SAT0364

EFFECT OF ACHIEVING DAPSA-LDA ON THE PROGRESSION OF BONE EROSION AND ENTHESIOPHYTES IN PATIENTS WITH PSORIATIC ARTHRITIS: A LONGITUDINAL HR-PQCT STUDY

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Background: Psoriatic arthritis (PsA) is characterized by structural bone damage with bone erosions and enthesiophytes. Whether achieving low disease activity (LDA) according to Disease Activity in Psoriatic Arthritis (DAPSA-LDA) limits progression of structural bone damage, as assessed by high resolution-peripheral quantitative computed tomography (HR-pQCT), is uncertain.

Objectives: To investigate the progression of structural bone abnormalities at the metacarpal head in patients with PsA over a 5-year period.

Methods: HR-pQCT examination was performed in 60 PsA patients at baseline and after 5 years. Baseline-indexed image registration and slice matching were performed to acquire precisely matched baseline and follow-up volumes of interest (VOI) at the 2nd and 3rd metacarpal heads (MCH2 & 3). A semi-automated method was used to calculate bone erosion and enthesiophyte volume [1]. Erosion and enthesiophyte progression was defined as change exceeding the smallest detectable change (SDC). The primary objective of this study was to investigate the degree of bone erosion and enthesiophyte progression in PsA patients receiving routine care. Secondary objectives were to compare changes in bone erosion and enthesiophyte volume between patients who 1) received (TNFi group) or did not receive TNF inhibitor (non-TNFi group); 2) achieved or did not achieve sustained DAPSA-LDA (sDAPSA-LDA) at both baseline and 5-year.

Results: A total of 108 bone erosions and 99 enthesiophytes were detected at baseline. Three new bone erosions and no new enthesiophytes

were evident at 5 years. Mean ($\pm$ SD) individual bone erosion ($4.23 \pm 4.15 \text{ mm}^3$) and enthesiophyte ($3.39 \pm 2.30 \text{ mm}^3$) volume at baseline increased significantly ($0.58 \pm 1.50 \text{ mm}^3$, $p < 0.001$ for bone erosion; $0.47 \pm 0.76 \text{ mm}^3$, $p < 0.001$ for enthesiophyte volume) over a 5-year period despite disease modifying anti-rheumatic drug being used in 88.3% of patients (Figure 1). The total bone erosion ($7.83 \pm 7.41 \text{ mm}^3$) and enthesiophyte volume ($5.59 \pm 5.46 \text{ mm}^3$) per patient also increased by $1.07 \pm 2.16 \text{ mm}^3$ ($p < 0.001$) and $0.78 \pm 1.11 \text{ mm}^3$ ($p = 0.001$) respectively. 14 patients received TNFi throughout the 5-year period. Comparable changes in bone erosion and enthesiophyte volume were found between the TNFi and the non-TNFi groups. After 5 years, 26 (43%) patients achieved sDAPSA-LDA. Less erosion progression ($12/51$ [23.5%] vs $25/60$ [41.7%], $P = 0.047$) was observed those who did rather than did not achieve sDAPSA-LDA. Similarly, enthesiophyte volume change (0.28 ± 0.67 vs $0.61 \pm 0.80 \text{ mm}^3$; $P = 0.048$) and total enthesiophyte volume change (0.42 ± 0.69 vs $1.05 \pm 1.29 \text{ mm}^3$; $P = 0.019$) were lower in those who did rather than did not achieve sDAPSA-LDA.

Conclusion: Once DAPSA-LDA is achieved, it should be maintained for a long period so as to minimize progression of structural bone damage in patients with PsA.

REFERENCE

[1] EULAR 2018 (OP0132) & ACR 2018 (865)

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SAT0365

SECULAR CHANGES IN PSORIATIC ARTHRITIS PATIENTS STARTING FIRST COURSE OF BIOLOGIC THERAPIES – INFLAMMATORY HALLMARKS OF LESSER PROMINENCE: A NORDIC POPULATION-BASED COHORT STUDY

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Background: Psoriatic arthritis (PsA) is a chronic inflammatory disorder associated with skin and joint manifestations, several extra-articular symptoms, various comorbidities, and disability[1,2]. The emergence of tumour necrosis factor inhibitor (TNFi) therapy has dramatically changed the course of disease. Additional TNFi therapies (certolizumab pegol and golimumab) have been marketed, and recently ustekinumab has become available for PsA.

Objectives: To assess the use of biological agents (bDMARDs) in PsA from 2006-2017, using data from the Nordic Rheumatology registers.

Methods: Based on data from the registers DANBIO, ICEBIO, NOR-DMARD, ROB-FIN, and SRQ, PsA patients initiating bDMARDs or biosimilars, as a first or subsequent biological therapy were identified. Adalimumab, etanercept and infliximab were grouped as *1st generation therapies*; certolizumab pegol, golimumab were grouped as *2nd generation therapies* and biosimilar treatments were grouped. Treatments with ustekinumab were also identified. Pearson correlation tests were calculated and $p > 0.05$ were considered significant. $R^2 \approx 1$ showed a strong correlation between the baseline characteristics.

