Figure 1 Course of physician assessed global disease activity

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AB0473 TREATMENT OF ANKYLOSING SPONDYLITIS (AS) DURING PREGNANCY

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Background: The use of medications during pregnancy remains a challenge for both rheumatologists and patients. The lack of compelling evidence of the safety of a line of different drugs, as well as the traditional idea of the incompatibility of therapy and gestation that is common view in Russia, lead to unjustified withdrawal of drugs by both pregnant women and rheumatologists.

Objectives: to describe the frequency of drug usage in pregnant women with AS, to determine the relationship of AS activity and pregnancy complications.

Methods: 49 pregnant women with confirmed AS (modified New York criteria, 1984) were included for prospective observation. 50 pregnancies in total were traced. The average age of the patients was 31.6±4.9 years, the duration of the disease was 134.4±85.8 months. The visits were conducted at 10-11, 20-21, and 31-32 weeks of pregnancy. The BASDAI in the month of conception and in the trimesters of pregnancy was: 1,4[0,6; 3,3]; 2,3[1,2; 4,4]; 2,8[1,4; 4,2] and 2,2[1,6; 4,0], respectively. 48 pregnancies ended with the birth of alive children at an average of 39±1.1 weeks, the height of newborns-51.6±2.1 cm, weight-3397.3±433.1 g. 8 (16.3%) newborns had malformations, 7 of them - minor heart development anomalies, 1 - hydronephrosis. Pregnancy complications: early toxicosis - 18% of pregnant women, threatening of early abortion - 10%, threatening of late abortion-4.1%, threatening of early preterm birth - 6.3%; premature birth - 3 (6.3%) at 36.8±0.1 weeks.

Results: NSAIDs. After inclusion in the study, the drug of choice was ibuprofen, which was canceled for all women no later than the 32-nd week of pregnancy. At the time of conception and in the first, second and third trimesters of pregnancy, NSAIDs were taken by 23 (46%), 20 (40%), 30 (60%) and 21 (43.8%) women, respectively. No effect of NSAIDs on the activity of AS was revealed.

Sulfasalazine (SS) was taken for 3 months before pregnancy by 11 (22%) women, during pregnancy - 6 (12%) at a dose of 1.25±0.25 g because of arthritis. The withdrawal of SS was not associated with the recurrence of arthritis.

Glucocorticoids (GC) at a dose of 7.5±2.5 mg 3 months before pregnancy and in the trimesters of pregnancy were taken: 1 (2%), 4 (8%), 8 (16%) and 10 (20.8%) women, of whom 1 patient had arthritis and 1 had inflammatory bowel disease. The remaining patients received GC due to the high activity of AS due to axial manifestations and the unavailability of bDMARDs) intake. Against the background of taking GC, the AS activity did not decrease: BASDAI in the 2nd and 3rd trimesters was 5.5±0.6 and 5.8±1.3 (p>0.05).

bDMARDs. TNF inhibitors for 3 months before pregnancy and on trimesters were received by 11 (22%), 7 (14%), 6 (12%) and 2 (4.2%) patients, of which 1 woman in the second trimester obtained firstly initiated therapy with certolizumab pegol due to the recurrence of uveitis. In those who canceled bDMARDs therapy (both independently and due to the recommendation of a rheumatologist), an increase in AS activity was noted on the eve of pregnancy; BASDAI in the month of conception and in the I, II, and III trimesters was: 2,7 [0,8; 3,5]; 5,1[3,1; 5,9]; 5,5 [5,6] and 6,7 [5,3; 7,3], p<0,05 compared to the month of conception. Undoing the bDMARDs in the month of conception is a risk factor for high activity as

(BASDAI>4) in the second trimester (OR OF 30.4; 95% CI 1,5-612,3; p=0.03) and in the third trimester (OR A 32.7; 95% CI 1,6-662,2; p=0.02).

The relationship between pregnancy complications, malformations of the newborns and the used medications was not revealed.

Conclusion: NSAIDs and GC in low doses do not reduce the activity of AS. Withdrawal of TNF inhibitors on the eve of pregnancy is a predictor of high AS activity. It is necessary to increase the knowledge of rheumatologists and patients about the therapeutic possibilities during pregnancy to avoid unjustified drug withdrawal.

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AB0474 THE USE OF NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS) IN WOMEN WITH ANKYLOSING SPONDYLITIS (AS) DURING PREGNANCY

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Background: NSAIDs remain the first-line drugs in treatment of AS. During pregnancy, COX-2 non-selective NSAIDs are allowed for intake up to 32 weeks, but the question of the dose-dependent effect of NSAIDs on fetal organogenesis in the 1st trimester and on fetal kidney function and the increased risk of bleeding in childbirth when taken in the second half of pregnancy continues to be discussed. At the same time, data on the effectiveness of NSAIDs, including their low and medium doses, during pregnancy are extremely small.

