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Regional Difference in Disease Burden Among Patients with Psoriatic Arthritis: A Multi-Center Study

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SESSION INFORMATION

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Background/Purpose: Psoriatic arthritis (PsA) has been defined as an inflammatory arthritis associated with psoriasis. The disease activity can be evaluated using many scales in patients with PsA. There is a great temperature difference between geographic region in Turkey. For example, the average annual air temperature in Erzurum (one of the Eastern Anatolian cities) is 5.7° C whereas in Antalya (one of the Mediterranean region cities) average temperature is 18.7° C. Furthermore, altitude of Eastern Anatolian cities is higher than Mediterranean cities.

The aim of this study was to assess whether there are regional differences in disease burden in patients with PsA.

Methods: Patients with PsA over the age of 18 who met the CASPAR classification criteria were enrolled consequently in this multicenter cross-sectional observational study. Turkish League Against Rheumatism (TLAR)- Network was formed with the participation of 25 different centers. Patients were grouped for 7 geographic regions (Marmara, Aegean, Mediterranean, Central Anatolia, Black Sea, Eastern Anatolia and southeastern Anatolia) in Turkey. Clinical and laboratory data were recorded. PsQoL; HAQ; BASFI, VAS-fatigue, VAS-pain, patient and physician GA; DAPSA, DAS28, BASDAI, and PASI scores were assessed. Statistical analysis was performed using the SPSS v22 package program. One-way ANOVA test were used to compare 7 geographic regions. Regression analysis was used to calculate adjusted disease measures. $p < 0.05$ was considered statistically significant.

Results: A total 1130 patients (36% male, 64% female) with PsA included in this study. The mean age was 46.96 ± 12.25 years. The mean symptom duration was 9.40 ± 8.88 years. Crude results related to disease activity, quality of life and disability were summarized in table 1. Statistically significant differences observed for age, sex and BMI between groups. Thus, adjusted values of disease activity, quality of life and disability were calculated (table 2). Eastern Anatolian patients were youngest whereas Mediterranean patient were oldest (40.03 ± 13.19 vs 50.42 ± 11.47 , $p < 0.0001$). Diagnostic delay time similar between groups ($p:0.096$). Crude VAS-pain, fatigue, PtGA, PhGA were significantly different between groups whereas this difference disappeared when adjustment for age, sex and BMI were made in table 2. Disease activity score were highest in Mediterranean region and lowest in eastern Anatolia region according to adjusted DAPSA (17.72 ± 1.75 vs 16.35 ± 1.62 , $p < 0.0001$), DAS28 (3.53 ± 0.29 vs 3.25 ± 0.28 , $p < 0.0001$) and BASDAI (4.12 ± 0.48 vs 3.80 ± 0.49 , $p:0.080$). Adjusted BASFI (2.83 ± 0.52 vs 2.28 ± 0.51 , $p < 0.0001$), PsAQoL (7.54 ± 1.48 vs 6.07 ± 1.44 , $p < 0.0001$) and HAQ (0.48 ± 0.11 vs 0.36 ± 0.13 , $p < 0.0001$) score were highest in Mediterranean region and lowest in Eastern Anatolia region. Additionally, PASI score lowest in Mediterranean region and highest in Eastern Anatolia region.

Conclusion: This is the first study reporting that geographic region differences may affect disease activity as well as patient characteristic in patients with PsA. Regional weather conditions such as temperature, humidity and altitude may explain the regional differences in disease activities and other clinical characteristics.

