3 (Tim-3) has been reported as an important regulatory molecule, expressed and regulated on different innate immune cells, plays a pivotal role in several autoimmunity diseases. Recent study indicates that Tim3 is also expressed on neutrophils. However, the frequency and roles of Tim3-expressing neutrophils in AS was not clear.

Objectives: In this study, we investigated the expression of Tim3 on neutrophils in AS patients and analyzed the correlation between the level of Tim3-expressing neutrophils and the disease activity of AS.

Methods: AS Patients were recruited from Guangdong Second Provincial General Hospital (n=49). Age/sex-matched volunteers as Healthy controls (HC) (n=39). The medical history, clinical manifestations, physical examination, laboratory measurements were recorded. The expression of costimulatory molecules including programmed death 1 (PD-1), Tim-3 on neutrophils were determined by flow cytometry. The frequencies of Tim3-expressing neutrophils in AS patients were further analyzed for their correlation with markers of inflammation ESR and CRP, disease activity and severity of AS.

Results: The expression of Tim3 on neutrophils in patients with AS was increased compared to the HC (Figure 1A). The frequency of Tim3-expressing neutrophils in patients with AS showed an positive correlation with ESR, CRP and ASAS-endorsed disease activity score (ASDAS) (Figure 1B). Moreover, the frequency of Tim3-expressing neutrophils in active patients(ASDAS $\geq$ 1.3) was increased as compare with the inactive patients (ASDAS<1.3) (Figure 1C).

Conclusion: Increased Tim-3 expression on neutrophils may be a novel indicator to assess disease activity and severity in AS, which may serves as a negative feedback mechanism preventing potential tissue damage caused by excessive inflammatory responses in AS patients.

References:

- [1] Han, G., Chen, G., Shen, B. & Li, Y., Tim-3: an activation marker and activation limiter of innate immune cells. *FRONT IMMUNOL* 4 449 (2013).
- [2] Vega-Carrascal, I. *et al.*, Galectin-9 signaling through TIM-3 is involved in neutrophil-mediated Gram-negative bacterial killing: an effect abrogated within the cystic fibrosis lung. *J IMMUNOL* 192 2418 (2014).

Figure 1. (A)The expression of Tim3 on neutrophils in AS and HC.(B)The correlation between Tim3-expressing neutrophils and ESR,CRP,ASDAS.(C) The expression of Tim3 on neutrophils in active and inactive patients.

Disclosure of Interests: None declared
DOI: 10.1136/annrheumdis-2020-eular.5466

AB0694

IS THERE ANY HETEROGENEITY OF SPONDYLOARTHRITIS DISEASE MANIFESTATIONS BETWEEN TWO ETHNIC SUBGROUPS?:A MULTICENTRE INTERNATIONAL COMPARATIVE STUDY BETWEEN INDIA AND UK

N. Jain¹, S. Pandya², P. Srivastava², P. Chotalia², A. Moorthy¹. ¹Leicester Royal Infirmary, Leicester, United Kingdom; ²NHL Municipal Medical College, Ahmedabad, India

Background: Pathogenesis of Spondyloarthritis (SpA) multifactorial and remains unclear. Various hypothesis have been postulated genetics, HLAB27, IL17, Gut microbiome and Biomechanical stress. Many of these factors can be attributed to ethnic background and environment. HLAB27 accounts for 20–25 % of total heritability and 40% of genetic risk while <10% of HLA-B27 carriers in general population develop SpA¹. Higher faecal calprotectin levels in SpA compared to control point towards microscopic gut inflammation². Thus dietary habits and geographical factors can influence pathogenesis of disease. We looked in clinical manifestations of SpA patients of two very different ethnic background Caucasians and Indians from UK and India to shed more light in understanding the disease

Objectives: To study any differences in the clinical manifestations of SpA patients of two ethnic groups

To compare outcome measure (BASDAI and ASDAS) between Caucasians and Indians

To study the difference in disease activity between Indian patients and British Asians

Methods: Multicentre observation study where data of SpA patients attending rheumatology clinics from two major teaching hospitals collected. In India data collected from Sheth VS Hospital and NHL Medical College, Gujarat and in United Kingdom from University Hospitals Leicester, NHS trust. Leicester has a multi-ethnic demography wherein almost 30%³ of population is of south Asian ethnicity, making this study unique.

Baseline demographic and clinical data was collected. Clinical and outcome measures compared to see any heterogeneity in disease manifestations. SPSS software used

Results: Total 200 patients analysed with 148 Indians and 52 Caucasians. The Indian cohort was subdivided into British Asians (second generation Indians) and those from Gujarat, India

We found Indian subgroups were younger with shorter disease duration. Comparison in Table 1

Table 1.

