

Rheumatoid arthritis increased the risk for myocardial infarction in women

Solomon DH, Karlson EW, Rimm EB, et al. **Cardiovascular morbidity and mortality in women diagnosed with rheumatoid arthritis.** *Circulation.* 2003;107:1303-7.

QUESTION

In women, is onset of rheumatoid arthritis associated with an increased risk for myocardial infarction or stroke?

DESIGN

A cohort of women followed for 18 years.

SETTING

United States.

PATIENTS

114 342 women 30 to 55 years of age in 1976 were recruited from the Nurses' Health Study. Exclusion criteria included rheumatoid arthritis, cardiovascular disease, and cancer at baseline. 7% (7786 women) reported incident rheumatoid arthritis during follow-up.

ASSESSMENT OF PROGNOSTIC FACTORS

The women completed questionnaires every 2 years to update information about recent illness, including rheumatoid arthritis and dates of diagnosis, dietary habits, weight, cigarette smoking, menopausal status, physical activity, blood pressure, and use of prescription and over-the-counter medications as well as dietary supplements. For women who reported rheumatoid arthritis, attempts were made to confirm the diagnosis. Associations

between rheumatoid arthritis and the cardiovascular endpoints were assessed using multivariate analyses.

MAIN OUTCOME MEASURES

Incidence of fatal and nonfatal myocardial infarction or stroke.

MAIN RESULTS

During follow-up, a diagnosis of rheumatoid arthritis was confirmed in 527 (0.5%) women. The incidence of myocardial infarction was greater in women with rheumatoid arthritis than in women without (Table). Women who had had rheumatoid arthritis for ≥ 10 years were 3 times more likely to have a myocardial infarction than women without rheumatoid arthritis (relative risk 3.1, 95% CI 1.6 to 5.9). A duration of

rheumatoid arthritis < 10 years was not associated with myocardial infarction (relative risk 1.2, CI 0.5 to 2.6). Women with rheumatoid arthritis did not differ from women without rheumatoid arthritis for incidence of stroke (Table).

CONCLUSION

In women, onset and subsequent long-term presence of rheumatoid arthritis was associated with an increased risk for myocardial infarction but not stroke.

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Association between incident rheumatoid arthritis and cardiovascular endpoints at 18 years*

Outcomes	Incidence per 100 000 person-years		Relative risk (95% CI)†	P value
	Rheumatoid arthritis	No rheumatoid arthritis		
Myocardial infarction	272	96	2.0 (1.2 to 3.3)	0.005‡
Stroke	112	55	1.5 (0.7 to 3.1)	0.31

*CI defined in Glossary.

†Relative risk adjusted for several confounding factors, including age, hypertension, diabetes, high cholesterol level, body mass index, cigarette use, physical activity, and alcohol use.

‡Association is statistically significant.

COMMENTARY

This interesting epidemiologic study by Solomon and colleagues contributes to the body of evidence showing that patients with rheumatoid arthritis have an increased risk for cardiovascular morbidity (1, 2) and mortality (3, 4).

An important strength of this study is that it was population-based with uniform and continuous collection of information on cardiovascular comorbid conditions during 18 years of follow-up. Furthermore, potential cardiovascular risk factors were controlled for using multivariate analyses. However, the prevalence of rheumatoid arthritis was somewhat low (0.5%), which could suggest that only severely affected patients were included, thus weakening the conclusions. Severely affected patients have been reported to have greater mortality and morbidity (5). Considering that the numbers of patients with both rheumatoid arthritis and myocardial infarction or stroke were only 17 and 7, respectively, conclusions should be drawn with caution.

Another limitation is that the separate contributions of inflammation and of disease-modifying drugs, which could have had an effect on cardiovascular disease in patients with rheumatoid arthritis, were not evaluated.

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