

Irregular heartbeat linked to wider range of serious conditions than previously thought

6 September 2016

An irregular heartbeat (known as atrial fibrillation) is associated with a wide range of serious events, including heart attacks, heart failure, chronic kidney disease, and sudden cardiac death, finds a large study in *The BMJ* this week.

The findings show that the risk associated with many of these events is greater than that of stroke - a known risk of [atrial fibrillation](#) - prompting the researchers to call for interventions to reduce the risk of non-stroke outcomes in adults with the condition.

It is already known that atrial fibrillation is associated with an increased risk of stroke and death, as well as higher medical costs and a reduced quality of life. But the association between atrial fibrillation and cardiovascular events other than stroke is less clear.

So a team of researchers based at the University of Oxford in the UK and the Massachusetts Institute of Technology in the USA set out to quantify the associations between atrial fibrillation and cardiovascular disease, renal (kidney) disease, and death.

They analysed the results of 104 studies involving over nine million participants (587,867 with atrial fibrillation). Differences in study design and quality were taken into account to minimise bias.

Atrial fibrillation was associated with an increased risk of a range of different outcomes, including all cause mortality, [ischaemic heart disease](#), chronic [kidney disease](#), heart failure, and sudden cardiac death.

Absolute risk increases (based on the US population) included 3.8 events per 1,000 participant years for all cause mortality, 1.4 events per 1,000 participant years for ischaemic heart disease, and 6.6 events per 1,000 participant years for [chronic kidney disease](#).

The absolute risk increase for heart failure (11 events per 1,000 participant years) was the highest among the outcomes examined.

Atrial fibrillation was also associated with a twofold risk of cardiovascular mortality, a 2.3-fold risk of stroke, and a fivefold risk of incident [congestive heart failure](#).

Further analyses to test the strength of the associations between atrial fibrillation and these outcomes were broadly consistent, suggesting that the results are robust.

The researchers point out that the risk increases associated with many of these events is greater than that of stroke, and say their study "adds to the growing literature on the association between atrial fibrillation and cardiovascular outcomes beyond stroke."

Even though the associations they describe cannot indicate causality for the non-stroke outcomes, "there is merit in developing clinical risk prediction models for outcomes such as congestive [heart failure](#); particularly given our relative and absolute risk estimates," they write.

"Finally, our study could have implications for the prioritisation of public health resources and the development of novel interventions for adults with atrial fibrillation," they conclude.

More information: Atrial fibrillation and risks of cardiovascular disease, renal disease, and death: systematic review meta-analysis, *The BMJ*, www.bmj.com/content/354/bmj.i4482

Provided by British Medical Journal

APA citation: Irregular heartbeat linked to wider range of serious conditions than previously thought (2016, September 6) retrieved 3 May 2021 from <https://medicalxpress.com/news/2016-09-irregular-heartbeat-linked-wider-range.html>

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