Conclusion: This SLR emphasizes the current heterogeneity in the assessment and report of enthesitis. There is still an unmet need for further studies to improve our understanding about enthesopathy.

REFERENCES:

- [1] Schett G. et al. Enthesitis: from pathophysiology to treatment. *Nat Rev Rheumatol*. 2017;13(12):731-41.

Disclosure of Interests: Rita Pinheiro Torres: None declared., Santiago Rodrigues-Manica Speakers bureau: Novartis, Janssen and MSD, Fernando Pimentel dos Santos: None declared.

DOI: 10.1136/annrheumdis-2021-eular.3681

AB0483

CAN WE PREDICT WHICH PATIENTS WITH SPONDYLOARTHRITIS WILL NEED DOSE ESCALATION OF SECUKINUMAB TO 300 MG MONTHLY?

D. Fonseca¹, F. Oliveira Pinheiro², M. Rato², B. M. Fernandes², S. Garcia², A. Martins², D. Santos Oliveira^{2,3}, F. R. Martins⁴, M. Bernardes^{2,5}, L. Costa².

¹Centro Hospitalar de Vila Nova de Gaia / Espinho, Rheumatology, Vila Nova de Gaia, Portugal; ²Centro Hospitalar Universitário de São João, Rheumatology, Porto, Portugal; ³Center for Health Technology and Services Research (CINTESIS), University of Porto, Faculty of Medicine, Porto, Portugal; ⁴Centro Hospitalar Universitário do Algarve, Rheumatology, Faro, Portugal; ⁵Faculdade de Medicina da Universidade do Porto (FMUP), Rheumatology, Porto, Portugal

Background: Secukinumab is a fully human monoclonal antibody against interleukin-17A, approved in several countries for the treatment of ankylosing spondylitis (AS) and psoriatic arthritis. It is known that some patients benefit from increasing the monthly dose of secukinumab from 150mg, the most commonly used dose, to 300mg. However, the baseline clinical characteristics that differentiate these patients are not yet fully understood.

Objectives: This study aimed to investigate whether there are any variables at the beginning of biologic therapy that might predict a greater probability of having to increase the dose of secukinumab to 300mg in order to obtain a response to treatment.

Methods: This is a retrospective cohort study, including all the spondyloarthritis and psoriatic arthritis patients under secukinumab at our Rheumatology Department and registered in the national database (Reuma.pt).

Demographic, clinical and laboratorial characteristics and disease activity measures were collected from the first visit before the patient began secukinumab. For comparison between the 2 groups, continuous variables were analyzed using Mann-Whitney U and T-tests and categorical variables were analyzed using a Chi-square test. Multivariate regression analyses assessed the impact of selected variables on the need to increase the dose of secukinumab to 300mg.

Results: Thirty-two patients with a mean age of 53±11.96 years were included, 19 (58%) were females and 16 (48.5%) had psoriasis. Twenty-seven (81.8%) patients were under a nonsteroidal anti-inflammatory drug (NSAID), 11(33.3%) were under corticosteroid and 11(33.3%) were under conventional synthetic disease-modifying antirheumatic drug (csDMARD); 25 (75.8%) had previously been treated with a biological disease-modifying antirheumatic drug (bDMARD). The mean patient baseline VAS and physician baseline VAS were 74,39±19,77 and 47,55±23,38, respectively; the mean erythrocyte sedimentation rate (ESR) and C-Reactive Protein (CRP) were 26,33±22,62 mm/hr and 10,81±16,88 mg/dL, respectively; the mean swollen joint count (SJC) and tender joint count (TJC) were 1,30±1,63 and 3,67±3,14, respectively; the mean Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and Ankylosing Spondylitis Disease Activity Score (ASDAS) were 6,18±2,06 and 3,41±0,84, respectively; the mean Bath Ankylosing Spondylitis Metrological Index (BASMI) and Bath Ankylosing Spondylitis Functional Index (BASFI) were 4,22±1,58 and 6,28±2,53, respectively; the mean Maastricht Ankylosing Spondylitis Enthesitis Score (MASES) was 2,85±3,23.

Nineteen patients (57.6%) had the dose of secukinumab increased to 300mg. At the baseline visit, the group of patients which had their secukinumab monthly dose increased to 300mg were more frequently men (12 vs 2, p=0.005) and had psoriasis (12 vs 4, p=0.049). On the other hand, these patients also exhibited lower MASES values (2±1.089 VS 4±0.501, p=0.022).

A regression analysis was conducted, estimating the relationships between the outcome binary variable of the monthly dose of secukinumab and the following predictors: gender, psoriasis, MASES value and use of corticosteroid. Female gender (OR 0.070, CI95% 0.005-0.890; p=0.040) and absence of psoriasis (OR 0.104, CI95% 0.011-0.952; p=0.045) were predictors for maintaining secukinumab at a dose of 150mg monthly.

