

# Τι νεότερο στην Αξονική Σπονδυλαρθρίτιδα



Εσκιτζής Αναστάσιος Ρευματολόγος – Επικουρικός Ιατρός

Ρευματολογική Κλινική ΠΑΓΝΗ 24/6/2022



### Περίγραμμα παρουσίασης

New data October (2020 – June 2022)

- New drugs
- Gender differences
- Imaging
- Effect of treatment on radiographic progression
- COVID-19
- EULAR Recommendations for the Management of AxSpa
  - Treat-to-target
  - Treatment tapering
- ASAS Recommendations for requesting and reporting imaging

#### New drugs

TNFi						IL-17 inhibitors JAK inhibitors				itors	
	ADA	CTZ	ETA	GOL	INFL	BIME	BROD	IXE	SECU	TOFA	UPA
					AS						
Positive RCT results	+	+	+	+	+	+	+	+	+	+	+
EMA / FDA Approval	+	+	+	+	+	-	-	+	+	+	+
nr-AxSpa											
Positive RCT results	+	+	+	+	-	+	+	+	+	-	+
EMA / FDA Approval	+/-	+	+/-	+/-	-	-	-	+	+	-	-

only with **objective evidence of inflammation**: active sacroiliiitis on MRI and/or elevated CRP

#### **Gender differences**

Neuenschwander et al. Arthritis Research & Therapy (2020) 22:233 https://doi.org/10.1186/s13075-020-02337-2 Arthritis Research +	& Therapy
RESEARCH ARTICLE Ope	n Access
Differences between men and women with nonradiographic axial spondyloarthritis: clinical characteristics and treatment effectiveness in a real-life prospective cohort	Check for Updates
Regula Neuenschwander <sup>1</sup> , Monika Hebeisen <sup>1,2</sup> , Raphael Micheroli <sup>1</sup> , Kristina Bürki <sup>1</sup> , Pascale Exer <sup>3</sup> , Karin Niedermann <sup>4</sup> , Michael J, Nissen <sup>5</sup> , Almut Scherer <sup>2</sup> and Adrian Ciurea <sup>17</sup>	

- Women, compared to men,
- had a longer diagnostic delay (6.0 vs 4.7 years),
- had a higher level of perceived disease activity,
- had more enthesitis (80% vs 64%),
- were in a lower percentage HLA-B27 positive (67% vs 77%).
- An **ASAS40** response to a **first TNFi** (excluding patients with comorbid fibromyalgia) was achieved by
- 17% of women and
- ➢ 38% of men
- ➤ (OR 0.34).

### Imaging

Kill et al. Anthritis Research & Therapy       (2022) 24:75         Imps://doi.org/10.1186/s13075-022-02760-7       Open Access         RESEARCH ARTICLE       Open Access         Differences in topographical location       Imps://doi.org/10.1186/s13075-022-02760-7         Of sacroiliac joint MRI lesions in patients       Imps://doi.org/10.1186/s13075-022-02760-7         Open Access       Imps://doi.org/10.1186/s13075-022-02760-7	<ul> <li>Background:</li> <li>Comparative studies regarding the volume and topographic distribution of bone marrow edema (BME) and other MRI lesions in axSpA patients versus various groups of individuals with and without back pain are sparse.</li> <li>It has been reported that the location of BME in healthy subjects, patients with mechanical back pain (MBP) and postpartum females is most frequent in the lower ilium</li> </ul>
	The distribution of BME in axSpA patients has been reported being located more <b>widespread</b> in both the <b>ilium</b> and the <b>sacrum</b> as well as being more <b>voluminous</b> and accompanied by <b>structural changes.</b>

- Aim: To analyse the differences in SIJ MRI changes in early axSpA patients compared with changes in patients with MBP by exploring the differences in volume and distribution pattern of MRI SIJ findings by using a detailed two-plane quantitative scoring system.
- 2019 ASAS lesion definitions were used.
- 25 axSpA patients (mean age 31.3 years), 59 MBP patients (mean age 32.3 years)

