

Heart attacks in young adults more deadly in those with systemic inflammatory disease

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Heart attacks in young adults are twice as likely to be fatal in those with inflammatory conditions like psoriasis, lupus or rheumatoid arthritis. That's the finding of a study published today in the *European Journal of Preventive Cardiology*.

At least 2% of people in Europe and worldwide have systemic inflammatory diseases, which often affect multiple organ systems. Many of these systemic inflammatory diseases are driven by autoimmunity, meaning the body's [immune system attacks](#) itself. Psoriasis is the most common and causes red, itchy, scaly patches on the skin, and can also cause inflammation in the joints. Rheumatoid arthritis leads to inflammation in joints of the hands and feet and in other organ systems. In [systemic lupus erythematosus](#) (lupus), the body can attack the skin, joints, kidneys, [blood cells](#), brain, heart and lungs.

People with systemic inflammatory diseases have an increased risk of heart attacks. Inflammatory conditions can occur at any age, but onset is often in young adulthood. This was the first study to examine the frequency and impact of inflammatory [disease](#) in young [heart attack](#) patients.

The study used data from the YOUNG-MI registry, which enrolled patients who had a heart attack aged 50 or younger between 2000 and 2016 and were treated at Massachusetts General Hospital and Brigham and Women's Hospital in Boston. The researchers identified patients with systemic inflammatory diseases and compared them to those

without these conditions.

Among 2,097 heart attack patients aged 50 or younger, 53 (2.5%) had an inflammatory disease. Psoriasis was the most common (64%), followed by lupus (23%), rheumatoid arthritis (9%), and other conditions (4%). As expected, patients with inflammatory conditions were more likely to be female. They were also more likely to have [high blood pressure](#) but had similar rates of high cholesterol and diabetes compared to those without inflammatory diseases.

During a median follow-up of 11.2 years, patients with inflammatory conditions were nearly two times more likely to die compared to those without inflammatory conditions.

The researchers then compared death rates in the 53 patients with inflammatory diseases to a subsample of 138 patients without these conditions. The two groups were matched for age, sex, and cardiovascular risk factors including diabetes, obesity, smoking, high blood pressure, and high cholesterol. Patients with inflammatory diseases were 2.68 times more likely to die during the 11.2-year follow-up compared to the matched group without inflammatory conditions.

Study author Dr. Brittany Weber, a cardio-rheumatology specialist at Brigham and Women's Hospital and Harvard Medical School said: "This suggests that the worse long-term survival in young heart attack patients with inflammatory diseases could be related to inflammation versus higher prevalence of other cardiovascular risk factors."

Aspirin and statins are recommended after a heart attack, but the study found that patients with inflammatory conditions were less likely to be prescribed these medications at discharge than those without inflammatory diseases. "We were surprised at this finding," said Dr. Weber. "One reason could be concerns about drug-drug interactions

since these patients often take medications that suppress the immune system. Given that systemic inflammatory diseases are rare, numbers in this study were small, and it is important to confirm this result in other similar cohorts."

Dr. Weber said tools were needed to accurately predict the risk of a heart attack in individuals with inflammatory diseases to target prevention efforts such as statins. She said: "The current calculators, which are used to determine eligibility for preventive medications, generally underestimate cardiovascular risk in patients with systemic inflammatory diseases."

Regarding how to prevent first and subsequent [heart](#) attacks, Dr. Weber said people with [inflammatory conditions](#) should follow the same advice as the general population. She said: "Lifestyle behaviours are incredibly important, including healthy eating, physical activity and not smoking, plus controlling cholesterol, blood pressure and diabetes."

More information: Brittany Weber et al, Association of inflammatory disease and long-term outcomes among young adults with myocardial infarction: the Mass General Brigham YOUNG-MI Registry, *European Journal of Preventive Cardiology* (2021). [DOI: 10.1093/eurjpc/zwaa154](https://doi.org/10.1093/eurjpc/zwaa154)

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