

Effects of Cigarette Smoking On EARLY Arthritis (CONAART).

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Background/Purpose: According to recent reports the cigarette smoking persons have 2–4 times greater risk of developing rheumatoid arthritis (RA). The cigarette smoking is associated with an early onset, a greater seropositivity, erosions and severity in patients with early arthritis. The purposes of our study was to analyze the effects of cigarette smoking on the disease activity, serology, presence of extra-articular manifestations (ExM) and radiographic damage in patients with early arthritis.

Methods: This cross-sectional study involving 1.305 patients (729 diagnosed with rheumatoid arthritis (American College of Rheumatology 87 criteria) and 576 undifferentiated arthritis) belonging to CONAART (Argentine Consortium for Early Arthritis) that includes patients older than 16 yrs with arthritis in at least 1 joint and less than two years of disease. The patients have been divided in never smokers, former smokers and current smokers and these last two were classified according the amount of pack years smoked. The following variables were assessed: ExM, joint count, Health Assessment Questionnaire (HAQ), Disease Activity Score of 28 joint (DAS28), Rheumatoid Arthritis Disease Activity Index (RADAI), The Rheumatoid Arthritis Quality of Life (RAQoL), erythrocyte sedimentation rate (ESR), C reactive protein (CRP), Rheumatoid Factor (RF) and Simple Erosion Narrowing Score (SENS) of radiographs. Categorical variables were compared with chi square and continuous with ANOVA or Kruskal Wallis. Conditional logistic regression was used to estimate the odds ratios (ORs) and 95% confidence intervals.

Results: Mean age was 48 ± 14 years and 82% were female. Were current smokers 23.1%, former smokers 9.5% and never smokers 67.4%. Univariate analysis is showed on table one. Variables independently associated with cigarette smoking were RADAI (OR_1.18, 95% CI 1.04–1.33; *p*_ 0.007) and SENS (OR_1.04, 95% CI 1.02–1.71; *p*_ 0.003). No relationship was found between disease activity and severity and number of pack years.

Table 1. The features of arthritis according to smoking status.

	Current smokers n=302	Former smokers n=224	Never smokers n=879	P
Enlarged joints, M (F ₀)	10 (5-17)	7.5 (3-15.7)	8 (3-17)	0.02
Swollen joints, M (F ₀)	7 (3-13)	4.5 (3-10)	5 (2-10)	0.009
ESR, n (%)	7 (2.3)	2 (1.6)	16 (1.8)	0.83
DAS28, n ± DS	5.21 ± 1.45	5.05 ± 1.35	4.87 ± 1.40	0.02 [*]
HAQ, M (F ₀)	1.2 (0.5-1.8)	1.2 (0.5-1.7)	1.0 (0.5-1.6)	0.01
RADAI, n ± DS	5.04 ± 2.11	4.92 ± 2.22	4.39 ± 2.14	<0.001 [*] 0.02 [#]
RACVUL, M (F ₀)	15 (9-22)	15 (9-20)	13 (6-20)	0.008
RF titre, M (F ₀)	128 (32-282)	82.8 (19.2-226.5)	78.5 (17-30)	0.010
RF positive, n (%)	178 (67.7)	77 (67.5)	468 (58.8)	0.014
ESR, M (F ₀)	25 (13-42)	25 (12.2-40)	25 (13-44.7)	0.59
CRP, M (F ₀)	2.55 (0.38-12)	1.88 (0.21-6.95)	2.47 (0.3-8.89)	0.54
SENS, M (F ₀)	11 (4-20)	13 (4.5-19)	9.5 (3-16)	0.02

*Current smokers compared with current smokers # Former smokers compared with never smokers

Conclusion: In this study, smokers exhibited higher frequency of seropositivity for RF, higher levels of disease activity, worse functional capacity and more severe radiographic damage. There was no increased frequency of ExM. In multivariable analysis the smoking was independently associated with RADAI and SENS. There was no relationship between the variables of disease activity and the magnitude of smoking. Our study reinforces the importance to quit smoking in patients with early arthritis.