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AB0822 BREASTFEEDING AMONG WOMEN WITH RHEUMATIC DISEASES: ANALYSIS OF DATA FROM THE P-RHEUM.IT STUDY

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Background: The World Health Organization recommends that infants should be exclusively breastfed until the age of 6 months. The aim of this study was to assess the ratio of breastfeeding patients with Rheumatic Diseases (RD) and to identify possible causes of its discontinuation.

Objectives: The aim of this study was to assess the ratio of breastfeeding patients with Rheumatic Diseases (RD) and to identify possible causes of its discontinuation.

Methods: This study was embedded in the P-RHEUM.it register, as a nationwide prospective cohort study collecting data of pregnancies in inflammatory RD. Pregnancies, enrolled until the 20th week of pregnancy, are followed from pregnancy until 6 months postpartum. At baseline, sociodemographic parameters, obstetric history, comorbidities are reported. During pregnancy, the course of maternal disease, development of foetus and complications are reported. After delivery, the pregnancy outcome, data on lactation and child development are collected.

Results: From May 2018 to May 2020 data of 349 patients were available. Data on lactation were available in 44 pregnancies. Two months after delivery 37 were continuing breastfeeding (n=26) or mixed feeding (n=11), while 7 were using formula feeding. Among patients using formula feeding 2 had a diagnosis of rheumatoid arthritis (RA), 1 of juvenile idiopathic arthritis, 1 of undifferentiated arthritis (UA), 1 of anti-phospholipid syndrome (APS), 1 of vasculitis and 1 of systemic lupus erythematosus. The reasons of formula feeding were the following: 2 for agalactia, 2 for personal preferences, 3 for drug-related concerns (1 for physician's decision in a patient with APS; 2 for maternal concerns about drugs in patients with RA and UA treated respectively with Adalimumab and Tocilizumab). At 6 months 30 continued breastfeeding (n=23) or mixed feeding (n=7) and 14 formula feeding. The reasons of formula feeding were available in 9 patients: 3 for agalactia, 2 for personal preferences, 2 for physician's decision in a patient with APS and in a patient positive for anti-phospholipid antibodies; 2 for maternal concerns about drugs.

Conclusion: Preliminary data of this prospective study demonstrate a high percentage of breastfeeding/mixed feeding after delivery and after 6 months among women with RD. Drug related concerns are the main reason of discontinuation of breastfeeding, although medication results compatible with lactation. Using our results, strategies supporting patients with RD wishing to breastfeed may be developed.

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AB0823 TREATMENT WITH ADALIMUMAB IN PATIENTS WITH CHRONIC INFLAMMATORY RHEUMATIC DISEASES: A STUDY OF TREATMENT TRAJECTORIES ON A PATIENT LEVEL IN CLINICAL PRACTICE

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Background: There is evidence that drug retention rates to adalimumab (ADA) in patients (pts.) with chronic inflammatory rheumatic diseases (CIRD) are impaired by loss of efficacy and adverse events, and that about 50% of users had discontinued ADA within 5 years (1). With the introduction of ADA biosimilars in October 2018, non-medical switching from originator to ADA biosimilars is now increasingly part of daily practice in rheumatologic care.

Objectives: The aim was to study treatment trajectories over two years in pts. with CIRD receiving originator ADA.

Methods: Pts. with CIRD on originator ADA who switched to ADA biosimilar from October 2018 onwards were identified and followed until 2020. Disease activity (ASDAS), physical function (HAQ, BASFI), and changes in treatment were documented every 3 months. The four predefined treatment trajectories "continued ADA biosimilar therapy", "back-switch to originator ADA therapy", "switch to other biological (b) disease modifying anti-rheumatic drug (DMARD) therapy", and "stopped bDMARD therapy/death/drop out" were used to compare characteristics of pts. with different trajectories.

