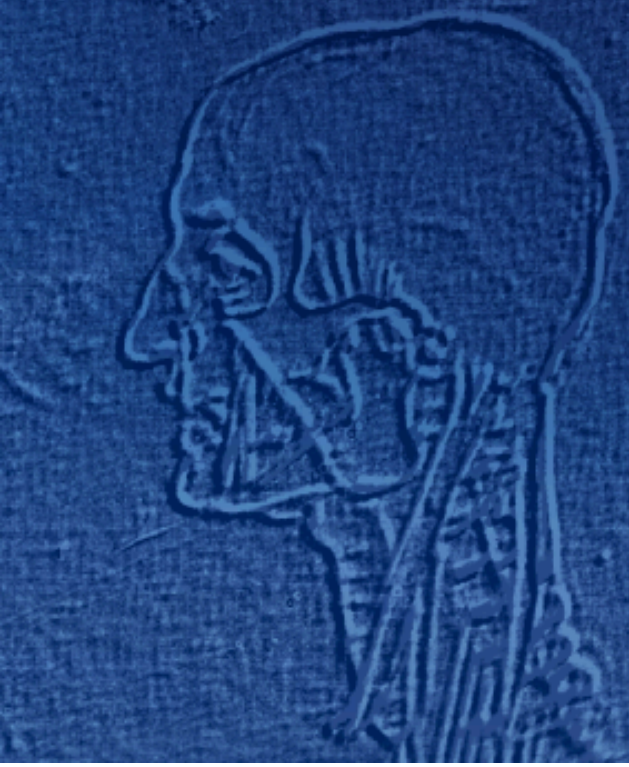
2018 • Vol. 70 • *(Numero Speciale 2)*

Reumatismo

Giornale ufficiale della Società Italiana di Reumatologia - SIR • Fondato nel 1949



55° Congresso Nazionale SIR

RELAZIONI
COMUNICAZIONI e POSTER

SIR
Società Italiana di Reumatologia

EXPLORING THE RELATION BETWEEN AIR POLLUTION AND DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS

P61

T. Schioppo[1], V. Bollati[2,3], C. Favero[2,3], N. Ughi[1], I. Scotti[1], V. Merlino[1], O. De Lucia[1], M. Murgo[1], F. Ingegnoli[1,2]
[1]Divisione di Reumatologia Clinica, ASST Pini-CTO, Milano; [2]Dipartimento di Scienze Cliniche e di Comunità, Università degli Studi di Milano, Milano; [3]EPIGET Lab, Università degli Studi di Milano

Purpose. Disease remission is considered an achievable target in a significant proportion of patients with rheumatoid arthritis (RA). Nevertheless, diseases flares, that significantly contributes to damage progression and disability, remain unpredictable. Thus, factors able to potentially interfere on disease activity should be considered and assessed. The aim of our study is to evaluate the influence of particulate matter (PM) on disease activity and general health (GH) in patients with RA.

Materials and Methods. All consecutive patients with RA (ACR/EULAR Criteria 2010) resident in Lombardy (Italy) were enrolled in this cross-sectional design study. In each patient Disease Activity Score on 28 joints (DAS28), Simple Disease Activity Index (SDAI) and General Health (GH) were assessed. Data on daily pollutants concentration levels (PM2.5 e PM10) were derived from the Local Environmental Protection Agency (ARPA Lombardia) website. Continuous variables are expressed as mean±SD. Categorical variables are presented as absolute numbers and frequencies. Multivariable linear regression models were used to test the associations between the daily PM10 and PM2.5 exposure and disease activity (DAS28, GH and SDAI). The variables, which were significant with simple regression analysis (p-value <0.05), were considered for adjustment in the multivariate model. β coefficients were reported for 10 µg/m3 increments of PM concentrations. All statistical analyses were performed using SAS 9.4 (SAS Institute, Cary, NC, USA).

Results. 235 patients were enrolled in the study (patients' characteristics: age at visit 57.5±13.9 years, disease duration 16.1±11.9, female 77.87%, seropositivity for rheumatoid factor or anti-citrullinated protein antibody 60.85%, radiographic damage 41.28%). Multivariable linear regression models were adjusted for radiographic damage (DAS28, SDAI and GH), disease duration (DAS28 and SDAI) and age (GH). Increases of PM2.5 and PM10 exposure (9 day before the visit) were significantly associated with worsening of DAS28, SDAI and GH (Tab. I).

Conclusion. In our cohort of RA patients, there was significant evidence of negative effects on RA activity related to PM2.5 and PM10 exposure. Nevertheless, the association between day-to-day PM changes and disease activity do not confirm causation. Further studied are required to evaluate the influence of air pollution on RA activity.

Keywords: Artrite reumatoide, Inquinamento atmosferico, Attività di malattia.

Table I

	MULTIVARIABLE LINEAR REGRESSION MODEL					
	PM EXPOSURE	β	SE	95% CI		p-value
DAS28	PM_{10} Day -9	0,1169	0,0524	0,0137	0,2201	0,0266
	$PM_{2.5}$ Day -9	0,1402	0,0665	0,0092	0,2713	0,0361
SDAI	PM_{10} Day -9	0,9703	0,4418	0,0995	1,8412	0,0292
	$PM_{2.5}$ Day -9	1,1988	0,5607	0,0935	2,3040	0,0337
GH	PM_{10} Day -9	2,0574	0,9346	0,2152	3,8997	0,0288
	$PM_{2.5}$ Day -9	2,3624	1,1848	0,0270	4,6979	0,0474