

## Myocardial Infarction and Carotid Artery Atherosclerosis in Patients with Rheumatoid Arthritis

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**Introduction.** Today coronary disease developing on the basis of accelerated atherosclerosis represents the main cause of cardiovascular disease (CVD) death of rheumatoid arthritis (RA) patients. The presence of carotid plaques and cIMT assessment are considered to be good predictors for future myocardial events.

**Aim, Material and Methods.** The aim of the study was to detect myocardial infarction (MI) and estimate intima-media thickness (IMT) and plaque formation risk factors in rheumatoid arthritis patients with relation to age, disease duration and disease severity, cardiovascular risk factors. A case-controlled study was performed within the prospective cohort of eighty six patients (female 87.2%) with confirmed RA (aged 20–82). The cases were 26 patients who developed their first MI after diagnosis of RA. The control and case patients had similar disease duration. Traditional and disease-specific risk factors for MI were collected.

**Results.** Cases of MI were detected mostly in females (96%), median age 61 (54.00–68.75), mean disease duration 3.50 years (1.00–9.25), smokers in 34.2% cases. MI Risk for women with RA was 3.9 (OR 3.91), but for females who smoked – 1.36 (OR 1.36). Patients with MI were not statistically significantly older than patients without MI  $p = 0.316$ . No statistically significant difference of IMT *dx et sin* between MI and control group patients was found, (IMT *sin*  $p = 0.217$ , IMT *dx*  $p = 0.602$ ). Atherosclerotic lesions were not more pronounced to patients with MI than without ( $p = 0.874$ ). 91.7% patients with MI had atherosclerotic plaques in brachiocephalic vessels with less than 50% of lumen protrusion, just 8.3% of patients had atherosclerotic changes of plaques reducing lumen of more than 50%. Seropositivity (RF and Anti CCP), erosions in small joints in x-ray, previous joint replacement surgery, disease activity and severity (HAQ, SDAI, CDAI, DAS 28, DAS 28 above 4.17), as well as the age of the beginning of complaints in RA, RA disease duration, BMI, weight and height of patients, smoking history and duration of smoking, diabetes mellitus (DM), AIP, primary arterial hypertension (PAH) did not differ statistically significantly between patients with and without MI ( $p > 0.05$ ).

**Conclusions.** MI did not show statistically significant association with IMT *dx et sin* and atherosclerotic plaques as well as other CV risk factors (age, AIP, PAH, DM, BMI, smoking habits). MI and IMT did not correlate with RA activity markers (DAS 28, HAQ, CDAI, SDAI) as well as seropositivity. IMT in RA patients was age dependent, IMT *dx* had correlation with the age of the beginning of complaints of RA  $p < 0.05$  and atherosclerotic plaques of brachiocephalic vessels  $p = 0.045$ . Our study demonstrated that other factors such as gender may have played an important role in risk prediction. The predicted risk of developing MI in female RA patients was 3.9 times higher than males (OR 3.91), but in case of smoking it was 1.36 times or 36% higher for females (OR 1.36).