Objectives: to describe the frequency of using NSAIDs during pregnancy, to determine relationship between the dose of NSAIDs, adherence to therapy with the activity of AS.

Methods: 50 pregnancies were followed in 49 pregnant women with confirmed AS (modified New York criteria, 1984). The average age of the pts was 31.6 ± 4.9 years, the duration of the disease was 134.4 ± 85.8 months. The visits were conducted at 10-11, 20-21, and 31-32 weeks of pregnancy. The BASDAI in the month of conception and in the trimesters (trim.) of pregnancy was: 1,4[0,6; 3,3]; 2,3[1,2; 4,4]; 2,8[1,4; 4,2] and 2,2[1,6; 4,0], respectively. The level of nocturnal back pain according to the NRS in the first, second and third trim. was: 3,2±2,0; 5,4±2,5 and 5,2±2,6, respectively. The drug of choice was ibuprofen at a maximum daily dose of 1200 mg, its withdrawal - no later than 32 weeks of pregnancy.

Adherence to NSAID therapy was defined as the ratio of the actual dose taken to the prescribed dose; an indicator of less than 80% was regarded as non-adherence to therapy. The total dose of NSAIDs was determined by the NSAID intake index (M. Dougados, 2001). The "actual daily dose" of ibuprofen was the sum of the doses of ibuprofen taken, divided by the number of actual days of taking the drug. The "average daily dose" was defined as the sum of the ibuprofen doses taken, divided by the number of days in the trimester.

Results: At the time of conception and in the first, second and third trim. of pregnancy, NSAIDs were taken 23 (46%), 20 (40%), 30 (60%) and 21 (43.8%) women, respectively. The NSAID intake index, the actual and average daily dose of ibuprofen are shown in the Table 1.

	month of conception	trim. 1	trim. 2	trim. 3
the actual daily dose, mg	-	700 [425; 800]	800 [400; 1000]	750 [400; 1200]
the average daily dose, mg	-	158 [87,9; 307,7]	355,1 [138,5; 685,7]	580 [320; 1200]
NSAIDs intake index	28,6 [16,7; 50]	5,8 [2,9; 11,8]	15,5 [4,7; 30,9]	24,4 [9,5; 50]

The index of NSAID intake in the first trim. was lower than before pregnancy and in the second half of gestation (p<0.05 compared to the month of conception, II and III trim.). The average daily dose of ibuprofen was also lower in the first trim. than in the second and third trim. (p<0.05), while the actual daily dose in the second trim. was higher than in the first and third trim. (p<0.05 in all cases).

There was no correlation between BASDAI AS activity, the level of nocturnal pain and the ibuprofen intake index, likewise the fact of NSAID withdrawal throughout pregnancy. In addition, there were no differences in BASDAI levels and back pain in women with a subjective need for NSAIDs, who did and didn't take ibuprofen. 50% of women were committed to NSAID therapy in the first trim., 43.5% in the second trim., and 67.4% in the third trim. In pts with non-adherence to NSAID therapy, the BASDAI level was higher than in those who followed the recommendations of the rheumatologist throughout pregnancy: in the first trim. - 3.8[3.4; 4.7] and 1.7[0.8; 2.2]; in the second trim. - 3[2.3; 4.6] and 1.4[0.8; 2.7]; in the

third trim. - 3.1[2.1; 4.0] and 1.7[1.1; 4.0], $p < 0.05$ in all cases. However, women with adherence $> 80\%$ were initially less active and NSAIDs were prescribed "on demand", which increased their compliance.

Conclusion: intake of ibuprofen in low doses does not affect the activity of AS. Due to the ongoing discussion about the effect of NSAIDs on neonatal outcomes, further international studies are required for development an optimal treatment regimen during pregnancy with a possible extension of the indications for the appointment of TNF inhibitors (BASDAI <4).

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AB0475

COMPARATIVE EFFECTIVENESS OF BIOLOGICAL DISEASE-MODIFYING ANTIRHEUMATIC DRUGS IN REAL CLINICAL PRACTICE ACCORDING TO THE MOSCOW UNIFIED ARTHRITIS REGISTER (MUAR)

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Background: This study is the first analysis of biological disease-modifying anti-rheumatic drugs (bDMARDs) for ankylosing spondylitis (AS) within the Moscow Unified Arthritis Register (MUAR).