#### Imaging



### Imaging





- Aim: To compare the diagnostic performance of MRI findings for men and for women
- 379 axSpA patients (36% females), 305 control patients (59% females)
- erosion, sclerosis, bone marrow edema, fat metaplasia, ankyloses
- three joint levels (ventral, middle, dorsal)



Lesion distribution in axSpa patients (females and males)

No major sex-specific differences for erosions and bone marrow edema



Lesion distribution in axSpa patients (females and males)

Significantly higher prevalence of fat metaplasia in men Sclerosis more common in women

Parameter		LR+ (95% CI)	LR- (95% CI)	DOR	
Ambulania	F	4.4 (1.2 – 15.6)	0.9 (0.90 - 0.99)	4.7	Ankylosis showed 10x
Ankylosis	м	30.6 (4.3 - 218.2)	0.8 (0.71 – 0.82)	40.1	stronger performance in men
Freeler	F	4.0 (2.9 - 5.7)	0.4 (0.3 – 0.5)	11.1	ankyloses in control women)
Erosion	М	6.2 (3.8 – 10.2)	0.4 (0.3 - 0.4)	17.6	, , ,
Colonasia	F	1.5 (1.3 – 1.8)	0.5 (0.4 - 0.7)	3.0	
Scierosis	М	1.6 (1.3 – 2.1)	0.7 (0.5 – 0.8)	2.5	
Fat metaplasia	F	4.0 (3.1 – 7.9)	0.6 (0.4 - 0.6)	6.3	Fat metaplasia showed 3x
	м	8.2 (4.4 – 15.6)	0.4 (0.4 - 0.5)	18.6	men
Bone marrow	F	2.5 (1.9 – 3.3)	0.5 (0.4 - 0.6)	5.0	
oedema	м	2.2 (1.6 - 3.0)	0.6 (0.5 – 0.7)	3.7	

• Diagnostic Odds Ratio was calculated, to make diagnostic performances of each parameter easily comparable.

Diagnostic Odds Ratio = ----

Parameter		LR+ (95% CI)	LR- (95% CI)	DOR	
Aminutania	F	4.4 (1.2 - 15.6)	0.9 (0.90 - 0.99)	4.7	Ankylosis showed 10x
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Diagnostic Odds
 Future revisions of imaging criteria may contain sex-specific recommendations.

mparable.

Diagnostic Odds Ratio =  $\frac{LR+}{LR-}$ 

Arthritis Rheumatol. 2020 May ; 72(5): 733-749. doi:10.1002/art.41206.

#### The Effect of Therapy on Radiographic Progression in Axial Spondyloarthritis: A Systematic Review and Meta-Analysis

Paras Karmacharya, MBBS<sup>1</sup>, Ali Duarte-Garcia, MD<sup>1,2</sup>, Maureen Dubreuil, MD M.Sc.<sup>3</sup>, M. Hassan Murad, MD<sup>4</sup>, Ravi Shahukhal, MD<sup>5</sup>, Pragya Shrestha, MD<sup>6</sup>, Elena Myasoedova, MD PhD<sup>1</sup>, Cynthia S. Crowson, PhD<sup>1,7</sup>, Kerry Wright, MBBS<sup>1</sup>, John M. Davis III, MD M.Sc<sup>1</sup>

		Std. Mean Difference				Std. Mean Difference	
Study or Subgroup	Std. Mean Difference	SE	Weight	IV, Random, 95% Cl		IV, Random, 95% CI	
mSASSS							
Barallakos 2005	-0.11	0.222	8.0%	-0.11 [-0.55, 0.33]			
van der Heijde 2009	-0.03	0.128	17.9%	-0.03 [-0.28, 0.22]			
Pecersen 2011	-0.04	0.283	5.3%	-0.04 [-0.59, 0.51]		3	
Kang 2013	0.21	0.258	6.2%	0.21 [-0.30, 0.72]			
Braun 2014	-0.09	0.13	17.5%	-0.09 [-0.34, 0.16]			
Barallakos 2014	-0.63	0.283	5.3%	-0.59 [-1.24, -0.14]			
Gensler (2 yr) 2018	-0.035	0.088	26.5%	-0.04 [-0.21, 0.14]		-	
Molnar 2018	-0.33	0.159	13.4%	-0.38 [-0.69, -0.07]			
Total (95% Ci)			100.0%	-0.12 [-0.25, 0.02]		•	
Heterogeneity: Tau <sup>a</sup> =	0.01; OhP = 9.77, df = 7 (	P=02	0); P = 289	6	1	- <u>t l 1</u>	-
Test for overall effect:	Z = 1.60 (P = 0.09)	i unite g	10110-1011		-2	Favours ITNFIL Favours Ino TMFIL	1

