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Inflammatory back pain in psoriatic arthritis is significantly more responsive to corticosteroids compared to back pain in ankylosing spondylitis: A prospective, open-labelled, controlled pilot study

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Background: The efficacy of corticosteroids in patients with psoriatic arthritis (PsA) and inflammatory back pain has not been studied to date. In this controlled trial, we aimed to investigate the comparative performance of corticosteroids in patients with active axial-PsA (AxPsA) versus those with active ankylosing spondylitis (AS).

Methods: Patients with AxPsA and AS (naïve to biologic therapies), who not only had clinically active disease, but also had bone marrow oedema on magnetic resonance imaging of the sacroiliac joints, were recruited. Clinically active disease was defined as inflammatory back pain (fulfilling Assessment of Spondyloarthritis International Society (ASAS) expert criteria), with spinal pain score (numerical rating scale 0-10) ≥4 and Bath AS Disease Activity Index (BASDAI) score ≥4 despite taking nonsteroidal anti-inflammatory drugs. Moreover, we recruited a control group of patients with non-inflammatory lower back pain. All patients received a single, intra-muscular dose of depot corticosteroid injection (triamcinolone acetonide 80 mg) at baseline. The intra-muscular corticosteroid option was used to overcome any drug compliance issues. Clinical outcome assessments were made at the following time points: baseline, week 2, and week 4. The primary efficacy end point was mean change in Ankylosing Spondylitis Disease Activity Score (ASDAS) at week 2. Key secondary outcomes were mean change in the BASDAI, Bath Ankylosing Spondylitis Functional Index (BASFI) and Ankylosing Spondylitis Quality of Life (ASQoL) at weeks 2 and 4.

Table 2

Primary and secondary outcome measure responses at week 2 and week 4 of corticosteroid treatment

Parameter	Axial psoriatic arthritis	Ankylosing spondylitis	Control	*P* value, AxPsA vs. AS
Mean difference from baseline to week 2				
ASDAS	1.43 ± 0.39	1.03 ± 0.30	0.81 ± 0.26	0.004
VAS	2.46 ± 0.91	1.66 ± 1.1	1.0 ± 0.94	0.003
ASQoL	3.80 ± 1.82	2.4 ± 1.72	0.7 ± 0.67	<0.001
BASFI	2.38 ± 0.68	0.95 ± 0.91	0.44 ± 0.41	<0.001
BASDAI	1.93 ± 0.56	1.13 ± 0.33	0.84 ± 0.24	<0.001
Mean difference from baseline to week 4				
ASDAS	1.09 ± 0.32	0.77 ± 0.27	0.73 ± 0.24	0.007
VAS	2.00 ± 0.92	1.33 ± 0.72	1.30 ± 0.82	0.054
ASQoL	3.53 ± 1.35	2.26 ± 1.53	0.70 ± 0.67	<0.001
BASFI	1.76 ± 0.82	0.78 ± 0.63	0.48 ± 0.24	<0.001
BASDAI	1.57 ± 0.49	0.85 ± 0.45	0.62 ± 0.23	<0.001

Results: In total, 40 patients were recruited (15 with AxPsA, 15 with AS, and 10 controls). At week 2 following corticosteroid treatment, patients with AxPsA had significantly greater improvement in the mean ASDAS compared to patients with AS (1.43 ± 0.39 vs. 1.03 ± 0.30, p = 0.004), and also when compared to controls (p <0.001). At week-4, similar significant trend of ASDAS improvement was seen among AxPsA patients compared to AS patients (1.09 ± 0.32 vs. 0.77 ± 0.27, p = 0.007) and controls (p < 0.001). Similarly, the mean BASDAI, visual analogue scale spinal pain score, ASQoL and BASFI improved significantly among patients with AxPsA compared to patients with AS and controls at week 2 (p <0.05), with this trend also largely maintained at week 4.

Conclusions: Axial inflammation in patients with PsA responds significantly better to corticosteroids than in patients with AS. This furthers the argument and adds to the growing evidence that AxPsA and AS are distinct entities.

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