The neutrophil-lymphocyte ratio and the incidence of cardiovascular events in patients with psoriasis and psoriatic arthritis. A retrospective cohort study

Martini M, Torres V, de la Torre P, Vargas A, Alvarado N, Acosta Felquer ML, Cura J, Mazzuoccolo L, Rosa J, Soriano ER.

Rheumatology Unit, Internal Medicine Service, Hospital Italiano de Buenos Aires, and Dermatology Service, Hospital Italiano de Buenos Aires.

INTRODUCTION and OBJECTIVES

The neutrophil to lymphocyte ratio (NLR) has been proposed as predictor of cardiovascular events.

Objectives:

- To assess if NLR at the time of diagnosis, predicts incident major adverse cardiovascular events (MACE) and all causes mortality in patients with PsO and(or PsA.
- To evaluate the effect of treatment on NLR.

PATIENTS AND METHODS

- Observational
- Retrospective
- Cohort
- Unicentric
- 2000-2022

- PsA (CASPAR 2006)
- PsO (dermatologist)
- At least one year of follow-up

Incident rates (IRs) were calculated for MACE and all cause deaths.

Cox proportional hazards model adjusting for cardiovascular risk factors and systemic treatment to evaluate association of NLR (low: < 2.5; and high: > 2,5) and incident MACE or all cause death.

Changes in percentages of patients with low and high cardiovascular risk (based on NLR) after biologic treatment were calculated.

RESULTS

Figure 1. Flowchart

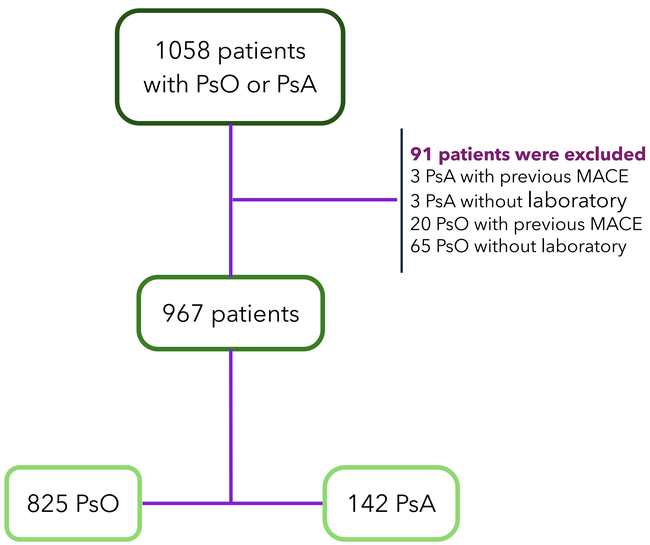


Table 1. Basal characteristics of patients with PsO and PsA

Basal characteristics	Psoriasis (n: 825)	Psoriasic arthritis (n: 142)	p value
Female; n (%)	436 (56)	51 (36)	<0.001
Age at inclusion; years. Mean (SD)	45,8 (21.1)	51,9 (16)	0.0009
Follow-up time since inclusion; years. Mean (SD)	14.4 (5.5)	14.7 (5)	0.440
Arterial hypertension; n/N (%)	336/823 (40.8)	60/141 (42.5)	0.700
Dyslipemia; n/N (%)	240/822 (29.9)	52/141 (36.9)	0.067
Body mass index; mean (SD)	27,87 (5.1)	28,93 (4.97)	0.0262
Current or previous smoking; n (%)	432 (52.36)	78 (54.93)	0.572
Diabetes; n (%)	60 (7.3)	7 (5)	0.305
Systemic treatment after inclusion; n (%)	163 (19.76)	105 (73.94)	<0.001
Methotrexate; n (%)	146 (17.70)	109 (76.76)	<0.001
Biologics; n (%)	53 (6.42)	44 (30.99)	<0.001
NLR, mean	2.3 (2.4)	2.6 (1.6)	0.155
NLR ≥ 2.5, n (%)	**213 (25.8)**	**55 (38.7)**	**0.001**

n= positive number /N=total evaluated

Table 2. Cox proportional hazards model on incidence of MACE associated with NLR adjusting by CV RF and ST

Variable	HZ	SE	CI 95%	p value
NLR ≥2.5	**1.8277**	**0.48**	**1.0954 - 3.0497**	**0.021**
Male sex	1.9008	0.54	1.0851 - 3.3295	0.025
Age	1.0314	0.01	1.0135 - 1.0496	0.001
Hypertension	0.9393	0.29	0.5106 - 1.7279	0.840
Dyslipemia	2.2179	0.61	1.2977 - 3.7905	0.004
Smoking	2.2931	0.70	1.2648 - 4.1571	0.006
Body mass index	0.9950	0.03	0.9390 - 1.0543	0.866
Diabetes	0.8629	0.35	0.3938 - 1.8907	0.713
Systemic treatment	**0.3589**	**0.15**	**0.1618 - 0.7960**	**0.012**

Figure 2. IR of MACES post treatment

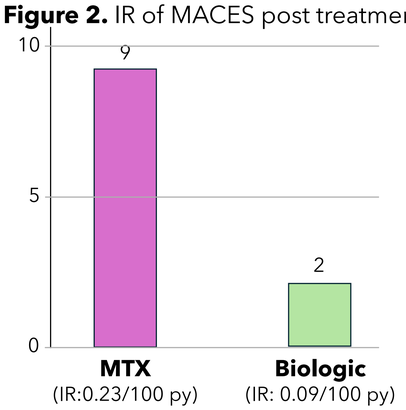
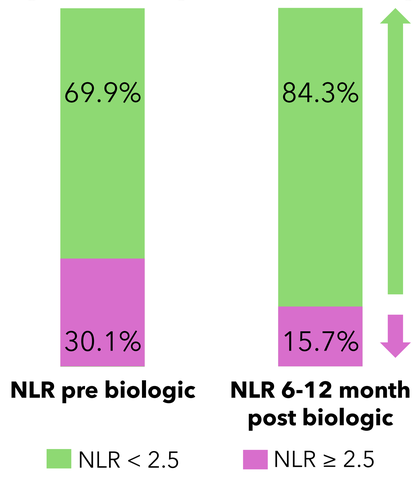


Figure 3. Change in NLR post biologic



67 MACE IR: 0.43/100 py

IR of MACE with NLR <2,5 0.35/100 py vs 0.63/100 py with NLR ≥2,5
IRR of MACE: 1.8 (CI 95% 1.1-2.8) p=0.0106

97 All cause death IR: 0.68/100 py

IRR of all cause death with NLR ≥ 2.5: 1.7; 95% CI: 1.06-2.8
This association was lost in Cox proportional hazards model

CONCLUSIONS

NLR is an easy and universally available index, that was associated with an increased risk of mayor adverse cardiovascular events, but not with all-cause mortality in patients with PsO and PsA.

There was a low incidence of MACE after initiation of biologics. After 6-12 months of biologic therapy, around half patients reduced their NLR risk category.

GRAPPA'S ANNUAL TRAINEE SYMPOSIUM
JULY 11-13, 2024
Seattle, Washington, USA

Abstract scan here