	Caucasian	Indian	P
Age	45.9±12	31±12	<0.001
M:F	34:19	3:1	0.74
TDI years	9.6 ±5.9	3.5± 5.2	<0.001
BASDAI	4.05±2.17	3.1±1.7	0.002
ASDAS	2±0.8	2.4±1.2	0.02
CRP	12.8±23.6	24±12	<0.001
HLAB27	67%	26%	<0.001
Uveitis	25%	12%	0.02
IBP	78%	90%	0.03
Enthesitis	21%	60%	<0.001
Peripheral Arthritis	19%	36%	0.02
Dactylitis	2%	10%	0.07
Psoriasis	10%	20%	0.1
IBD	2%	5%	0.35

Comparing British Asians to Indians, Gujarat no significant difference in clinical parameters. (Table 2)

Table 2.

	British Asian	Indian	P
BASDAI	5.16±2.76	3.1±1.7	0.006
ASDAS	2.53±1.3	2.4±1.2	0.74
CRP	15.2 ±15.4	24±12	<0.001

Conclusion: We found Caucasians had more HLAB27 positivity and extra-articular manifestation of uveitis however the Indian population has

more enthesitis and peripheral arthritis. Enthesitis is initiated during a mechano-sensation and the cultural difference including style of footwear could probably be one of the factors explaining our findings inflammatory back pain has been reported to be higher in Indians compared to Caucasians which could be due to life style

The fact that ASDAS CRP behaves similarly in Indian patients across the two countries and is more when compared to Caucasians might point towards overall higher burden of disease in Indian population

To our knowledge this is a first study comparing clinical manifestations of SpA between Indians and Caucasians

References:

- [1] Brown MA et al. Susceptibility to ankylosing spondylitis in twins: the role of genes, HLA and environment. *Arthritis Rheum* 1997;40: 1823–8
- [2] J Simone, et al. Fecal Calprotectin, Gut Inflammation and SpA Archives of Medical Research. 2019;50:41-46
- [3] <http://www.ons.gov.uk/census>

Disclosure of Interests: Nibha Jain: None declared, Sapan Pandya: None declared, Puja Srivastava: None declared, Prashant Chotalia: None declared, Arumugam Moorthy Speakers bureau: Abbvie, Novartis,UCB,MSD

DOI: 10.1136/annrheumdis-2020-eular.6497

AB0695

SUSTAINED ASDAS-CRP REMISSION IS ASSOCIATED WITH BETTER LONG-TERM FUNCTIONAL OUTCOMES: A REAL-LIFE ANKYLOSING SPONDYLITIS COHORT STUDY

J. M. Kerber¹, J. D. De Mello¹, P. Palominos², A. A. Gasparin², F. D. A. Menegat², C. V. Brenol², C. Kohem². ¹Federal University of Rio Grande do Sul, Porto Alegre, Brazil; ²Hospital de Clínicas de Porto Alegre, Rheumatology Department, Porto Alegre, Brazil

Background: Ankylosing spondylitis (AS) leads to back pain and structural damage that may result in functional impairment¹. Function is usually assessed in clinical trials conducted in developed countries, with patients receiving biological therapy^{2,3}.

Objectives: To evaluate variation in the Bath Ankylosing Functional index (BASFI) over time in a AS cohort followed in a developing country. Compare the improvement in BASFI between patients achieving or not sustained (≥ 12 months) ASDAS-CRP remission/low disease activity (LDA). Analyze predictors for achieving a minimum clinically important improvement (MCII) in BASFI ($\Delta\text{BASFI} \leq -0.6$)⁴.

Methods: This cross-sectional analysis was conducted in a retrospective cohort. Adult patients fulfilling the New York criteria for AS and followed during at least 5 years in the Spondyloarthritis clinic were included. BASFI variation (ΔBASFI) was described as median (25th/75th). Comparison of ΔBASFI between patients fulfilling or not sustained ASDAS-CRP remission/LDA was done using the Mann-Whitney test. Hierarchical Poisson model was used to identify predictors for achieving a MCII in BASFI.