Results: A total of 111 CIRD pts. on treatment with originator ADA were switched to ADA biosimilar (Table 1). The majority of pts. 75 continued therapy with ADA biosimilar (Figure 1 next page) while 16% switched back to originator ADA, 7% switched to a different bDMARD, and 9% either stopped treatment (n=9) or died (n=1). Pts. who continued ADA biosimilar were more frequently male, older or with a longer disease duration than those who switched therapy back to originator ADA and those who switched to a different bDMARD (Table 1). The previous duration on originator ADA treatment was increased in patients who continued ADA biosimilar compared to those who switched therapy back to originator ADA and those who switched to a different bDMARD. There was more functional impairment (HAQ, BASFI) and higher disease activity (ASDAS) in pts. who switched compared to those who continued ADA biosimilar therapy (Table 1). Treatment with csDMARDs and glucocorticoids was increased in pts. who continued ADA biosimilar therapy, while pts. who switched therapy had more previous bDMARD therapies (Table 1).

Table 1. Characteristics of patients at baseline for the entire group and stratified by treatment trajectory

	Total group N=111 (100%)	Treatment trajectory			
		continued ADA biosim- ilar therapy N=75 (67.6%)	back-switch to originator ADA therapy N=18 (16.2%)	switch to different bDMARD therapy N=8 (7.2%)	no bDMARD therapy / death / drop out N=10 (9.0%)
Age, y	51.2 (14.5)	51.5 (13.6)	50.6 (16.8)	43.5 (9.5)	56.4 (19.0)
Women, No. (%)	46 (41.4)	27 (36.0)	9 (50.0)	6 (75.0)	4 (40.0)
RA	23 (20.7)	17 (22.7)	2 (11.1)	1 (12.5)	3 (30.0)
axSpA	68 (61.3)	47 (62.7)	11 (61.1)	6 (75.0)	4 (40.0)
PsA	15 (13.5)	7 (9.3)	4 (22.2)	1 (12.5)	3 (30.0)
Other diagnoses	5 (4.5)	4 (5.3)	1 (5.6)	0 (0.0)	0 (0.0)
Disease duration, median (IQR), y	5.0 (2.0-8.0)	5.0 (2.0-9.0)	3.5 (2.0-6.0)	2.0 (1.0-5.5)	4.5 (2.0-8.0)
Duration previous originator ADA therapy	40.7 (27.7)	45.3 (27.8)	35.0 (25.2)	20.3 (24.7)	32.3 (25.1)
DAS28	3.0 (1.0)	2.9 (1.0)	3.4 (1.0)	-	3.3 (1.2)
CRP, median (IQR), mg/L	0.2 (0.1-0.3)	0.1 (0.1-0.2)	0.2 (0.0-0.5)	0.2 (0.2-1.3)	0.3 (0.2-0.4)
HAQ score	1.3 (0.8)	1.1 (0.7)	1.7 (0.8)	-	1.8 (1.0)
ASDAS	2.2 (1.1)	2.0 (1.0)	3.0 (1.2)	2.7 (0.9)	2.3 (0.2)
BASFI	3.5 (2.6)	3.0 (2.5)	5.4 (2.4)	3.4 (1.6)	5.4 (1.6)

+values are given as mean (SD)

Conclusion: Two thirds of pts. who switched to ADA biosimilar remained on this therapy for 2 years. As many as 16% of pts. switched back to ADA originator. Whether or to what degree this was influenced by nocebo effects needs further

study. The same is true for the effect of functional impairment – it would be interesting to know whether this was due to inflammation or structural damage.

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Figure 1. Treatment trajectories of ADA therapy in patients with CIRD during two years ADA: adalimumab; bDMARD: biological disease modifying anti-rheumatic drug.

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AB0824

ANALYSIS OF GUT MICROBIOTA IN RHEUMATOID ARTHRITIS PATIENTS

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Background: Gastrointestinal microbiota, particularly gut microbiota is an indispensable environmental factor in the progression of Rheumatoid Arthritis (RA). Understanding the diversity and function of the intestinal flora in patients with RA is part and parcel to understand the relationship between microbiota and human health.

Objectives: This study aimed to identify the diversity and function of the intestinal flora in patients with RA.