Results: A total of 18,089 treatment initiations were identified (DANBIO 4,361, ICEBIO 449, NOR-DMARD 1,948, ROB-FIN 1,069, SRQ 10,262). 53.68% of the patients were female. Overall, 6,198 patients initiated *1st generation therapies*, 1,447 *2nd generation therapies*, 1,353 biosimilars and 52 ustekinumab, as their first course of bDMARDs. Initiations of second or subsequent bDMARDs were 4,560, 1,630, 2,176 and 376 patients, respectively. The total of first course bDMARD initiators increased significantly from 2006-2017 ($p < 0.001$), similar to patients switching therapy ($p < 0.001$). Ustekinumab was primarily used as a second or subsequent bDMARD. The figure shows the secular trends of baseline characteristics collected from the Nordic countries with the subcategories of CRP, disease duration, HAQ score, VAS patient pain, swollen joint count and tender joint count from 2006-2017. All five countries showed trends of decreasing CRP, SJC and TJC values over time. Other parameters only showed slight or no correlation.

Figure 1. Probability plot of each individual bone erosion and enthesiophyte

Figure: biological treatment initiators by baseline characteristics from 2006-2017

* Norway is excluded from the HAQ P-value calculations due to the fact that they collect their HAQ scores in mHAQ.

Conclusion: Across the Nordic countries the prescription pattern for biological therapies for PsA has changed significantly over time. The decreasing levels of both CRP scores and SJC suggest that PsA patients who initiate bDMARD treatment have changed towards a less active inflammatory phenotype from 2006-2017. Collaboration across registers will allow for robust assessment of the uptake of newer biological therapies. Overall the number of prescribed therapies increased during the observational period, indicating a previously unmet need for biological therapies in the Nordic population.

REFERENCES

- [1] Ballegaard C, Kristensen L. E, et al. Impact of comorbidities on tumour necrosis factor inhibitor therapy in psoriatic arthritis: a population-based cohort study. *Arthritis*. 2018;70(4):592-599.
- [2] Kristensen L. E, Jørgensen T. S, et al. Societal costs and patients' experience of health inequities before and after diagnosis of psoriatic arthritis: a Danish cohort study. *Ann Rheum Dis*. 2017;(76):1495-1501.

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SAT0366 GENDER DIFFERENCES IN PSORIATIC ARTHRITIS – IMPACT ON TUMOR NECROSIS FACTOR INHIBITORS PERSISTENCE AND RESPONSE

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Background: The impact of gender on tumor necrosis factor inhibitors (TNFi) effectiveness has been poorly studied in Psoriatic Arthritis (PsA) patients.

Table 1. Baseline characteristics of PsA patients from Reuma.pt, treated with a 1st TNFi, according to gender.

Characteristics	Population (n=750)	Female (n=377)	Male (n=373)	p-value
Age at 1 st TNFi, years (mean ± sd)	47.6 ± 11.6	48.5 ± 11.7	46.7 ± 11.5	0.030†
Obese (BMI>30Kg/m ²), n (%)	104 (25.2%)	64 (30.9%)	40 (19.5%)	0.008†
Clinical subtype, n (%)				<0.001†
Symmetric polyarthritis	401 (60.6%)	228 (68.9%)	173 (52.3%)	
Arthritis distal interphalangeal joints	29 (4.4%)	9 (2.7%)	20 (6.0%)	
Asymmetric oligoarthritis	95 (14.3%)	49 (14.8%)	46 (13.9%)	
Mutilating arthritis	9 (1.4%)	3 (0.9%)	6 (1.8%)	
Predominant axial	128 (19.3%)	42 (12.7%)	86 (26.0%)	
Years since diagnoses until 1 st TNFi (mean ± sd)	6.6 ± 6.8	7.1 ± 7.0	6.0 ± 6.6	0.033†
Swollen joints (mean ± sd)	5.3 ± 5.5	6.2 ± 6.3	4.4 ± 4.4	<0.001†
Tender joints (mean ± sd)	9.7 ± 9.6	11.9 ± 10.4	7.3 ± 8.1	<0.001†
ESR mm/1 st h (mean ± sd)	31.8 ± 25.3	35.8 ± 26.0	27.1 ± 23.8	<0.001†
MASES (mean ± sd)	2.0 ± 3.2	3.0 ± 3.9	1.1 ± 2.1	<0.001†
DAS28 (mean ± sd)	4.9 ± 1.4	5.2 ± 1.3	4.5 ± 1.4	<0.001†
DAPSA (mean ± sd)	29.9 ± 15.4	32.5 ± 16.5	26.7 ± 13.3	0.001†
HAQ-DI (mean ± sd)	1.13 ± 0.68	1.34 ± 0.66	0.90 ± 0.63	<0.001†
Concomitant csDMARDs, n (%)	505 (67.6%)	276 (73.6%)	229 (61.6%)	<0.001†
Concomitant corticosteroids, n (%)	253 (33.9%)	157 (41.9%)	96 (25.8%)	<0.001†