Forest plot of mSASSS radiographic progression in AS patients on TNFi at 2 years

Study or Subgroup Std. Mean mSASSS Baratiskes 2007 Braun 2014	-0.12 0.1	SE Weight	N, Random, 95% Cl	IV, Random, 95% Cl
mSASSS Baraliskes 2007 Braun 2014	-0.12 0.1	64 11.3%	0431040 0361	
Baraliskes 2007 Brsup 2014	-0.12 0.1	64 11.3%	0401040 0001	
Braun 2014		N	0.12 -0.50 0.20	
	-0.69 0	13 18.5%	-0.09  -0.34, 0.16]	-+-
Baraliskos 2014	-0.69 0.2	83 6.3%	-3.59 [1.24, -0.14]	
Min 2014	0.85 0.4	18 3.7%	0.95[0.13 1.77]	
Him 2016	-0.05 0.0	82 21.2%	0.05   0.21, 0.11]	
Gensler 2018	-017 00	88 20.8%	-0.07 [-0.24, 0.10]	-9-
Park 2019 Subtotal (95% CI)	-0.49 0.1	73 12.3% 93.0%	-0.49 [-0.83, -0.15] -0.14 [-0.32, 0.05]	
Helerogeneity: Tau* = 0.03; Chi*	= 16.22, df= 6 (P	= 0.01); P = 6	3 296	

#### at ≥4 years



Favours [TNFI] Favours [tto]

Study or Subgroup	Std. Mean Difference	SE	Weight	Std. Mean Difference M, Random, 95% Cl	Std. Mean Difference M, Random, 95% Cl
mSASSS					
Barailakos 2007	-012	0.194	9.9%	-0.12 [-0.50, 0.26]	
Barallakos 2014	-0.69	0.183	5.4%	-0.59 [-1.24, -0.14]	
Braun 2014	-0.09	013	16.9%	-0.09 [-0.34, 0.16]	
Kim 2016	-0.05	0.082	26.0%	-0.05 [-0.21, 0.11]	
Censler 2018	-0.07	0.083	24.7%	-0.07 [-0.24, 0.10]	
Park 2019 Subtotal (95% CI)	-0.49	6.173	11.7% 94.6%	-0.49 [0.83, -0.15] 0.17 [-0.32, -0.02]	•
Heterogeneity Tau <sup>2</sup> : Test for overall effect	= 0.02; Ch <sup>2</sup> = 9.72, df = 5 Z = 2.17 (P = 0.03)	(P = 0.0	99); I <sup>2</sup> = 49	<i>9</i> ,	

### at ≥4 years

Arthents Rheumanol. 2020 May : 72(5): 733-749. doi:10.1002/art.41206

The Effect of Therapy on Radiographic Progression in Axial Spondyloarthritis: A Systematic Review and Meta-Analysis

Paras Karmacharya, MBBS<sup>1</sup>, All Duarte-Garcia, MD<sup>1,2</sup>, Maureen Dubreuil, MD M.Sc.<sup>3</sup>, M. Hassan Murad, MD<sup>4</sup>, Ravi Shahukhal, MD<sup>5</sup>, Pragya Shrestha, MD<sup>5</sup>, Elena Myasoedova, MD PhD<sup>1</sup>, Cynthia S, Crowson, PhD<sup>1,7</sup>, Kerry Wright, MBBS<sup>1</sup>, John M, Davis III, MD M.Sc<sup>1</sup>