Conclusion: Our data suggest that the most common characteristics of patients in need of increasing the monthly dose of secukinumab from 150 to 300mg to achieve a better treatment response are: male gender, coexistence of psoriasis

and lower MASES value at baseline. The first two variables remained statistically significant in a multivariate model of regression analysis. Nonetheless, we insist it is of paramount importance to conduct larger studies to confirm these findings.

REFERENCES:

- [1] Deodhar A, et al. Long-term safety of secukinumab in patients with moderate-to-severe plaque psoriasis, psoriatic arthritis, and ankylosing spondylitis. *Arthritis Res Ther*. 2019 May 2;21(1):111.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4001

AB0484

TROUGH LEVELS OF TNF-A INHIBITORS AND THEIR IMMUNOGENICITY IN THE TREATMENT OF RHEUMATIC DISEASES AND INFLAMMATORY BOWEL DISEASES

T. Nuriakhmetova¹, I. K. Valeeva², J. Shevnina³, D. Abduganieva⁴. ¹Kazan State Medical University, Hospital therapy, Kazan, Russian Federation; ²Kazan State Medical University, Central Scientific Research Laboratory, Kazan, Russian Federation; ³Republican clinical hospital n.a. N.A. Semashko, consultative polyclinic, Simferopol, Russian Federation; ⁴Kazan State Medical University, Hospital therapy, Kazan, Russian Federation

Background: The features of the underlying immune-mediated disease can affect the efficacy, pharmacokinetics and immunogenicity of the biologic agents, which are among the important predictors of loss of response to TNF- α inhibitors (TNFi).

Objectives: To compare the frequency of TNFi low trough levels and their immunogenicity in the treatment of rheumatic diseases (RD) (ankylosing spondylitis (AS) and rheumatoid arthritis (RA)) and inflammatory bowel diseases (IBD) (Crohn's disease (CD) and ulcerative colitis (UC)).

Methods: Among 120 patients (40 with AS (33.3%), 19 with RA (15.8%), 42 with CD (35%), and 19 with UC (15.8%)), trough level of infliximab (INX) (n=36, 30%), adalimumab (ADM) (n=45, 37.5%) and certolizumab pegol (CZP) (n=39, 32.5%) and the level of anti-drug antibodies (ADAb) were measured in the serum samples drawn directly before the planned drug administration.

Results: Low drug level (below 0.5 μ g/mL for INX¹, 4.9 μ g/ml for ADM², and 20 μ g/l for CZP³) was found in 54 (45%) patients: in 33 (55.9%) patients with RD and 21 (34.4%) patients with IBD. In the RD group, low drug trough level was observed more often than in IBD (55.9% vs 34.4%, OR 2.418, 95% CI 1.157 to 5.052, p=0.018). Only in UC was there a relationship between the received low dose of the drug (up to 200 mg of INX, 40 mg of ADM, and 200 mg of CZP) and its low level in the serum (p=0.026). Among the additional factors associated with a low TNFi level, lower dose of concomitant therapy at the time of a biologic initiation (66.7% vs 20.8%, OR 7.6, 95% CI 1.388 to 41.617, p=0.033) and the absence of pseudopolyps (78.9% vs 21.1%, p=0.045) were found in IBD, and in case of RD these factors included the age of 30 to 45 years (72.7% vs 41.9%, OR 3.692, 95% CI 1.136 to 12.0, p=0.026), the absence of comorbidities (58.6% vs 41.4%, OR 3.44, 1.09 to 10.858, p=0.032) and male gender (78.8% vs 50% in women, OR 3.714, 95% CI 1.194 to 11.552, p=0.02).

ADAb were detected in 29 (24.2%) patients (7 to INX (19.4%), 8 (17.8%) to ADM, 14 (35.9%) to CZP), 23 (79.3%) of which had also a concomitant low trough level of the drug. There were no significant differences in the frequency of ADAb formation between the pathologies. In the AS group, antibodies to CZP were detected in all patients with a low level of the biologic, while only in 25% of patients receiving ADM, a low level was associated with the formation of ADAb (p=0.019). In addition, among patients with AS, ADAb were detected only in those patients who did not take prednisone at the time of blood serum sampling (100% vs 37.9%, p=0.037).

Conclusion: Low level of TNFi is more common in RD than in IBD. For each group, the factors associated with a low trough level of TNFi were identified. There were no significant differences in the frequency of ADAb formation between nosologies.

