Figure:

	Gender	Age at onset of initial disease (median, range)	Presenting symptoms	Bilateral	Laboratory Markers, (median)	Extracranial muscle involvement	Optic nerve involvement	Localized gland involvement	Retinopathy involvement
Idiopathic inflammatory pseudotumor (n=16)	F/M:13/3	35 (19-71)	Swelling (n=6), Pain (n=4), Erythema (n=5), Vision loss (n=2), Diagnosis (n=2)	n=5 (31.2%)	ESR: 18 (2-60) CRP: 0.4 (0.1-4.6)	11 (68.7%) LDM (n=10), MDM (n=1) SDM (n=1), SOM (n=3)	4 (25.0%)	5 (31.2%)	2 (12.5%)
SpA-related disease (n=13)	F/M:10/3	40 (21-59)	Swelling (n=5), Pain (n=4), Purpura (n=4), Pain (n=1), Vision loss (n=1), Blurred Vision (n=1)	n=3 (23.1%)	ESR: 14 (2-29) mm/h CRP: 0.4 (0.1-5.4) mg/dL dIgM level: 420 (122-3790)	7 (53.8%) LDM (n=4), MDM (n=3) SDM (n=1), SOM (n=2) IDM (n=1), SOM (n=2)	4 (30.8%)	7 (53.8%)	3 (23.1%)
GPA (n=7)	F/M:3/4	44 (5-64)	Swelling (n=2), Pain (n=2), Vision loss (n=1), Diagnosis (n=1)	n=3 (42.9%)	ESR: 41 (7-108) mm/h CRP: 1.5 (0.2-29) mg/dL ANCA (n=6, 85.7% +)	6 (85.7%) LDM (n=4), MDM (n=4) SDM (n=1), SOM (n=1)	4 (57.1%)	6 (85.7%)	1 (14.3%)
Thyroid-associated orbitopathy (n=1)	M	54	Pain, proptosis	Unilateral	ESR Normal ESR: 13 mm/h CRP: 0.3 mg/dL	LDM/MDM/SDM	-	+	+
Sjögren's syndrome (n=1)	M	49	Pain, swelling	Unilateral	ANA (+), ESR Normal ESR: 10 mm/h CRP: 0.3 mg/dL	-	-	+	+
Relapsing polychondritis (n=1)	M	47	Pain, swelling	Unilateral	ESR 47 mm/h CRP: 10 mg/dL	LDM	+	+	+
Fungal granulomatous angitis (n=1)	F	75	Pain, erythema vision loss	Unilateral	ESR: 17 mm/h CRP: 12 mg/dL	SDM/IDM/SDM	+	+	+

GPA: Granulomatosis with polyangiitis; ESR: Erythrocyte sedimentation rate; CRP: c-reactive protein; ANCA: Anti-neutrophil cytoplasmic antibody; ANCA: Anti-neutrophil cytoplasmic antibody; ANCA: Anti-neutrophil cytoplasmic antibody; ANCA: Anti-neutrophil cytoplasmic antibody.

Disclosure of Interests: Melek Seren Aksun: None declared, Taha Koray Sahin: None declared, Ertugrul Cagri Bolek: None declared, Levent Kılıç: None declared, Elif Günay Bulut: None declared, Kader Karlı Oğuz: None declared, Umut Kalyoncu Consultant of: Abbvie, Amgen, Janssen, Lilly, Novartis, UCB, Omer Karadag: None declared

DOI: 10.1136/annrheumdis-2020-eular.6446

AB1039

LL-37, IL-36, GALECTIN-3 AND TLR-3 LEVELS IN IDIOPATHIC GRANULOMATOUS MASTITIS

U. Aydin¹, B. Oz², A. Karatas², M. Gur², R. Piskin Sagir², G. Artas³, S. Aydin⁴, S. S. Koca². ¹Firat University, Rheumatology, Elazığ, Turkey; ²Firat University, Rheumatology, Elazığ, Turkey; ³Firat University, Pathology, Elazığ, Turkey; ⁴Firat University, Biochemistry and Clinical Biochemistry (Firat Hormones Research Group), Elazığ, Turkey

Background: Idiopathic granulomatous mastitis (IGM) is a non-infectious inflammatory disorder of the breast characterized by non-caseous granulomas. It is a chronic granulomatous inflammatory disease frequently seen in young fertile women, the cause of which has not been clearly understood. Immunosuppressive agents and surgical interventions are used in the treatment.

LL-37 is a cathelicidin-derived antimicrobial peptide with immunomodulatory properties that are effective in innate immunity. In addition, IL-36, galectin-3, TLR-3 are effective in autoimmunity with proinflammatory properties.