Study of Subgroup 1510.8	New Officience SE Wright	Std. Minari Differentia W, Rambora, MVS CI	Shu, Misser Udfor mice NJ, Hapdam, 995; CL	
mSRSSS Box states 2007 Brown 2014 Box states 2014 Box states 2014 Min 2014 Han 2014 Han 2018 Demons 2018 Food 2018 Suddates (KSS C0) History princip (Tag" × 0.01); C Test for correal effect Z = 1.4	4.12 0.194 11.29 0.09 0.17 10.59 0.00 0.203 0.19 0.05 0.011 379 0.05 0.002 21.29 0.07 0.000 21.29 0.07 0.000 20.29 0.07 0.000 20.29 0.07 0.000 20.29 0.00	0.124050,020 -0.00340,010 0.00340,24,024 -0.0340,27,010 -0.0340,27,010 0.0740,24,010 0.0740,24,010 0.0140,025,005 0.0140,025,005 0.0140,025,005 0.0140,025,005 0.0140,025,005 0.0140,025,005 0.0140,025,005 0.0140,025,005 0.0140,025,005 0.0140,025,005 0.0140,025 0.0140,025 0.0140,025 0.015 0.0140,025 0.015 0.0		
	at≥4 γears			

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# EULAR 2021

#### OP0139 A TIME-SHIFTED EFFECT OF TUMOR NECROSIS FACTOR INHIBITORS ON RADIOGRAPHIC SPINAL PROGRESSION IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS: LONG-TERM RESULTS FROM THE GERMAN SPONDYLOARTHRITIS INCEPTION COHORT

Figure 1. Cumulative probability plots depicting mSASSS change scores over 2 years in patients with axial spondyloarthritis treated vs. not treated with TNFi in the current (A) or previous (B) 2-year interval.







□ TNFi for ≥12 months in the previous 2-year interval 0 No TNFi for ≥12 months in the previous 2-year interval



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□ TNFi for ≥12 months in the previous 2-year interval o No TNFi for ≥12 months in the previous 2-year interval OP0137 TUMOR NECROSIS FACTOR INHIBITORS SHOW A DELAYED EFFECT ON RADIOGRAPHIC SACROILIITIS PROGRESSION IN PATIENTS WITH EARLY AXIAL SPONDYLOARTHRITIS: 10-YEAR RESULTS FROM THE GERMAN SPONDYLOARTHRITIS INCEPTION COHORT



# EULAR 2021

OP0139 A TIME-SHIFTED EFFECT OF TUMOR NECROSIS FACTOR INHIBITORS ON RADIOGRAPHIC SPINAL PROGRESSION IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS: LONG-TERM RESULTS FROM THE GERMAN SPONDYLOARTHRITIS INCEPTION COHORT

#### Conclusion:

TNFi treatment exhibits a **time-shifted** inhibitory effect on radiographic spinal and sacroiliitis progression in axSpA that becomes evident only in the **second 2-year interval** after treatment initiation.



ITNFI for 212 months in the current 2-year interval 0 No TNFI for 212 months in the current 2-year interval  THE for 212 months in the previous 2-year elerval o No TNE for 212 months in the previous 2-year inter



#### **COVID-19 and AxSpa**

- Available evidence does **not** demonstrate that patients with SpA who receive DMARDs are at increased risk of severe COVID-19 illness, hospitalization, or mortality.
- COVID-19 vaccination in these patients is **safe** and **effective** with most DMARD use.
  - exceptions (regarding reduced effectiveness) relevant for AxSpA: GCs, MTX
- case reports of SARS-CoV-2 infection triggering the **development** of SpA, especially in HLA-B27+ subjects
  - although the radiological evidence of erosions could suggest the pre-existence of an asymptomatic form with postinfection exacerbation

Deodhar, A., Bhana, S., Winthrop, K., & Gensler, L. S. (2022). COVID-19 Outcomes and Vaccination in Patients with Spondyloarthritis. *Rheumatology and Therapy*. https://doi.org/10.1007/s40744-022-00462-9