REFERENCES:

- [1] Steenholdt C, Bendtzen K, Brynskov J, et al. Cut-off levels and diagnostic accuracy of infliximab trough levels and anti-infliximab antibodies in Crohn's disease. *Scand J Gastroenterol* 2011; 46: 310–318.
- [2] Bartelds GM, Krieckaert CL, Nurmohamed MT, van Schouwenburg PA, Lems WF, Twisk JW, Dijkmans BA, Aarden L, Wolbink GJ. Development of antidrug antibodies against adalimumab and association with disease activity and treatment failure during long-term follow-up. *JAMA*. 2011;305:1460–1468. doi: 10.1001/jama.2011.406.
- [3] Gehin, J.E., Goll, G.L., Warren, D.J. et al. Associations between certolizumab pegol serum levels, anti-drug antibodies and treatment response in patients with inflammatory joint diseases: data from the NOR-DMARD study. *Arthritis Res Ther* 21, 256 (2019). <https://doi.org/10.1186/s13075-019-2009-5>

Disclosure of Interests: Tatiana Nuriakhmetova Grant/research support from: A grant to purchase reagents for scientific research from Novartis Pharmaceuticals,

Ildariya Khairullovna Valeeva: None declared., Jana Shevnina: None declared., Diana Abdulganieva: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4006

AB0485

DOES THE REASON OF DISCONTINUATION OF THE FIRST TNF INHIBITOR INFLUENCE THE RESPONSE TO THE SECOND TNF INHIBITOR IN SPONDYLOARTHRITIS? PILOT STUDY FROM THE MOROCCAN RBSMR REGISTRY

T. Fatima Zahrae¹, T. Latifa², H. Rkain², I. Hmamouchi², L. Achemlal², I. El Bouchti³, A. Elmaghraoui², I. Ghoulani⁴, H. Hassikou⁵, T. Harzy⁶, L. Ichchou⁷, O. Mkinsi⁸, R. Niamane⁹, R. Bahiri², F. Allali². ¹Faculty of Medicine and Pharmacy of Tangier, Adelmalek Essaadi University, Rheumatology, Tangier, Morocco; ²Faculty of Medicine and Pharmacy of Rabat, Mohammed V University, Rheumatology, Rabat, Morocco; ³Arazi University Hospital, Rheumatology, Marrakech, Morocco; ⁴University Hospital of Agadir, Rheumatology, Agadir, Morocco; ⁵Military Hospital Moulay Ismail, Hassan II University Hospital, Rheumatology, Meknes, Morocco; ⁶Hassan II University Hospital, Rheumatology, Fez, Morocco; ⁷Mohammed VI University Hospital, Rheumatology, Oujda, Morocco; ⁸Ibn Rochd University Hospital, Rheumatology, Casablanca, Morocco; ⁹Military Hospital Avicenne, Mohammed VI University Hospital, Rheumatology, Marrakech, Morocco

Background: In rheumatoid arthritis, studies have shown that the response to a second TNF inhibitor is better if the first TNF inhibitor was stopped for a secondary failure or adverse event compared to a primary failure [1,2]. However, few studies have provided evidence regarding the response to a second TNF inhibitor based on the reason for discontinuation of the first TNF inhibitor in patients with a diagnostic of spondyloarthritis (SpA).

Objectives: To evaluate the efficacy of the 2nd TNF inhibitor in real life from a cohort of patients with SpA from the Moroccan registry of biological therapies in rheumatic diseases (RBSMR Registry), according to the reason for discontinuation of the 1st TNF inhibitor.

Methods: We have included from the RBSMR Registry any patient with a diagnosis of SpA starting a 2nd TNF inhibitor on inclusion in the registry or during the 1st year of follow-up. A descriptive study was conducted by measuring the therapeutic maintenance of the 2nd TNF inhibitor as well as the disease activity in different groups of patients according to the reason for stopping the first TNF inhibitor: stopping for ineffectiveness, side effect or non-availability of the drug.

Results: Of the total 194 patients with SpA included in the RBSMR registry, 40 patients were on their 2nd TNF inhibitor at one year follow-up. The mean age of the patients was 43.6 ± 15.1 with a male predominance (57.5%) and a mean of disease duration of 13.75 ± 6.95 years. At 1 year, treatment was maintained in 72.5% of all patients: 100% after ineffectiveness, 82% after discontinuation for side effects and 52.9% for unavailability of the first TNF inhibitor. Moderate disease activity as defined by an Ankylosing Spondylitis Disease Activity Score using ASDAS-CRP <2.1 was achieved at 1 year in 75%, 64.7% and 52.9% respectively in patients who stopped their first TNF inhibitor for side effects, ineffectiveness or unavailability of treatment.

Conclusion: This pilot study gives us a small insight into the fate and efficacy of the 2nd TNF inhibitor based on the reason for discontinuation of the first. The follow-up data at 2 and 3 years will allow us to include more patients and thus be able to do a real statistical study with a comparison between the different groups.

