Screening for the Early Identification of Psoriatic Arthritis with Axial Involvement in A Cohort of Italian Patients Affected by Psoriasis (ATTRACT): Preliminary Results of a Cross-Sectional Study

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Background

Psoriatic arthritis (PsA) is a chronic inflammatory musculoskeletal disease characterized by different disease domains: peripheral arthritis, axial disease, dactylitis, enthesitis, skin, nails and intestine. There is growing interest towards early identification of patients with axial PsA (AxPsA), that could allow a better disease characterization and well-timed more targeted therapeutic strategies. In this study, we report preliminary results of a screening strategy focused on the dermatologic setting, aimed at improve diagnosis and classification of axPsA.

Methods

Patients were enrolled in the ATTRACT study (Axial psoriaTic arThritis scReening AnCona iTaly). A comprensive scheme of the whole study is shown in Fig.1.

The Dermatologic-Centered Screening (DCS) tool questionnaire (Fig.2), recently validated for early identification of AxPsA. was translated in Italian and administered to all patients in the dermatological clinic.

Fig. 2 The Dermatologic-Centered Screning Tool (Proft F. et al. *Arthritis Rheumatol.* 2021; 73 suppl 10)

Chronic duration >3 months) back pain and onset before 45 years of age	1. Does your back pain last 3 months or longer?
	2. Did your back pain start prior to 45 years of age?
	Plus at least one of following:
Inflammatory back pain parameters	1. The back pain onset was rather slow and was not related to a trauma
	2. I suffer from stiffness in my back of 30 minutes or longer upon getting up in the morning
	3. Movement or exercises (but not rest) improve my back pain
	4. I wake up sometimes in the night (especially 2nd half) because of back pain
	5. I have or I had alternating (flipping from side to side) pain in my buttocks
Other spondyloarthritis parameters	6. I took a nonsteroidal anti-inflammatory drug (such as Diclofenac or Ibuprofen) because of back pain, and pain was completely relieved or was much better after the drug Intake.
	7. I have / had joint pain with swelling and/or inflammation in the areas of tendons insertion to the bone (e.g., heels).
	8. The genetic marker HLA-B27 has been tested in my blood already and the result was positive".
	9. I have had elevated markers of inflammation in the blood (C-reactive protein or erythrocyte sedimentation rate), which are unlikely to be explained by other reasons (such as infections).
	10. I suffer from psoriasis
	11. I suffer from inflammatory bowel disease
	12. I suffer/suffered from uveltis (Iritis/ Iridocyclitis)
	13. One or several of my direct relatives suffer/suffered from ankylosing spondylitis, psoriasis or Inflammatory Bowel Disease (Crohn's Disease or Ulcerative Colitis)

RESULTS

From February 15th to June 31th, 349 patients were screened, and on the basis of the answers to the DCS-tool, we obtained 3 patients' cohorts: **n.114** patients (**group B**, 45.1%) highly predictive, and thus eligible; **n. 49** (**group C**, 19.4%) "conditionally "eligible"; and n. 90 patients (**group A**, 35.6%) classified as NON-arthritis / IBP (Fig. 1 and Table 1).

Briefly:

- The proportion of female sex is significantly higher in group B;
- The mean age is higher in group C;
- Cardiovascular diseases are significantly more represented in group A and C.

After the rheumatologic evaluation and clinical, laboratory and instrumental evaluation, among the group B, so far:

- ➢ n.19 patients (B3, 16.7%) were classified as Axial-PsA, (n. 14 of them fulfilling ASAS criteria and n. 12 also affected by peripheral disease),
- ➢ n.10 (8.7%) were classified as peripheral-PsA, fulfilling CASPAR criteria (Fig. 1)

In n.17 patients (14.9%) the diagnosis of peripheral and/or axial PsA was definitively excluded.