Results: 69 patients were analyzed, 53.6% were men, the mean age was 48.9 ± 11.4 years, and the mean follow-up time was 6.1 ± 0.5 years, median (25th/75th) disease duration of 10 (5-18) years; 14.5% of the patients were on biological therapy at baseline. The median (25th/75th) ΔBASFI was low: -0.1 (-1.9 / +1.1) but 46.4% (N= 32) presented a MCII in BASFI during follow-up. Patients who achieved sustained ASDAS-CRP remission/LDA had a significant improvement in BASFI over time compared with those who did not achieve this target ($p=0.026$) (Figure 1). Patients with higher BASFI scores at baseline had a greater probability of achieving a MCII in BASFI (RR1.13 95%CI 1.00-1.27 $p=0.047$). Achieving and maintaining ASDAS-CRP remission/LDA during at least 12 months increased in 82% the probability to obtain a MCII in BASFI (RR 1.82 95% CI 1.14-2.91, $p=0.012$).

Conclusion: Patients achieving sustained ASDAS-CRP remission/LDA had better functional outcomes over time compared to those not achieving this target. Higher BASFI scores at baseline and sustained ASDAS remission/LDA were predictors of a MCII in BASFI.

References:

- [1] Madsen OR: Stability of fatigue, pain, patient global assessment and the Bath Ankylosing Spondylitis Functional Index (BASFI) in spondyloarthritis patients with stable disease according to the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI). *Rheumatol Int*. 2018;38(3):425-432.
- [2] Baraliakos X, Kivitz AJ, et al: Long-term effects of interleukin-17A inhibition with secukinumab in active ankylosing spondylitis: 3-year efficacy and safety

results from an extension of the Phase 3 MEASURE 1 trial. *Clin Exp Rheumatol*. 2018; 36(1):50-55

- [3] Deodhar A, Reveille JD, et al: Safety and Efficacy of Golimumab Administered Intravenously in Adults with Ankylosing Spondylitis: Results through Week 28 of the GO-ALIVE Study. *J Rheumatol*. 2018; 45(3): 341-348
- [4] Kvietkovsky MJ, Ramiro S, Landewé R, et al: The Minimum Clinically Important Improvement in Patient-acceptable Symptom State in the BASDAI and BASFI for Patients with Ankylosing Spondylitis. *J Rheumatol* 2016; 43(9): 1680-1686.

Figure 1. Comparison of ΔBASFI between patients who achieved or not sustained ASDAS-CRP remission/LDA.

Disclosure of Interests: Juliana Maria Kerber Grant/research support from: This work was sponsored by the regional society of rheumatology (Sociedade de Reumatologia do Rio Grande do Sul)., Juliana Dias de Mello Grant/research support from: This work was sponsored by the regional society of rheumatology (Sociedade de Reumatologia do Rio Grande do Sul)., Penelope Palominos Grant/research support from: This work was sponsored by the regional society of rheumatology (Sociedade de Reumatologia do Rio Grande do Sul)., Andrese Aline Gasparin Grant/research support from: This work was sponsored by the regional society of rheumatology (Sociedade de Reumatologia do Rio Grande do Sul)., Franciele de Almeida Menegat Grant/research support from: This work was sponsored by the regional society of rheumatology (Sociedade de Reumatologia do Rio Grande do Sul)., Claiton Viegas Brenol Grant/research support from: This work was sponsored by the regional society of rheumatology (Sociedade de Reumatologia do Rio Grande do Sul)., Charles Kohem Grant/research support from: This work was sponsored by the regional society of rheumatology (Sociedade de Reumatologia do Rio Grande do Sul).

DOI: 10.1136/annrheumdis-2020-eular.4555

AB0696

THE PATH OF A PATIENT WITH AXIAL SPONDYLOARTHRITIS TO DIAGNOSIS IN RUSSIA, DATA FROM THE EMAS SURVEY

S. Lapshina¹, M. Garrido-Cumbrera², T. Dubinina³, A. Dubikov⁴, I. Gaydukova⁵, M. Korolev⁶, E. Zonova⁷, P. Pchelnikova⁸, A. Sitalo⁹, I. Shipilova¹⁰. ¹Kazan State Medical University, Kazan, Russian Federation; ²Universidad de Sevilla, Health and Territory Research (HTR), Sevilla, Spain; ³VA Nasonova Research Institute of Rheumatology, Moscow, Russian Federation; ⁴Clinic of Rheumatology, Vladivostok, Russian Federation; ⁵North-Western State Medical University n.a. II Mechnikov, Saint-Petersburg, Russian Federation; ⁶Novosibirsk State Medical University, Novosibirsk, Russian Federation; ⁷Research Institute of Clinical and Experimental Lymphology, Novosibirsk, Russian Federation; ⁸All-Russian Patient Union, Moscow, Russian Federation; ⁹Russian Ankylosing Spondylitis Association,