Saikali, W., & Gharib, S. (2021). The first non-radiographic axial spondyloarthrits with COVID-19. *Immunity, Inflammation and Disease, 9*(3), 628–631. https://doi.org/10.1002/iid3.448 Wong, J. R. Y., Zhu, L., Shah, S., & Gadikoppula, S. (2022). A Case of Axial Spondyloarthritis Triggered by SARS-CoV-2 Infection. *Cureus, 14*(3), 2–5. https://doi.org/10.7759/cureus.22860

#### **ASAS-EULAR Recommendations for the Management of AxSpa**



### ASAS-EULAR recommendations for the management of axSpA: 2022 update



### eular

Existing recommendations

Recommendation

### 2016 update of the ASAS-EULAR management recommendations for axial spondyloarthritis

Désirée van der Heijde, <sup>1</sup> Sofia Ramiro, <sup>1</sup> Robert Landewé, <sup>4,3</sup> Xenofon Baraliakos, <sup>4</sup> Filip Van den Eosch,<sup>5</sup> Alexandre Seprianc, <sup>1,6</sup> Andrea Regel, <sup>4</sup> Adrian Ciurea, <sup>2</sup> Hanne Dagtinnud,<sup>8</sup> Maxime Dougados,<sup>6,10</sup> Floris van Gaalen, <sup>1</sup> Pål Géher, <sup>11</sup> hene van der Horst-Bruinsma, <sup>1,2</sup> Robert Dihman, <sup>15</sup> Menyn Johnsbess,<sup>1,4</sup> Uta Kiltz,<sup>4</sup> Tore K. Kvien, <sup>15</sup> Pedro M. Machaco, <sup>16</sup> Helena Marzz-Ortega, <sup>17,18</sup> Anna Moto, <sup>3,10</sup> Victoria Navano-Compán, <sup>19</sup> Salih Ozopomen, <sup>26</sup> Fernando M. Pimentel-Santos,<sup>21</sup> John Revelle, <sup>24</sup> Martin Rucwaleit, <sup>15,20,20</sup> Jochen Sieper, <sup>36</sup> Percival Sampaio-Barros, <sup>27</sup>

van der Hallde D, et al. Ann Rheum (3/s 2017;76:978-991

#### **ASAS-EULAR Recommendations for the Management of AxSpa**



Preference for ASDAS (over BASDAI) for evaluation of disease activity and treatment response.

3 Treatment should be guided according to a predefined treatment target.

Treatment target was not defined.

#### **Treat-to-target**





- Safety was similar in both arms.
- From a societal perspective, TC/T2T resulted in an additional 0.04 QALY, and saved €472 compared with UC.

#### **Treat-to-target**

Μελέτη των Συννοσηροτήτων και της Θεραπευτικής Στρατηγικής Βάσει Στόχου Ύφεσης Φλεγμονώδους Φορτίου στην Πρόβλεψη της Έκβασης Ασθενών με Σπονδυλοαρθρίτιδες



#### **ASAS-EULAR Recommendations for the Management of AxSpa**

- 9± TNFi, IL-17i\* or JAKi should be considered in patients with persistently high disease activity despite conventional treatments; current practice is to start a TNFi or IL-17i\*.
- 10 If there is a history of recurrent uveitis or active IBD, preference should be given to a monoclonal antibody against TNFα\*\*. In patients with significant psoriasis, an IL-17i\* may be preferred.
- \*IL-17i: refers only to IL-17A-inhibitors; \*\*This includes a pegylated Fab' fragment

- 11# Absence of response to treatment should trigger re-evaluation of the diagnosis and consideration of the presence of comorbidities
- 13 If a patient is in sustained remission, tapering of a bDMARD can be considered.

What was already known?

- Several studies have been conducted in the past few years to assess the effect of **tapering** or **discontinuation** of bDMARDs in patients with AxSpA.
- In general, dose **tapering** is possible in many patients that have achieved **sustained** (>6 months) **remission** or **low disease activity state**.
- **Discontinuation** of bDMARD frequently leads to disease flares, sooner or later.