	Marmara (n:407)	Central Anatolia (n:370)	Aegean (n:138)	Mediterranean (n:60)	Black Sea (n:59)	Eastern Anatolia (n:60)	Southeastern Anatolia (n:36)	p	Whole PsA (n:1130)
Age, year	46.12±12.05	47.94±12.04	49.01±12.99	50.42±11.47	47.58±10.35	40.03±13.19	43.33±11.18	<0.0001	46.96±12.25
Male (%)	146(35.9)	135(36.5)	51(37)	12(20)	26(44.1)	24(40.0)	13(36.1)	0.042	407(36)
BMI, kg/m2	29.16±4.90	28.69±5.09	28.91±5.80	29.79±5.45	28.71±3.99	26.33±3.57	27.87±4.63	0.002	28.79±5.04
Symptom durations, year	8.85±8.11	9.03±9.04	12.25±11.65	11.18±8.20	10.98±7.95	8.07±6.40	5.25±5.47	<0.0001	9.40±8.88
Diagnostic delay, year	2.97±4.45	2.61±4.54	3.94±5.94	2.24±3.63	3.20±3.88	2.93±4.01	2.33±3.15	0.096	2.92±4.58
VAS-pain (0-10)	4.54±2.72	4.79±2.61	4.42±2.51	4.32±2.23	4.58±2.09	4.73±2.56	7.33±2.11	<0.0001	4.69±2.62
PtGA	4.46±2.76	4.66±2.53	4.14±2.22	4.02±1.83	4.97±2.17	4.65±2.46	5.39±2.11	0.041	4.53±2.53
PhGA	3.66±2.29	4.11±2.22	3.91±2.08	3.48±1.93	3.83±1.85	4.38±2.35	5.17±2.18	<0.0001	3.92±2.22
VAS-fatigue	5.06±2.92	5.25±2.77	4.68±2.73	4.37±2.12	3.54±3.00	5.00±3.02	5.19±3.08	0.001	4.96±2.85
TJC	4.80±8.66	6.32±8.86	3.77±7.16	6.81±7.51	4.29±5.10	8.90±10.33	10.37±11.95	<0.0001	5.67±8.70
SJC	1.54±3.69	1.36±2.96	0.84±1.65	1.85±5.03	0.53±1.46	2.13±2.04	1.86±2.16	0.028	1.40±3.17
DAPSA	15.64±12.50	18.18±13.04	14.43±10.38	18.00±14.06	16.00±7.82	20.43±13.69	24.54±15.39	<0.0001	17.05±12.65
DAS28	3.32±1.21	3.35±1.26	3.42±1.09	3.41±1.27	3.23±0.94	3.82±1.23	4.24±1.32	<0.0001	3.40±1.22
BASDAI	4.32±2.47	3.91±2.41	3.12±1.85	3.44±1.65	3.37±1.30	3.63±2.05	5.03±2.11	<0.0001	3.93±2.31
BASFI	2.81±2.42	2.28±2.29	2.18±2.35	3.30±2.05	2.00±1.19	3.37±2.94	3.02±2.40	<0.0001	2.60±2.38
PASI	2.92±5.02	3.29±5.46	3.23±4.05	1.28±1.63	1.28±1.44	3.59±3.05	4.84±5.62	0.001	3.00±4.79
PsAQoL	7.52±6.33	7.28±6.44	5.61±6.26	6.88±7.01	5.22±4.64	4.22±4.85	6.75±6.12	<0.0001	6.85±6.30
HAQ	0.42±0.47	0.43±0.47	0.35±0.45	0.65±0.58	0.34±0.31	0.45±0.42	0.54±0.38	0.001	0.43±0.47

tablo1

Table 1 Comparison of crude disease activity, quality of life and disability measures between 7 geographic regions of Turkey in patients with PsA -mean ± SD -

	Marmara (n:407)	Central Anatolia (n:370)	Aegean (n:138)	Mediterranean (n:60)	Black Sea (n:59)	Eastern Anatolia (n:60)	Southeastern Anatolia (n:36)	p	Whole PsA (n:1130)
VAS-pain (0-10)	4.71±0.47	4.68±0.48	4.68±0.50	4.85±0.39	4.61±0.50	4.65±0.46	4.69±0.47	0.160	4.69±0.47
PtGA	4.54±0.41	4.51±0.42	4.52±0.45	4.66±0.35	4.46±0.43	4.48±0.40	4.53±0.41	0.140	4.53±0.42
PhGA	3.93±0.25	3.91±0.25	3.92±0.27	4.01±0.21	3.88±0.26	3.88±0.24	3.91±0.25	0.088	3.92±0.25
VAS-fatigue	4.98±0.74	4.94±0.74	4.96±0.77	5.22±0.62	4.84±0.76	4.82±0.70	4.93±0.74	0.068	4.96±0.74
TJC	5.74±1.50	5.64±1.49	5.77±1.62	6.18±1.37	5.51±1.35	5.00±1.17	5.43±1.41	0.001	5.67±1.49
SJC	1.41±0.15	1.39±0.16	1.38±0.18	1.40±0.14	1.39±0.15	1.45±0.17	1.44±0.14	0.015	1.40±0.16
DAPSA	17.14±2.00	16.98±1.96	17.18±2.13	17.72±1.75	16.84±1.90	16.35±1.62	16.67±1.76	0.007	17.05±1.97
DAS28	3.41±0.33	3.40±0.33	3.43±0.33	3.53±0.29	3.36±0.30	3.25±0.28	3.34±0.32	<0.0001	3.40±0.33
BASDAI	3.95±0.56	3.92±0.56	3.92±0.60	4.12±0.48	3.87±0.56	3.80±0.49	3.89±0.54	0.080	3.93±0.56
BASFI	2.59±0.58	2.63±0.57	2.67±0.60	2.83±0.52	2.50±0.45	2.28±0.51	2.44±0.55	<0.0001	2.60±0.57
PASI	3.04±0.55	2.96±0.53	2.92±0.53	2.79±0.52	3.02±0.49	3.25±0.57	3.14±0.51	<0.0001	3.00±0.54
PsAQoL	6.88±1.71	6.86±1.68	6.96±1.76	7.54±1.48	6.68±1.44	6.07±1.44	6.55±1.62	<0.0001	6.85±1.68
HAQ	0.42±0.13	0.43±0.12	0.44±0.12	0.48±0.11	0.42±0.11	0.36±0.13	0.40±0.12	<0.0001	0.43±0.13

tablo2

Table 2 Comparison of adjusted disease activity, quality of life and disability measures between 7 geographic regions of Turkey in patients with PsA [mean ± SD-adjustment for age, sex and BMI-

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