

Prognosis

Patients with rheumatoid arthritis and those with diabetes mellitus had a similar increased risk for myocardial infarction

Lindbardsen J, Ableboff O, Gislason GH, et al. *The risk of myocardial infarction in rheumatoid arthritis and diabetes mellitus: a Danish nationwide cohort study.* *Ann Rheum Dis.* 2011;70:929-34.

Clinical impact ratings: **GM** ★★★★★★☆☆ **C** ★★★★★★☆☆ **En** ★★★★★★☆☆ **R** ★★★★★★☆☆

Question

Is the risk for myocardial infarction (MI) similar between patients with new-onset rheumatoid arthritis (RA) and those with new-onset diabetes mellitus (DM)?

Methods

Design: 2 inception cohorts (patients with RA and patients with DM) followed for a mean of 4.6 and 3.9 years, respectively. Data were obtained through linkage of national registers.

Setting: Denmark.

Patients: 10 477 persons who developed RA (based on International Classification of Diseases [ICD] codes and dispensed prescriptions of disease-modifying antirheumatic drugs within 1 y before or after diagnosis) and 130 215 persons who developed DM (based on initiation of treatment with oral glucose-lowering drugs or insulin analogues) over a 10-year period were identified from a cohort of all inhabitants of Denmark ($n = 4\,311\,022$) \geq 16 years of age at baseline (Jan 1997). 556 persons developed both RA and DM. Exclusion criteria were cardiovascular disease (CVD) (including MI, stroke, or coronary vascular procedures), previous diagnosis of RA, or DM treatment at baseline.

Prognostic factors: Age, sex, comorbidity (modified Charlson's comorbidity index), cardioprotective medications, and socioeconomic status.

Outcomes: MI (ICD codes).

Main results

Patients with RA and those with DM had a similar increased risk for MI (P for difference 0.64, Table). In analyses stratified by sex and age, women < 50 years of age had the highest risk for MI (Table).

Conclusion

Patients with new-onset rheumatoid arthritis and those with new-onset diabetes mellitus had a similar increased risk for myocardial infarction.

Source of funding: Danish Rheumatism Association.

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Commentary

CVD is considered to be the leading cause of mortality in patients with RA; it is responsible for approximately half of the deaths observed in RA cohorts (1). Accumulating evidence from controlled studies shows that extracoronary (2) and coronary atherosclerosis is accelerated in RA (3), but the underlying causes are unclear. Inflammation can promote insulin resistance; therefore, the prevalence of the metabolic syndrome may be increased in patients with RA, and individuals with the metabolic syndrome have up to 93% increased risk for CVD (4). Several cross-sectional and prospective studies of patients with RA and DM suggest similar risks for CVD in those with RA or DM (5).

The study by Lindbardsen and colleagues is the first to prospectively evaluate the risk for MI in patients with RA or DM in a single Danish cohort followed over a 10-year period. The risk for MI in patients with RA or DM was increased by 70% compared with the general population, even in patients < 50 years of age. The current data suggest that a reasonable approach to MI risk assessment in RA may be to add 10 years to the age of the patient and then use the CVD risk score derived from the general population (6).

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Risk for myocardial infarction in patients with rheumatoid arthritis (RA) and in patients with diabetes mellitus (DM)*

Patients	General population	RA (mean follow-up 4.6 y)		DM (mean follow-up 3.9 y)	
		Incidence rate/1000 person-y	Incidence rate ratio (95% CI)	Incidence rate/1000 person-y	Incidence rate ratio (CI)
All†	Reference	—	1.7 (1.5 to 1.9)	—	1.7 (1.6 to 1.8)
Women‡					
< 50 y	0.2	1.4	5.5 (3.3 to 9.2)	1.4	5.9 (4.8 to 7.3)
50 to 65 y	1.6	2.8	1.7 (1.2 to 2.3)	4.9	2.6 (2.3 to 2.9)
> 65 y	6.7	9.5	1.4 (1.1 to 1.7)	12.5	1.6 (1.5 to 1.7)
Men‡					
< 50 y	0.7	1.5	2.1 (1.0 to 4.2)	4.2	4.9 (4.4 to 5.5)
50 to 65 y	4.5	9.4	2.0 (1.5 to 2.6)	8.0	1.5 (1.4 to 1.7)
> 65 y	10.9	17.1	1.5 (1.2 to 1.9)	17.5	1.4 (1.3 to 1.5)

*CI defined in Glossary.

†Analyses adjusted for age, sex, calendar year, cardioprotective medication, comorbid conditions, and socioeconomic status. $P = 0.64$ for difference between patients with RA and DM.

‡Fully adjusted Poisson regression analysis stratified by sex and age tertiles.