#### **Treatment tapering**

### Arthritis Care & Research

AMERICAN COLLEGE RHEUMATOLOGY

Original Article

Tumor Necrosis Factor Inhibitor Dose Reduction for Axial Spondyloarthritis: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

Daeria O. Lawson 🐼 Maria Eraso, Lawrence Mbuagbaw, Marianinha Joanes, Theresa Aves, Alvin Leenus, Ahmed Omar, Robert D. Inman

- meta-analysis of 6 RCTs
- **Conclusion:** Patients with AxSpa may experience little to no clinical benefit from reduction of TNFi therapy. Maintaining the standard dose probably improves the sustained effect on disease activity and helps to prevent disease flare.
- **Caveat:** In some trials, dose reduction was NOT limited to patients with sustained LDA/remission.

Outcome	Effect estimate (95% CI)	Favours
Efficacy		
ASAS40	<b>RR 0.62</b> (0.49, 0.78)	Standard dose
BASDAI	MD 0.35 (0.10, 0.60)	Standard dose
Remission		
ASAS Partial	<b>RR 0.17</b> (0.06, 0.46)	Standard dose
Delevee		
Relapse		
Relapse	RR 1.73 (1.32, 2.27)	Standard dose
Safety		
Any infections	IRR 0.98 (0.76, 1.25)	No difference
Injection/infusion reactions	IRR 1.14 (0.58, 2.25)	No difference

#### **Treatment tapering**

Ann Rheum Dis. 2022 Jun 14;annrheumdis-2022-222260. doi: 10.1136/annrheumdis-2022-222260. Online ahead of print.

Treat-to-target dose reduction and withdrawal strategy of TNF inhibitors in psoriatic arthritis and axial spondyloarthritis: a randomised controlled non-inferiority trial

Celia Aj Michielsens <sup>1</sup> <sup>2</sup>, Nathan den Broeder <sup>3</sup> <sup>2</sup>, Frank Hj van den Hoogen <sup>3</sup>, Elien Am Mahler <sup>3</sup>, Steven Teerenstra <sup>4</sup>, Désirée van der Heijde <sup>5</sup>, Lise M Verhoef <sup>3</sup>, Alfons A den Broeder <sup>3</sup> <sup>2</sup>

- pragmatic open-label, monocentre, randomised controlled non-inferiority trial on T2T tapering of TNFi
- 122 patients with PsA (n=64) and AxSpA (n=58) with ≥6 months stable low disease activity were included

	Tapering group	No-tapering group	
Patients in LDA at 12 months	69%	73%	non-inferiority
Mean dose (as % of Daily Defined Dose)	53% of DDD	91% of DDD	

#### **Treatment tapering**

Recapture Rates with Ixekizumab after Withdrawal of Therapy in Patients with Axial Spondyloarthritis: Results at Week 104 from a Randomized Placebo-Controlled Withdrawal Study



Robert B.M. Landewé,<sup>1</sup> Denis Poddubnyy,<sup>2</sup> Proton Rahman,<sup>3</sup> Rebecca Bolce,<sup>4</sup> Soyi Liu Leage,<sup>4</sup> Jeffrey Lisse,<sup>4</sup> So Young Park,<sup>4</sup> Lianne Gensler<sup>5</sup>



- Flare: ASDAS ≥2.1 at two consecutive visits or ASDAS >3.5 at any visit
- Recapture: ASDAS <2.1 (LDA) or ASDAS <1.3 (ID) following a flare</li>

#### **Treatment reduction**

#### Time to First Flare, Weeks 24-104 NRI, RW ITT Population



## ASAS recommendations for requesting and reporting imaging in patients with suspected axial spondyloarthritis

Diekhoff T, Eshed I, Giraudo C, Haibel H, Hermann KG, de Hooge M, Jans L, Jurik A, Lambert RG, Machado PM, Maksymowych W, Mallinson M, Marzo-Ortega H, Navarro V, Pedersen SJ, Østergaard M, Reijnierse M, Rudwaleit M, Sommerfleck F, Weber U, Baraliakos X\*, Poddubnyy D\*





### Aims of this project

- Communication around imaging in axial spondyloarthritis
- Information in the referral from the rheumatologist/clinician
- Information in the report of the radiologist
- How this information should be given
- Radiography, low-dose CT and MRI
- Sacroiliac joints and spine

