

Common infections a bigger heart disease and stroke risk than obesity

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Credit: Aston University

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A British team, based at Aston Medical School in Birmingham, found patients admitted to hospital with a urinary or respiratory tract infection were far more likely to experience subsequent heart attacks or strokes.

The researchers, from the ACALM (Algorithm for Comorbidities, Associations, Length of Stay and Mortality) study unit, looked at 14 years of data from 1.2million patients. From this big data registry they compared 34,027 patients who had been admitted with a urinary or [respiratory tract infection](#) with an age and sex-matched control group without infection.

As well as finding that those with prior infection were much more likely to experience subsequent heart attacks or strokes, the data also suggested that patients who had one of these common infections were three times more likely to die than those without prior infection after developing heart disease, and almost twice as likely to die if they had a stroke.

The researchers took account of factors known to increase the risk of heart disease and stroke including age, gender, ethnicity, obesity and tobacco use, as well as medical conditions including excess cholesterol, [high blood pressure](#), diabetes and kidney disease, heart failure and atrial fibrillation. The effects of infection were of similar magnitude to diabetes, hypertension, cholesterol – and more than obesity.

ACALM founder and cardiologist Dr. Rahul Potluri, an expert in 'big data' medical research at Aston University, said:

"Our figures suggest that those who are admitted to hospital with a respiratory or urinary tract infection are 40 per cent more likely to suffer a subsequent [heart attack](#), and 2.5 times more likely to have a stroke, than patients who have had no such infection – and are considerably less likely to survive from these conditions."

Specifically, the team was studying whether patients who had been admitted for respiratory and [urinary tract infections](#) were at increased risk of events such as heart attacks and strokes caused by atherosclerosis (build-up of plaque in artery walls).

The role of inflammation in this process has recently received a great deal of scientific attention, since the CANTOS trial showed that anti-inflammatory therapies can reduce the risk of having a heart attack. Very little is known about the role of infection in this process.

Dr. Potluri said: "It is notable that infection appears to confer as much, if not more, of a risk for future [heart disease](#) and [stroke](#) as very well established risk factors such as high blood pressure and diabetes. Although inflammation has been linked to atherosclerosis, this is the largest study to show that common infection is such a significant risk factor."

Lead author Dr. Paul Carter, a researcher at Aston's ACALM big data study unit and academic clinical fellow at Cambridge University, said:

"The data illustrate a clear association between infections and life-threatening [heart](#) conditions and strokes, and the figures are too huge to ignore. Serious infections are amongst the biggest causes of death in the UK directly, but our research shows infections that are severe enough to lead to hospitalisation may present a delayed risk in the form of these atherosclerotic diseases.

"The sheer number of people who could be affected presents a challenge that needs further investigation. The recent CANTOS trial has paved the way for future therapies to target systemic inflammation and we have shown that managing cardiovascular risk after an [infection](#) is important, and further research is required."

Provided by Aston University

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