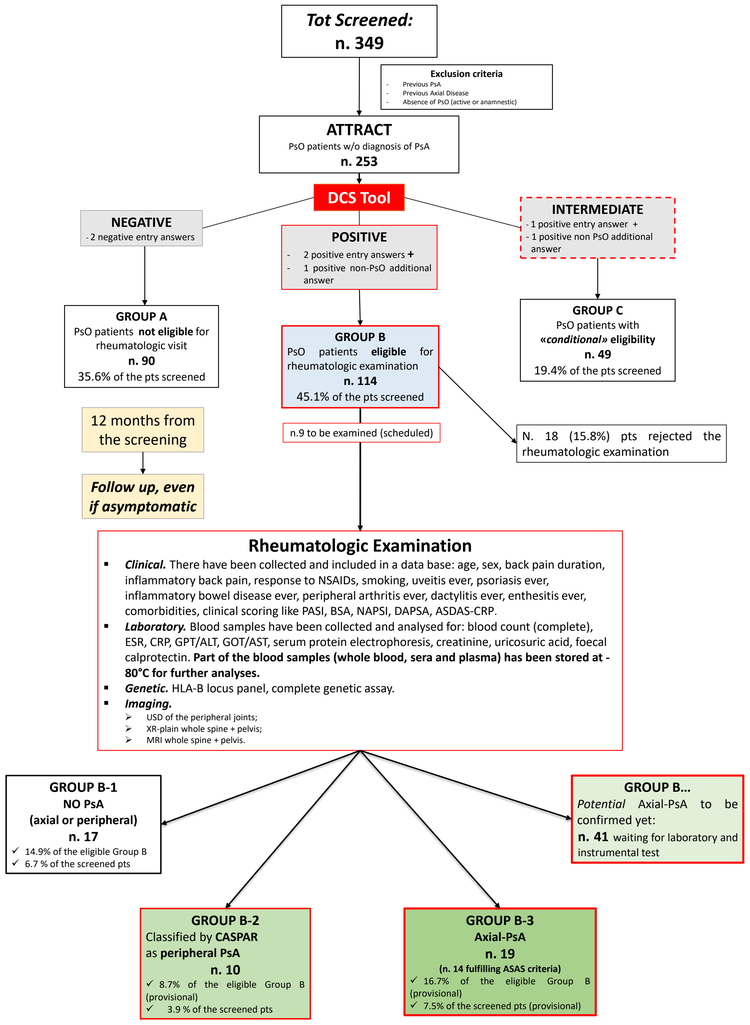

Figure 1. Flow-chart of the ATTRACT (Axial psoriaTic arThritis scReening AnCona iTaly) study. It is shown a schematic representation and the preliminary results of the study. DCS: Dermatologic-Centered Screening tool (see Fig.2). The clinical features of the patients in group A-C are fully shown in Table 1.

Table 1. Clinical features of the patients with psoriasis screened with the Dermatologist-Centered Screening (DCS)-tool. The subdivision of the patients in group has been made after the screening and it is based on the number of affirmative answers to the 2 enter questions of the DCS (Fig. 2). In group B there are shown the patients who gave 2 affirmative answers to both the enter questions, in group C 1 one affirmative answer and in group A no affirmative answers. *Values, numerical. y/n : yes/no. 1. It is available a list of each specific disease. Statistical analysis were performed using the software "Stata" and the Wilcoxon test.

	Group A (n.90)	Group B (n.114)	Group C (n.49)	p
Gender (F/M), n(%)	35(38.9) / 55 (61.1)	67(58.8) / 47(41.2)	19(38.8) / 30(61.2)	**0.007**
Age, yrs	51.39±17.41	48.33±15.74	59.57±18.07	**0.0006**
BMI*,	26.14±5.05	25.71±4.25	27.40±4.87	0.11
Smoke, never, n(%)	33 (36.7)	49 (44.5)	17 (34.7)	0.10
Smoke, previous, n(%)	27 (30.0)	23 (20.9)	17 (37.7)	0.22
Smoke, actual, n(%)	30 (33.3)	38 (34.5)	15 (30.6)	0.37
Psoriasis, present, n(%)	90 (100)	114 (100)	49 (100)	1.00
BSA, %	3.67±5.79	3.25±5.14	1.71±2.12	0.12
PASI*	3.7±5.38	3.23±6.03	1.81±2.74	0.18
Onichopathy, y/n, n(%)	29 (45.3) / 35 (54.7)	67(67.7) / 32(32.3)	25(69.4) / 11(30.6)	**0.009**
NAPSI*	1.63±1.11	1.53±0.96	1.60±1.64	0.93
Comorbidities[1] (n/%):				
Obesity	16 (17.8)	14 (12.3)	14 (28.5)	**0.045**
Cardiovascular diseases	31 (58.5)	31 (40.3)	24 (63.2)	**0.028**
Metabolic diseases	32 (60.4)	48 (62.3)	24 (63.2)	0.305
Chronic Kidney Disease	1 (1.9)	4 (5.2)	1 (2.6)	0.666
Infections	1 (1.9)	2 (2.6)	0 (0.0)	1.000
Immunomediated	4 (7.5)	14 (18.2)	2 (5.3)	0.082
Neurologic/Psychiatric	4 (7.5)	6 (7.8)	3 (7.9)	0.930
Neoplasia	3 (5.7)	6 (7.8)	4 (10.5)	0.366
Other	14 (26.4)	30 (39.0)	10 (26.3)	0.168
DCS-Tool, question number:				
Enter 1, n(%)	0 (0.0)	114(100)	34(69.4)	**< 0.001**
Enter 2, n(%)	0 (0.0)	114(100)	15(30.6)	**< 0.001**
Other 1 n(%)	2 (2.2)	100(87.7)	42(87.5)	**< 0.001**
Other 2 n(%)	3 (3.3)	80(70.2)	17(34.7)	**< 0.001**
Other 3 n(%)	10 (11.2)	95(84.1)	31(63.3)	**< 0.001**
Other 4 n(%)	1 (1.1)	42(37.2)	8(16.3)	**< 0.001**
Other 5 n(%)	4 (4.4)	58(51.8)	15(30.6)	**< 0.001**
Other 6 n(%)	2 (2.2)	51(45.5)	16(32.7)	**< 0.001**
Other 7 n(%)	12 (13.3)	81(71.7)	23(46.9)	**< 0.001**
Other 8 n(%)	0 (0.0)	1(0.9)	0(0.0)	1.000
Other 9 n(%)	7 (7.9)	27(24.3)	6(12.2)	**0.005**
Other 10 n(%)	90 (100.0)	114(100.0)	49(100.0)	1.000
Other 11 n(%)	3 (3.3)	4(3.5)	2(4.1)	1.000
Other 12 n(%)	0 (0.0)	1(0.9)	0(0.0)	1.000
Other 13 n(%)	28 (31.5)	65(57.5)	17(34.7)	**< 0.001**

CONCLUSIONS

In this study, the DCS tool has confirmed a good efficacy in the screening of PsA in a real-life cohort of Pso patients and a probable Inflammatory Back Pain (IBP) was found in about half of the screened Pso patients. These findings made possible to identify a substantial number of naïve patients not only affected by AxPsA but also by peripheral PsA.