Methods: A total of 166 participants were recruited in this study, comprising 93 RA patients and 73 age and sex-matched healthy controls (HCs). Microbial genome was extracted from approximately 250mg fresh fecal samples from all participants using QIAamp PowerFecal DNA Kit (Qiagen). The V3-V4 variable regions of bacterial 16S rRNA genes were sequenced with the Illumina Miseq PE300 system. Sequence data were compiled and processed using Qiime2. Sequences were grouped into operational taxonomic units (ASVs)¹. Microbial diversity was estimated by the Simpson index. PICRUST2 was used to predict KEGG functional pathway differences between RA and HC intestinal flora functions based on ASV Tables². Linear Discriminant Analysis (LDA) Effect Size (LEfSe) analysis was performed using LEfSe software to discover the different intestinal flora and functions between RA and healthy.

Results: The alpha-diversity index of Simpson the microbiome in RA patients was lower than that of HCs (Figure 1a, $P < 0.05$). Compared with HCs, bacterial Bacilli and Lactobacillales were more abundant in patients with RA (Figure 1b, $P < 0.05$). In contrast, Marinifilaceae, Peptococcaceae, Peptococcales and Phascolarcto bacterium were less abundant in the RA group (Figure 1b, $P < 0.05$). As shown in Figure 1c, propanoate metabolism, taurine and hypotaurine metabolism, ascorbate and aldarate metabolism, biosynthesis of siderophore group nonribosomal peptides and glutathione metabolism were the most significantly altered pathways in RA ($P < 0.05$). Epithelial cell signaling in *Helicobacter pylori* infection, RNA transport, RNA degradation and plant-pathogen interaction were the most significantly altered pathways in HC ($P < 0.05$). The different KEGG

metabolic pathways were mainly concentrated in carbohydrate and amino acid metabolism.

Conclusion: Gut dysbiosis in RA patients mainly characterized by reduced the diversity and impaired abundance of the intestinal flora, which severely influence the metabolism of gastrointestinal microbiota. The discovery of the associated intestinal microbiota of RA may provide a new idea for RA treatment.

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Figure 1 (a) Comparison of Simpson index between HC and RA groups was shown using boxplot. (b) LEfSe was used to detect difference in Flora functions according to RA and HC. Pathway differences plot as LDA score (log 10). Bars to the right of zero represent bacterial functions enriched in the RA, and bars to the left of zero represent bacterial functions in HC. * $P < 0.05$.

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AB0825

JAK2 (V617F) MUTATION AND ASSOCIATION TO IMMUNE MEDIATED DISEASES. STUDY OF 130 PATIENTS FROM A SINGLE UNIVERSITY HOSPITAL

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Background: Janus Kinases (JAK) are tyrosin-kinases that can promote cytokine production in immune and hematopoietic cells. The JAK-2 (V617F) mutation is the most frequently detected mutation in myeloproliferative neoplasms (MPN) which include essential thrombocythemia (ET), polycythemia vera (PV), primary myelofibrosis (PMF) and undifferentiated MPN. JAK-2 (V617F) mutation displays a pro-inflammatory phenotype that may be associated to a higher risk of immune mediated diseases (IMD), thromboembolic complications or other cancers (1-3).

Objectives: To evaluate the presence of a) IMID (rheumatic and non-rheumatic), b) cancer and, c) Deep vein thrombosis/ Venous thromboembolism (DVT/VTE) events in a cohort of patients with a positive JAK-2 (V617F) mutation.

Methods: We studied all the patients diagnosed with a positive JAK-2 (V617F) mutation in a single University Hospital between January, 2004 and December, 2019.

Results: The study included 130 patients (73 men/57 women; mean age, 70.1±14.5 years). They were diagnosed of ET (n=64, 49.2%), PV 46 (35.4%), undifferentiated MPN (n=12, 9.2%) and PMF (n=8, 6.1%). Of these patients, 54 (41.5 %) (44 non rheumatic and 10 rheumatic) were diagnosed with at least one IMID, 46 (35.4%) with other cancer different of MPN and 36 (27.7%) with DVT/VTE events. (Table 1/Figure 1).

Conclusion: Due to its prevalence and potential complications, IMID should be taken into consideration when a patient is diagnosed with a positive JAK-2 (V617F) mutation.

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