Objectives: With this study, we aimed to investigate the potential alterations of LL-37, IL 36, Galectin 3 and TLR-3 levels in IGM.

Methods: 35 female patients with biopsy-confirmed IGM and 35 healthy controls were included in the study. The serum samples of the subjects LL-37, IL 36, Galectin 3 and TLR-3 levels were studied using the Elisa method. While studying LL 37 and Galectin 3 levels in the tissue, samples of 10 patients who underwent mastoplastic for cosmetic reasons were used for the control group. Ten patients whose paraffin blocks were eligible for re-study were included in the study for tissue examinations. Based on the prevalence (0.1: <25%, 0.4: 26-50%, 0.6: 51-75%, 0.9: 76-100) and

severity (0: no, +0.5: very little, +1: little, +2: medium, +3: severe) of immunoreactivity in staining, histoscore was created (histoscores = prevalence x severity). The data were evaluated using appropriate statistical analysis and p < 0.05 was considered statistically significant.

Results: When the patient and control groups included in the study were compared, there was no significant difference in age. In serum samples, LL 37, IL 36, Galectin 3 and TLR 3 levels were statistically significantly lower in IGM group compared to the control group (p < 0.001 for each) (Table-1). In biopsy samples, LL 37 level was found to be significantly lower in IGM group compared to the control group (p < 0.001). However, no significant difference was detected in Galectin 3 levels in tissue studies (Table-2).

Conclusion: In our study, we found that the levels of LL 37, IL 36, Galectin 3 and TLR 3 decreased in serum samples in IGM disease whose etiology was not clearly understood. In addition, we showed that in patients with IGM, LL 37 levels decreased at the tissue level. Studies have shown that in cases of severe sarcoidosis, LL 37 deficiency is reduced both in level and gene expression. So they thought, deficiency of cathelicidin LL 37 may impede resolution of inflammation in the tissue of patients with severe form disease.

References:

- [1] Barna, Barbara P et al. "Alveolar macrophage cathelicidin deficiency in severe sarcoidosis." *Journal of innate immunity* vol. 4,5-6 (2012): 569-78.
- [2] Al-Khaffaf, Bilal et al. "Idiopathic granulomatous mastitis: a 25-year experience." *Journal of the American College of Surgeons* vol. 206,2 (2008): 269-73.

Table 1. LL 37, IL 36, Galectin 3 and TLR 3 levels in serum samples

	IGM (N:35)	CONTROL (N:35)	P
Age	35,92 ± 5,19	34,03 ± 3,81	0,08
LL 37 (ng/ml)	5,20 ± 5,48	40,05 ± 31,97	<0,001
IL 36 (pg/ml)	294,74 ± 125,94	864,71 ± 442,39	<0,001
Galectin 3 (ng/ml)	3,61 ± 3,16	15,53 ± 10,14	<0,001
TLR 3 (pg/ml)	931,49 ± 443,86	4019,36 ± 2599,51	<0,001

IGM: Idiopathic granulomatous mastitis

Table 2. Evaluation of LL-37 and Galectin 3 levels with histoscores in biopsy samples

	IGM (N:10)	CONTROL (N:10)	P
LL 37	0,006 ± 0,025	0,140 ± 0,516	<0,001
Galectin 3	0,293 ± 0,201	0,400 ± 0,290	0,32

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.5806

AB1040

COEXISTENCE OF DEMYELINATION DISEASE AND FAMILIAL MEDITERRANEAN FEVER

C. Korkmaz¹, D. Üsküdar Cansu¹, S. Canbaz Kabay². ¹Eskişehir Osmangazi University, Eskişehir, Turkey, Department of Internal Medicine, Division of Rheumatology, Eskişehir, Turkey; ²Kütahya Dumlupınar University, Kütahya, Turkey, Neurology, Kütahya, Turkey

Table 1. Some clinical and laboratory features of patients with FMF or MEFV mutations accompanied by demyelination disease

Cases	Age/Sex	Diseases	MEFV mutations	The onset age/ diagnostic age for FMF	The onset age for DD/MS/ Presenting manifestations/MRI findings	Treatment for FMF / DD/MS
Case 1 (F1)	17/F	FMF+DD	M694V homozygous	3/5	15 OB (-) Fusiform plaques in the cingulate gyrus; plaques in T4-6	Colchicine IL-1 RA Glatiramer acetate
Case 2 (F1)	46/F	FMF+MS	M694V homozygous	8/9	28 Optic nerve involvement OB(+) Plaques (+)	Colchicine Glatiramer acetate
Case 3 (F1)	17/F	FMF+MS	M694V heterozygous	3/5	15 Loss of the right eye, vertigo OB(+) Plaques	Colchicine Pulse steroid Beta-interferon Teriflunomide
Case 4 (F2)	36/F	MS+MEFV mutation	M694V/R202Q	-	27 Headache, blurred vision, optic nerve atrophy OB(+) Plaques (+)	Glatiramer acetate
Case 5 (F2)	16/F	MS?+FMF+Cutaneous vasculitis	M694V/R202Q	16/16	11 Headache, blurred vision No LP (denied by pt) Plaques	-

