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What is the role of biologics in preventing arthritis in patients with psoriasis? A retrospective study

Keywords: biological DMARD, Disease-modifying Drugs (DMARDs)

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Background:

The effectiveness of biologic treatments in slowing the progression of psoriatic arthritis (PsA) is well recognized. Nevertheless, and despite recent evidence suggesting the potential benefit of these treatments in the prevention of PsA in patients with psoriasis (PsO), this potential is less well established, and contradictory data remain, namely when comparing different biologic Disease Modifying Anti-Rheumatic Drugs (bDMARD) classes.

Objectives:

Our study aimed to compare the incidence of PsA in PsO patients treated with bDMARD and in patients under other systemic or topic treatments.

Methods:

Retrospective study of patients with PsO followed in the Dermatology department of our Centre from 2012-2023. Patients were divided into two groups: PsO Vs PsA patients (according to CASPAR criteria). The risk of PsA development was compared between patients treated with bDMARDs and patients under other treatments (conventional Disease Modifying Anti-Rheumatic Drug (csDMARD) and topic treatment) and between different bDMARD classes. For those progressing to PsA, a survival analysis was performed, comparing the two previously mentioned treatment groups. Cases with missing information were excluded. A univariate followed by multivariate analysis was conducted to identify predictors of psoriatic arthritis in patients with psoriasis.

Results:

A total of 95 patients were included (52 with PsO and 43 with PsA). Mean age was 52.21 ± 11.12 years, 56.8% were female, with no differences encountered between groups (table 1). 77.9% of the patients were under topical treatments, 16.8% received csDMARDs, 35.8% received bDMARD, and 45.3% received systemic treatment (either bDMARD or csDMARD).

PsA patients were less frequently under bDMARD before arthritis onset compared to patients with PsO alone ($p<0.001$), had higher HAQ and PASI scores ($p<0.001$ and $p=0.02$, respectively), and higher prevalence of Spondylarthritis (SpA) family history ($p<0.001$). On survival analysis, the global mean time to arthritis progression was 32 years, with significant differences in patients with or without bDMARD, indicating that the

average time of PsA incidence was approximately 24.1±3.3 years in patients without bDMARD, whereas, in patients with bDMARD, this average time is 44.5±3.4 years (p<0.001) (Figure 1).

On multivariate analysis, SpA family history was independently associated with a higher risk of PsA development [OR 2.80 CI(1.26; 6.23), p=0.01], while bDMARD treatment was a protective factor, with those not under these treatments experiencing a higher risk of progression [OR 10.31 CI (3.89; 27.33), p<0.001].

Conclusion:

Our study indicates that bDMARDs exhibit a decelerating effect on PsA development in patients with PsO. Prospective observational cohorts with disease activity measures and randomized trials are required to confirm these findings.

