What drives the BASDAI in pregnant patients with axial spondyloarthritis? A pooled analysis of four European pregnancy registries.

Yvette Meissner[1], Rebecca Fischer-Betz[2], Nathalie Costedoat-Chalumeau[3], Frauke Förger[4], Anna Moltó[5], Marianne Wallenius[6], Anja Strangfeld[1,7]

[1]Deutsches Rheuma-Forschungszentrum Berlin, Germany; [2]Department for Rheumatology and Hiller Research Institute, University Clinic Duesseldorf, Germany; [3]AP-HP, Cochin Hospital, Internal Medicine Department, Paris, France and Université de Paris, CRESS, INSERM, INRA, Paris, France; [4]Department of Rheumatology, Immunology and Allergology, University Hospital (Inselspital) and University of Bern, Switzerland; [5]AP-HP, Rheumatology Department and Université de Paris, U-1153, INSERM, Paris, France; [6]University Hospital and Norwegian University of Science and Technology, Trondheim, Norway; [7]Charité University Medicine Berlin, Germany;

German Rheumatism Research Centre Berlin, Epidemiology and Health Services Research ACR 2022 0954

Conclusions

This analysis shows that especially fatigue and back pain have an impact on the composite BASDAI. A limitation of this analysis is that data were not available for all measured time points of the individual pregnancies. Therefore, the results should be confirmed by other studies.

The BASDAI is a validated instrument for assessing disease activity in axSpA patients. Since the calculation of the score also includes factors that can be influenced by pregnancy, it may only be of limited value for measuring disease activity in pregnancy.

Background

No modified index is available to assess disease activity during pregnancy in women with axial spondyloarthritis (axSpA). Validated indices for axSpA are the Ankylosing Spondylitis Disease Activity Score (ASDAS) and the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI).

The patient reported BASDAI includes six components reported on a 0-10 scale:

- ✓ Fatigue
- ✓ Neck, back or hip pain
- ✓ Pain or swelling in other joints
- ✓ Tenderness
- ✓ Level of morning stiffness
- ✓ Duration of morning stiffness

Objectives

? What are the driving factors for the BASDAI in pregnant patients with axSpA?

Patients and Methods

- Data source: Registries from France, Germany, Norway and Switzerland, that participate in the European Network of Pregnancy Registries in Rheumatology (EuNeP). The four registries collect data of women with inflammatory rheumatic diseases if they wish to conceive, during and after pregnancy prospectively and nationwide on regular time points.
- Patient selection: Women who fulfilled ASAS classification criteria for axSpA and for whom a pregnancy outcome was reported until 12/2019 or 07/2020, depending on the data source.
- Data analysis: Anonymised data of the registries was pooled. Means and standard deviations of the composite BASDAI and its single components were analysed descriptively.

Results

332 pregnancies in 304 women with axSpA
Maternal age: 31.4 ± 4.5

Years since axSpA diagnosis: 5.0 ± 4.0
HLA-B27 positive: 76.6%
Extraarticular manifestation*: 9.8%

*Numbers are given as mean ± standard deviation unless otherwise indicated. *History of inflammatory bowel disease, psoriasis and/or uveitis.*

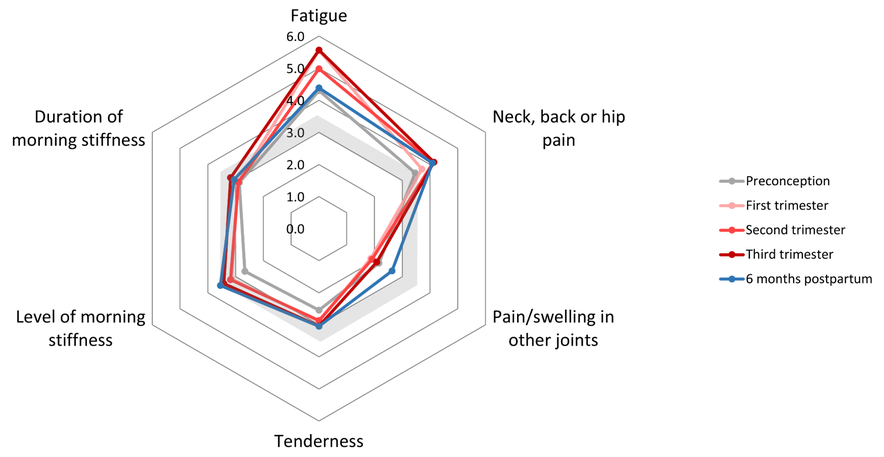
Contributions to the pooled data set:
50.3% pregnancies from Norway, 26.2% from Germany, 15.4% from France and 8.1% from Switzerland.

Mean BASDAI was
- 3.0 before conception,
- 3.4, 3.4 and 3.5 in the first, second and third trimester, and
- 3.4 within 6 months postpartum.

At all time points, values for fatigue and neck, back or hip pain were higher than the composite BASDAI. Fatigue was particularly elevated in the first and third trimester, neck, back or hip pain from second trimester onwards.

After pregnancy, the level of morning stiffness was slightly higher than the composite BASDAI.

All other components were lower than the composite BASDAI.



	Fatigue	Neck, back or hip pain	Pain/swelling in other joints	Tenderness	Level of morning stiffness	Duration of morning stiffness	**BASDAI**	n_{miss}
Preconception	4.3 ± 3.2	3.5 ± 2.6	2.2 ± 2.6	2.5 ± 2.7	2.7 ± 2.6	2.9 ± 2.9	**3.0 ± 2.1**	241
First trimester	5.6 ± 2.8	3.7 ± 2.9	1.9 ± 2.3	2.9 ± 3.0	3.1 ± 3.1	2.9 ± 2.6	**3.4 ± 2.2**	151
Second trimester	5.0 ± 2.6	4.1 ± 2.6	1.9 ± 2.4	2.9 ± 2.8	3.2 ± 3.0	2.9 ± 2.8	**3.4 ± 2.2**	108
Third trimester	5.6 ± 2.7	4.1 ± 3.0	2.1 ± 2.5	3.0 ± 2.9	3.4 ± 3.2	3.2 ± 2.9	**3.5 ± 2.3**	105
6 months pp	4.4 ± 2.8	4.1 ± 2.8	2.6 ± 2.7	3.0 ± 2.9	3.5 ± 3.0	3.1 ± 2.9	**3.4 ± 2.3**	141

Figure: Means of BASDAI components before, during and after pregnancy. The grey shadow indicates the value range of the composite BASDAI.
Table: means ± standard deviations of BASDAI components and of the composite score.
n_{miss} = number of missing information

This work was supported by a research grant from FOREUM Foundation for Research in Rheumatology. Icon credits: Noun Project (Imran Shaikh, Eucalyp, Creative Mania).

y.meissner@drfz.de