F: Female, F1: Family 1, F2: Family 2; DD: Demyelination disease; MS: Multiple sclerosis; MRI: Magnetic resonance imaging; OB: Oligoclonal band; LP: Lumbar puncture

Background: In the course of familial Mediterranean fever (FMF), the frequency of other inflammatory diseases increases compared to the general population. Multiple sclerosis (MS) or demyelinating diseases (DD) of central nervous system (CNS) are also more common in FMF patients than in the general population.

Objectives: In this study, we would like to report 5 cases with MS/DD accompanied by FMF or MEFV mutations in two families.

Methods: 4 patients with FMF and 1 patient with MEFV mutation were included in this study. The patients with FMF were diagnosed according to Tell-Hashomer clinical criteria for FMF. The diagnosis of MS was made according to McDonald criteria.

Results: The clinical features of the patients were shown in Table 1.

Conclusion: FMF and MS/DD are characterized by repetitive attacks. Familial association can be seen in 12% of patients with MS (1). This is related to both HLA and non-HLA-related genetic tendency. The probability of developing MS increased 4 times in FMF patients (2). This seems to be related to the presence of MEFV gene creating a pro-inflammatory background. In such family samples, combining HLA and non-HLA gene related studies with MEFV gene analysis will be useful in common genetic factors investigation.

References:

- [1] Harirchian MH, Fatehi F, Sarraf P, Honarvar NM, Bitarafan S. Worldwide prevalence of familial multiple sclerosis: A systematic review and meta-analysis. *Mult Scler Relat Disord*. 2018;20:43-47.
- [2] Akman-Demir G, Gül A, Gürol E, Özdoğan H, Bahar S, et al. Inflammatory/demyelinating central nervous system involvement in familial Mediterranean fever (FMF): coincidence or association? *J Neurol* 2006;253:928-934.

Acknowledgments: None

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.6273

AB1041

BIOLOGICS IN ADULT'S ONSET STILL'S DISEASE: TREATMENT STRATEGIES AND SAFETY IN SINGLE CENTER COHORT WITH LONG-TERM FOLLOW-UP

N. Kougkas¹, N. Avgustidis¹, S. Pitsigavdaki¹, K. Pateromichelaki¹, A. Repa¹, A. Molla Ismail Sali¹, A. Eskitzis¹, G. Bertias¹. ¹University Hospital of Heraklion, *Rheumatology, Clinical Immunology and Allergy, Heraklion, Greece*

Background: Adult-onset Still's disease (AOSD) is a rare systemic inflammatory disorder. In recent years biological disease modifying antirheumatic drugs (bDMARDs) are becoming increasingly important for its treatment.

Objectives: To evaluate disease outcomes, treatment strategies and their long-term safety in a cohort of AOSD patients treated with bDMARDs.

Methods: A single-center retrospective study of patients diagnosed with AOSD until 2019 was conducted. Patients were included if they: a) were 16 years old or older, b) met the Yamaguchi criteria and c) had received a bDMARD. Demographics, clinical and laboratory parameters were collected at the time of diagnosis.

Data regarding treatment lines included: the previous and concomitant conventional disease modifying antirheumatic drugs (cDMARDs), the type of initial bDMARD, switches, survival and corticosteroids discontinuation. Adverse events related to treatment and disease outcomes including death and amyloidosis were also recorded.

Results: Sixteen patients with AOSD (Table 1) refractory to cDMARDs were administered biologics. The median duration of follow-up was 14 years (range 1-24). Consistent with recent literature¹, two distinct disease patterns were recognized: the systemic form (SF) and the chronic articular form (CAF). In the SF the leading clinical symptoms were fever, pericarditis and pleuritis. In CAF the leading clinical symptom was persistent RA-like arthritis.