Rheumatologists and radiologists were included in the process. "Intense discussion", "relatively high disagreement" ESSR signalled endorsement

# Referrals

- 1 The referring physician should communicate important clinical information when requesting imaging exams. This clinical information should include the patient's age, sex and HLA-B27 status.
- 2 Requests for imaging should include current or past history of back pain, its duration, localization, and inflammatory features, whether present or not. For follow-up exams, a change in clinical symptoms should be indicated.
- 3 Radiologists should be informed if the patient undertakes physically demanding activities or has history of childbirth (number of children and date of most recent childbirth).
- 4 Radiologists should have access to previous exam images for comparison or to the respective reports if those are not available.
- 5 The referral should include possible contraindications to certain types of imaging or contrast medium.
- 6 The referring physician should indicate the **suspected clinical diagnosis** and possible alternative explanations for the symptoms, whether SpA was previously diagnosed, and if the exam is requested for **primary diagnosis**, to assess **disease activity** or **treatment response**.

# **Report: Clinical Data**

1 The report should start by summarising essential clinical information, including the patient's age, sex, a summary of symptoms, the suspected diagnosis, whether the exam was requested for primary diagnosis or follow-up, and what imaging was available for comparison.

### **Report: Technical Data**

- 2a Radiography: The report should include the number of images, types of projections, and the patient's positioning.
- 2b MRI: The report should include the applied field strength and sequences with slice orientation and thickness, if fat suppression was applied, and whether and what type of contrast medium was administered.
- **2c** CT: The report should include the patient's position, reconstructions' orientation and slice thickness, and a general indicator for the radiation dose (e.g., dose length product).
- 3 The anatomical coverage of the exam should be indicated.
- 4 The report should include a general statement about **image quality and complications** from imaging, particularly if the exam or its interpretation is affected.

### **Report Text**

- 5a SIJ: Bone marrow oedema/osteitis, erosions and fat lesions are significant findings that the report should list semi-quantitatively with their localization specified. Their absence should be stated clearly.
- 5b SIJ: The report should include if other active or structural lesions are present. Structural lesions should be reported per individual bone. The radiologists can summarize the absence of those active or structural lesions in the report.
- 6a Spine: The report should semi-quantitatively list bone marrow oedema/osteitis at vertebral corners. All other active and structural lesions should be mentioned if present.
- 6b Spine: The location of the findings mentioned above is essential for clinical correlation, and it should be stated at the level of the individual vertebra or discovertebral unit.
- 7 Findings unrelated to SpA but of potential clinical importance should be mentioned when present. These include for example gas inside the joint ("vacuum phenomenon"), osteophytes, transitional vertebrae, anatomical variations, and spinal malposition.

### **Report: Conclusion**

- 8 The radiologist should state clearly if findings are compatible with SpA, based on the images and clinical information available. The conclusion should provide whether there is active inflammation or structural changes with the most prominent lesions, and give an indication of the confidence in interpretation of the findings.
- 9 Based on the exam findings, differential diagnoses and their probability should be mentioned, especially if more likely than SpA.
- 10 If the exam findings are inconclusive, radiologists should suggest further imaging according to their expertise.
- 11 If the exam is indicative of SpA and a rheumatologist did not request the imaging investigation, the report should recommend referral to a rheumatologist for further assessment.



### Reporting: A Patients' Perspective

- It is essential to find an imaging diagnosis in the report.
- The report should fully list relevant differential diagnoses and additional findings.

#### Take-home messages

- Fascinating era in management of axSpa with new effective drugs expanding the possibility to achieve better outcomes for more patients.
- Need to develop **individualized strategies** to reach and maintain **disease remission** and prevent **structural progression**, with smart **treatment tapering** when indicated.
- **Gender differences** in clinical and imaging features and treatment response need to be better understood and more effectively taken into account in the management of patients.
- **Imaging** is key in differentiating axSpa from other causes of chronic back pain, but not always accurate.
- Improving communication between rheumatologists and radiologists is of paramount importance (and a goal of this meeting!).

Σας ευχαριστώ για την προσοχή σας!