Table 1: Sociodemographic and clinical data

Sociodemographic and clinical data		Total	Psoriatic arthritis				p-value
		N= 95	No		Yes		
			N = 52 (54.7%)		N = 43 (45.3%)		
Sex (N, %)	Female	54 56.8	33 61.1		21	38.9	p= 0.221
	Male	41 43.2	19 46.3		22	53.7	
Age (mean, SD)		52.21 ± 11.12	52.62 ± 12.06		51.72	± 9.98	p= 0.699
Systemic treatment (N, %)	yes	43 45.3	31 72.1		12	27.9	**p<0.01**
	No	52 54.7	21 40.4		31	59.6	
bDMARD (N, %)	yes	34 35.8	27 79.4		7	20.6	**p<0.001**
	No	61 64.2	25 41.0		36	59.0	
csDMARD (N, %)	yes	16 16.8	9 56.3		7	43.7	p = 1
	No	79 83.2	43 54.4		36	45.6	
Topic treatment (N, %)	yes	74 77.9	38 51.4		36	48.6	p= 0.319
	No	21 22.1	14 66.7		7	33.3	
Dactilitis (N,%)	Yes	15 75	NA		15	75.0	NA
	No	28 37.3	NA		28	37.3	
Uveiitis (N,%)	yes	1 2.3	NA		1	2.3	NA
	No	42 97.7	NA		42	97.7	
Entesitis (N,%)	Yes	14 14.7	5 35.7		9	64.3	p= 0.208
	No	81 85.3	47 58.0		34	42.0	
APsQoL (Median, IQR)		10 [14]	NA NA		10	[14]	NA
HAQ (Median, IQR)		0.63 [0.88]	0.25 [0.65]		0.88	[1.25]	**p<0.001**
EQ-5D (Median, IQR)		0.32 [0.47]	0.22 [0.45]		0.33	[0.52]	p=0.12
PASI (Median, IQR)		6.2 [9.4]	2 [7.9]		7.8	[11.7]	**p=0.02**
DLQI (Median, IQR)		6 [9]	5.5 [9]		6	[7]	p=0.12
Diabetes Mellitus (N, %)	yes	10 10.5	9 90.0		1	10.0	**p= 0.020**
	No	85 89.5	43 50.6		42	49.4	
Depression (N, %)	yes	16 16.8	7 43.8		9	56.2	p= 0.4884
	No	79 83.2	45 57.0		34	43.0	
High blood pressure (N, %)	yes	29 30.5	18 62.1		11	37.9	p= 0.467
	No	66 69.5	34 51.5		32	48.5	
Dyslipidemia (N, %)	Yes	27 28.4	15 55.6		12	44.4	p = 1
	No	68 71.6	37 54.4		31	45.6	
Current smoking (N, %)	Yes	12 12.8	9 75.0		3	25.0	p= 0.217
	No	82 87.2	42 51.2		40	48.8	
	Missing	1 1.0	1 100		0	0	
Psoriasis family history (N, %)	yes	53 56.4	31 58.5		22	41.5	p= 0.621
	No	41 43.6	21 51.2		20	48.8	
	Missing	1 1.0	0 0		1	100	
SpA family history	yes	11 11.8	0 0		11	100	**p<0.001**
	No	82 88.2	51 62.2		31	37.8	
	Missing	2 2.1	1 50		1	50	

APsQoL: Psoriatic arthritis quality of life questionnaire; bDMARD: biologic Disease Modifying Anti-Rheumatic Drugs; csDMARD: conventional Disease Modifying Anti-Rheumatic Drugs; DLQI: Dermatology Life Quality

Index; IQR: interquartile range; HAQ: Health Assessment Questionnaire; N: number of patients; PASI: Psoriasis Area and Severity Index; SD: standard deviation; SpA: Spondylarthritis.

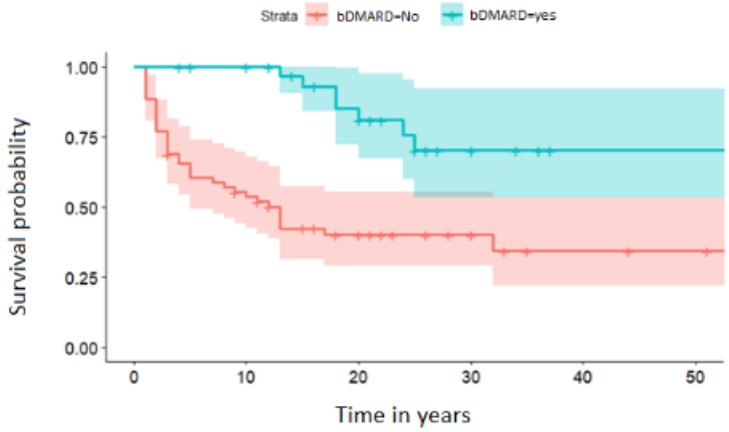

Figure 1- Survival curves for PsA development for different treatment groups (bDMARD yes/no); bDMARD: Biologic Disease Modifying Anti-Rheumatic Drug

Disclosure of interest: None declared

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