Table 1. Summary of patient characteristics at the time of diagnosis

Characteristics	Results
Age at the time of diagnosis median, (range) years	32.5 (18-64)
Sex (N)	11 female, 5 male
Fever	14 (87.5%)
Rash	8 (50%)
Lymphadenopathy	2 (12.5%)
Arthritis	15 (93.75%)
Pleuritis	7 (43.7%)
Pericarditis	9 (56.25%)
Hepatosplenomegaly	2 (12.5%)
Elevated liver enzymes	2 (12.5%)
Hyperferritinaemia	4 (25%)

Patients with the SF were treated with anakinra (n=4), tocilizumab (TCZ; n=3), canakinumab (n=1) and anti-TNFa (1 adalimumab, 1 etanercept) (n=2). Patients

Table 2. Disease and treatment characteristics of 2 discrete phenotypes (Systemic and Chronic articular)

	Systemic form	Chronic articular form	Total
Patients (n)	10	6	16
Duration of follow-up (years), median (range)	13 (3-24)	14 (1-14)	14 (1-24)
Duration of disease prior to bDMARDs (months)	7.5 (2-120)	21 (3-36)	10.5 (2-120)
Number of cDMARDs prior to bDMARDs	2 (1-2)	1 (1-4)	2 (1-4)
Patients on concomitant cDMARDs, n (n/N%)	10 (100%)	6 (100%)	16 (100%)
Type of 1 st bDMARD (n)	3 TCZ, 2 anti-TNFa, 4 Anakinra, 1 Canakinumab	4 anti-TNFa, 2 TCZ	
Patients on bDMARD at the end of follow-up (n/N%)	6 (60%)	6 (100%)	12 (75%)
Time to steroids discontinuation after bDMARD initiation (months)	7.5 (2-22)	4.5 (3-36)	6.5 (2-36)

with the CAF received anti-TNFa (3 infliximab, 1 etanercept) (n=4) and TCZ (n=2). The median time from biologic initiation to corticosteroids discontinuation was 6.5 months, (range 2-32), (Table 2). 9 patients (56.25%) remained on treatment with the initial bDMARD, 4 patients (25%) received treatment with two and 3 patients (18.75%) with ≥ 3 bDMARDs. All patients with the CAF were on bDMARD at the end of follow-up, while 4/10 patients (40%) with the SF discontinued it. During follow-up only one serious adverse event was attributed to bDMARD (allergic reaction to infliximab infusion). There were no cases of amyloidosis or deaths.

Conclusion: Dichotomous phenotype in AOSD can determine treatment strategy for initial biologic treatment. Inhibition of IL-1 and IL-6 was the preferred therapeutic option for systemic form while inhibition of TNF and IL-6 was the preferred option for the chronic articular form. All of the above bDMARDs have favorable long-term safety profile in patients with AOSD.

References:

- [1] François Vercruysse et al. Adult-onset Still's disease biological treatment strategy may depend on the phenotypic dichotomy Arthritis Research & Therapy. 2019

Disclosure of Interests: Nikolaos Kougkas: None declared, Nestor Avgustidis: None declared, Sofia Pitsigavdaki: None declared, Katerina Pateromichelaki: None declared, ARGYRO REPA: None declared, Ainour Molla Ismail Sali: None declared, Anastasios Eskitzis: None declared, George Bertias Grant/research support from: GSK, Consultant of: Novartis

DOI: 10.1136/annrheumdis-2020-eular.4120

AB1042

ASSESSMENT OF BONE MINERAL DENSITY AND FREQUENCY FRACTURES PERIPHERAL SKELETON BONES IN PATIENTS WITH ALKAPTONURIA

A. Kuzin^{1,2}, A. Smirnov², E. Zaytseva¹, D. Kudinskiy², L. Blank², E. Dolzhenkova³, N. Politova⁴. ¹Russian Medical Academy of Continuous Professional Education, Moscow, Russian Federation; ²V.A. Nasonova Research Institute of Rheumatology, Moscow, Russian Federation; ³Ryazan Regional Clinical Hospital, Ryazan, Russian Federation; ⁴Kirov State Medical University, Kirov, Russian Federation

Background:

Objectives: To assess the bone mineral density (BMD) of the skeleton using the Hologic Discovery A DXA, determine the frequency of low-energy skeletal bone fractures among adult patients with alkaptonuria (AKU), and identify factors that affect the occurrence of fractures.

Methods: AKU is a rare genetic disease (1 case per 250,000) which occur to severe damage to the spine and large joints. Serious problem in this category of patients is a decrease in BMD. The study included 40 patients with a reliable diagnosis of AKU (23 men and 17 women) aged from 33 to 78 years (mean 60.32±9.1). Densitometry of the lumbar spine was performed in 40 patients; of the forearm bones in 34 patients; of the proximal femur in 32 patients (8 patients were not examined due to bilateral hip joint replacement).

Results: Normal values of spinal BMD were found in 26 patients (65%), osteopenia – in 12 (30%) and osteoporosis – in 2 (5%) patients. In the proximal parts of the femur, osteoporosis was detected in 12 patients (30%), osteopenia in 13 (32.5%), and normal in 7 (17.5%) patients. In the bones of the forearm,