REFERENCES:

- [1] Remy A, Avouac J, Gossec L, Combe B. Clinical relevance of switching to a second tumour necrosis factor- α inhibitor after discontinuation of a first tumour necrosis factor- α inhibitor in rheumatoid arthritis: a systematic literature review and meta-analysis. *Clin Exp Rheumatol*. 2011;29:96–103.
- [2] Chatzidionysiou K, Askling J, Eriksson J, Kristensen LE, van Vollenhoven R, ARTIS group. Effectiveness of TNF inhibitor switch in RA: results from the national Swedish register. *Ann Rheum Dis*. 2015;74:890–6.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4104

AB0486

ONE-YEAR DIRECT COSTS OF BIOLOGICAL THERAPY IN ANKYLOSING SPONDYLITIS AND ITS PREDICTIVE FACTORS: DATA FROM THE MOROCCAN RBSMR REGISTRY

S. Bahloul¹, H. Rkain², S. Fellous², S. Ahid³, R. Abouqal⁴, T. Latifa², I. Hmamouchi⁵, L. Achemlal⁶, I. El Bouchti⁷, A. EL Maghraoui⁸, I. Ghoulani⁹, H. Hassikou⁹, T. Harzy¹⁰, I. Linda¹¹, O. Mkinsi¹², R. Niamane¹³, R. Bahiri², F. Allali². ¹El Ayachi Hospital, Rheumatology, Salé, Morocco; ²El Ayachi Hospital, Rheumatology, salé, Morocco; ³Mohamed 5 university, Pharmacoeconomic - pharmaco epidemiology Laboratory, RABAT, Morocco; ⁴Mohamed 5 university, laboratory of biostatistical clinical and epidemiological research,

RABAT, Morocco; ⁵Provincial hospital of temara, Rheumatology, Temara, Morocco; ⁶military hospital Mohamed 5, Rheumatology, RABAT, Morocco; ⁷Razi university Hospital, Rheumatology, Marrakech, Morocco; ⁸university hospital, Rheumatology, agadir, Morocco; ⁹military hospital moulay ismail, Rheumatology, Meknes, Morocco; ¹⁰Hassan II university hospital, Rheumatology, Fes, Morocco; ¹¹Mohamed 5 university, Rheumatology, OUJDA, Morocco; ¹²Ibn Rochd university Hospital, Rheumatology, Casablanca, Morocco; ¹³military hospital avicenne, Rheumatology, Marrakech, Morocco

Background: NA

Objectives: To estimate the annual direct costs of biological therapies in Spondyloarthropathies (SpA) and to establish possible factors associated with those costs.

Methods: The main data source was the Moroccan registry of biological therapies in rheumatic diseases (RBSMR). We included SpA patients with available 1-year data. Variables related to socioeconomic status, disease and biological therapy were collected. Differences in costs across groups were tested by Mann–Whitney and Kruskal–Wallis tests. Correlations analysis was performed in search of factors associated with high costs.

Results: We included 89 SpA patients. The mean age was 40.6 ± 13.6 years, with male predominance 68.9 %. Patients received one of the following therapies: TNF-blockers (n =79), Biosimilar of TNF-blockers (n =8) and IL17-blockers (n =2). Median one-year biologic costs per patient were 9 569, 39 €. The total annual of biotherapies in AS patients was 851 675, 98 €.

Figure 1 Annual mean drug costs per treated patient (€: Euro)

The costs are presented in Euro using an exchange rate of (1 Moroccan Dirham = 0.091Euro).

TNF-blockers constituted 95 % of the total annual budget. Biosimilar of TNF-blockers and IL17-blockers represented 3 % and 2 % of this overall budget, respectively. Although the costs were not significantly different in terms of gender or level of study, the insurance type significantly affected the cost estimation.

No correlation was found between the annual direct costs of biotherapies and body mass index nor with BASFI or BASDAI.

Conclusion: In Morocco, a developing country, the annual direct costs of biological therapies are high in AS patients. Our results may contribute to the development of strategies for better governance of these costs.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4117

Spondyloarthritis - clinical aspects (other than treatment)

AB0487

HEPSIDINE LEVEL IN PATIENTS WITH ANKYLOSING SPONDYLITIS, RELATIONSHIP WITH HEMOPOESIS AND FERROKINETICS

O. Zviahina¹, S. Shevchuk¹. ¹National Pirogov Memorial Medical University, Vinnytsya, Internal Medicine Chair # 2, Vinnytsya, Ukraine

Background: Hypofermia, as a manifestation of systemic inflammation, is quite common in patients with ankylosing spondylitis (AS). Anemic syndrome can be represented by anemia of chronic disease (ACD), iron deficiency anemia (IDA) and their combination. Its frequency of occurrences ranges from 18.5 to 45.8 %. The discovery of the hormone hepcidin in 2001 changed the perception of iron metabolism disorders and demonstrated its association with the inflammatory component. Over the last decade, scientific databases have accumulated a lot