Results: *NLRP12* expression was significantly lower in PBMC isolated from SLE patients compared to healthy donors. The inverse correlation was observed in *NLRP12* and *IFNA* gene expression as well as *NLRP12* expression and amount of double-stranded DNA autoantibody in SLE patients. *NLRP12* expression showed negative correlations with IFN- α treatment, as well as herpes simplex virus-1 (HSV-1) infection. Results from ChIP and EMSA analysis indicated a potential transcription factor 1 (TF-1) regulating *NLRP12* promoter activity. TF-1 lead to transcriptional suppression of *NLRP12* in SLE PBMC, and it was gradually induced after IFN treatment. Recruitment of TF-1 to *NLRP12* promoter in SLE PBMC compared to the healthy PBMC was detected, and increased when treating with IFN. Human CD14⁺ monocytes collected from lupus and healthy control stimulating with different type of nucleic acids revealing significant increasing level of IFN- α and IL-6 in lupus patients. Among animal models, both pristine induced mice and Fas^{lpr} mice revealed increasing autoantibodies production and severity of glomerulonephritis in *Nlrp12*^{-/-} group in comparison with *Nlrp12*^{+/+} ones, indicating the role of *NLRP12* in maintaining positive interferon signature as well as disease activity.

Conclusion: Expression level of *NLRP12* has been demonstrated to be a biomarker of disease activity in SLE patients. The *NLRP12* was involved in the interferon signature, which was also negatively regulated by TF-1. Both clinical samples and animal models revealed *NLRP12* in maintaining the positive interferon signature, indicating the possible role of exacerbating factor for lupus disease activity.

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Clinical aspects of axial spondyloarthritis – science meets daily practice

OP0046

CAN PATIENTS WITH AXIAL SPONDYLOARTHRITIS INDICATE WHETHER PAIN IS MAINLY RELATED TO INFLAMMATION OR STRUCTURAL DAMAGE?

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Background: Patients with axial spondylarthritis (axSpA) mainly rate disease activity on experienced symptoms such as pain (1). Pain is also included in the assessments (ASDAS and BASDAI) used to monitor disease activity in axSpA. However, besides disease activity, also other factors including the presence of structural damage may be related to experienced pain and discomfort.

Objectives: To explore to what extent axSpA patients relate their experienced pain in neck, back and hips to inflammation and/or structural damage.

Methods: Patients from the Groningen Leeuwarden Axial Spondyloarthritis (GLAS) cohort visiting the out-patient clinic between May 2016 and October 2019 were included in this cross-sectional analysis. Patients filled out two additional questions related to question 2 of the BASDAI: To what extent do you think pain in your neck, back and hips is related to: 1. inflammation caused by axSpA?, 2. damage of spine and joints caused by axSpA? These questions were answered on a NRS from 0 (none) to 10 (very much). A difference of ≥ 2 points was considered as clinically relevant. Patients who differentiated the cause of their pain were allocated to an inflammation or damage group, in favour of their highest score. Furthermore, patient characteristics and clinical assessments were compared between the inflammation and damage groups.

Results: In total, 688 axSpA patients were included, 62.4% were male, mean age was 47.9 years, median symptom duration was 19 years, 77.9% were HLA-B27+, mean BASDAI was 3.9 and mean ASDAS_{CRP} was 2.3. Respectively 13% and 14% of the patients reported a score of 0 on the additional questions about inflammation or damage.

In total, 517 (75%) patients could not differentiate between inflammation or damage. 102 (15%) patients interpreted experienced pain as mainly related to inflammation and 69 (10%) patients interpreted their pain as mainly related to structural damage.

Patients who interpreted pain as mainly related to inflammation were significantly younger, had shorter symptom duration, were more frequently diagnosed as non-radiographic axSpA and had higher ASDAS_{CRP}, which was driven by the patient-reported questions as the objective marker CRP was not significantly different between both groups (Table 1).

Table 1. Patients characteristics and clinical assessments of axSpA patients who related pain mainly to inflammation versus to structural damage.

	Inflammation group (n = 102)	Structural damage group (n = 69)	P-value
Age (years)	39.5 $\pm$ 12.4	48.9 $\pm$ 12.4	<0.001
Symptom duration (years)	12 (6 – 20)	28 (17 – 35)	<0.001
Diagnosis non-radiographic axSpA	39 (40%)	8 (13%)	<0.001
Male gender	60 (59%)	44 (64%)	0.627
BASDAI	4.2 $\pm$ 1.8	3.9 $\pm$ 2.0	0.371
BASDAI – Q2	6 (3 – 7)	4 (2 – 6)	0.005
Patient global disease activity	4 (3 – 7)	3 (2 – 5)	<0.001
ASDAS _{CRP}	2.6 $\pm$ 0.9	2.2 $\pm$ 0.8	0.003
CRP	3.0 (2.0 – 8.0)	2.5 (2.0 – 4.4)	0.094
Occiput wall distance (cm)	0.0 (0.0 – 4.0)	4.0 (0.0 – 10.0)	<0.001
Chest expansion (cm)	5.8 (4.0 – 7.0)	4.0 (3.0 – 6.0)	0.006
Modified Schober test (cm)	14.0 $\pm$ 1.6	13.5 $\pm$ 1.6	0.052
Lateral flexion mean (cm)	15.3 $\pm$ 6.5	12 $\pm$ 5.9	0.001
Cervical rotation mean (degrees)	80 (70 – 90)	70 (45 – 81)	<0.001
mSASSS *	3.0 (0.0 – 9.0)	8.0 (1.8 – 26.0)	0.061

* only available in a subgroup of patients. Inflammation group (n=31), structural damage group (n=39).

Patients who reported their pain as mainly related to structural damage showed significantly worse spinal mobility on almost all spinal mobility tests. In the subgroup of patients with available mSASSS data, there was also a trend towards more spinal radiographic damage (Table 1).

Conclusion: In our large observational cohort of axSpA patients, the vast majority (75%) could not rate whether experienced pain in neck, back and hips was more related to inflammation or structural damage. However, if patients were able to relate pain to inflammation or damage, it seems in accordance with the outcome of their clinical assessments.

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OP0047

IDENTIFICATION OF CLINICAL PHENOTYPES IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS, PERIPHERAL SPONDYLOARTHRITIS AND PSORIATIC ARTHRITIS ACCORDING TO PERIPHERAL MUSCULOSKELETAL MANIFESTATIONS: A CLUSTER ANALYSIS IN THE INTERNATIONAL ASAS-PERSPA STUDY

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