Fellow Professor Andrew Trafford, has already shown in the lab that heart cells from a failing heart survive longer when they receive this treatment. This team is now looking to confirm whether the same drugs can also prevent [abnormal heart rhythms](#) which are responsible for killing up to half of heart failure patients. They hope that these two laboratory studies, in animals, will then lead to clinical trials in people with heart failure.

"Our laboratory work was pointing us towards the potential benefits of

these erectile dysfunction treatments on the heart so it's reassuring to learn that they could reduce [heart attack risk](#) and improve heart attack survival in people with diabetes. Having diabetes is a major risk factor for heart disease so any treatments that could reduce that risk are urgently needed. Erectile dysfunction treatments like Viagra are already licensed for use so, if clinical trials provide further evidence of a lifesaving benefit, it might be possible to start treating people with this drug in the not too distant future," says Professor Andrew Trafford, who worked on this research funded by the BHF at the University of Manchester.

"Viagra was originally being developed as a cardiovascular treatment in the UK. Researchers were looking at its use in people with high blood pressure and angina. Ultimately the drug, of course, came to prominence in treating erectile dysfunction so it's promising to see we may have rediscovered the drug's potential in fighting heart disease. Research is now needed to see whether the findings seen in health records are also found in the tightly controlled setting of a clinical trial. And we look forward to learning exactly how the drug acts on the heart through Professor Trafford and his colleague's studies," says Professor Jeremy Pearson, Associate Medical Director at the BHF.

More information: Simon G Anderson et al. Phosphodiesterase type-5 inhibitor use in type 2 diabetes is associated with a reduction in all-cause mortality, *Heart* (2016). [DOI: 10.1136/heartjnl-2015-309223](https://doi.org/10.1136/heartjnl-2015-309223)

Provided by University of Manchester

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