Objectives: to compare the effectiveness of bDMARDs in patients with AS using data from the MUAR.

Methods: The analysis included the data of patients with AS who were included in the MUAR and received biological therapy for at least 6 months. The effectiveness of the drugs was assessed by the achieved values of the indices of diseases activity and its manifestations: ASDAS(C-RP), BASDAI, LEI, MASES, indicators of the functional ability of patients (BASFI, HAQ) at the last completed visit. Comparison of indicators between drugs was in a general linear model, adjusted for the identified confounders. The search for confounders was in 2 stages: first, by univariate analysis, were identified indicators significantly related to the achieved ASDAS. Then, within the multivariate general linear model, by backward stepwise selection were determinate variables significantly and independently associated with ASDAS.

Results: The current study included 363 episodes of treatment with bDMARDs in 361 patients. There were 240 men (66.5%). The average age of the included patients was 46.3 ± 11.2 , the age at the onset of the disease was 27.3 ± 11.4 . The average duration of a treatment episode until the patient was assessed 1135 ± 900 days. Significant differences of the values of ASDAS ($p = 0.033$) and ESR ($p = 0.007$) between bDMARDs were revealed. In pairwise comparisons of the achieved ASDAS using the Sidak adjustment, demonstrated that the values on infliximab and adalimumab were significantly lower than on certolizumab pegol ($p = 0.009$ and $p = 0.041$, respectively). Also significantly higher ESR values on certolizumab compared to all other drugs ($p < 0.001$ for all) were found. There

Table 1. Achieved values of the indices of activity and functional ability against the background of treatment with bDMARDs.

	ASDAS(C-RP)		BASDAI		HAQ		BASFI	
	unadjusted	adjusted	unadjusted	adjusted	unadjusted	adjusted	unadjusted	adjusted
ADA	1,89 ± 0,89	1,54 ± 0,29	3,07 ± 1,61	2,89 ± 0,25	0,63 ± 0,42	0,60 ± 0,07	3,25 ± 2,02	3,09 ± 0,32
GOL	2,08 ± 0,99	2,22 ± 0,31	3,09 ± 1,96	3,44 ± 0,49	0,66 ± 0,61	0,78 ± 0,14	3,74 ± 2,93	4,00 ± 0,63
INF	1,57 ± 0,82	1,29 ± 0,32	2,64 ± 1,55	2,19 ± 0,38	0,56 ± 0,52	0,57 ± 0,11	2,81 ± 2,29	2,93 ± 0,49
ETA	1,96 ± 0,85	1,94 ± 0,24	3,19 ± 1,69	3,44 ± 0,19	0,65 ± 0,53	0,72 ± 0,06	3,39 ± 2,26	3,88 ± 0,24
CER	2,69 ± 1,03	2,95 ± 0,46	4,07 ± 2,28	3,65 ± 0,52	1,12 ± 0,82	0,84 ± 0,15	5,07 ± 2,95	4,19 ± 0,67
SEK	2,69 ± 1,31	1,66 ± 0,51	3,72 ± 2,22	3,71 ± 0,49	0,85 ± 0,47	0,85 ± 0,14	3,46 ± 2,13	3,46 ± 0,63

ADA – Adalimumab, GOL – Golimumab, INF – Infliximab, ETA – Etanercept, CER – Certolizumab pegol, SEK – Sekukinumab, ASDAS – Ankylosing Spondylitis Disease Activity Score, BASDAI Bath Ankylosing Spondylitis Disease Activity Index, BASFI – Bath Ankylosing Spondylitis Functional Index, HAQ – Health Assessment Questioner, C-RP – C-reactive protein.

were no statistically significant differences between the drugs for other studied parameters.

Conclusion: The studied bDMARDs (infliximab, adalimumab, etanercept, certolizumab pegol, golimumab, secukinumab) demonstrate generally similar clinical efficacy in real clinical practice. The effect of golimumab and sekukinumab which have been recently introduced into clinical practice doesn't differ significantly from the effect of TNF inhibitors which has been used for a long time.

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AB0476

VITAMIN D SERUM CONCENTRATION VARIES ACCORDING TO DISEASE ACTIVITY IN SPONDYLOARTHRITIS

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Background: Several studies have shown dissimilar results for the relationship between serum 25-hydroxyvitamin D concentration (25-OH-D) and disease activity in spondyloarthritis (SpA).

Objectives: This study aims to assess whether vitamin D levels vary according to disease activity in patients with SpA before and after starting treatment with biologic disease-modifying anti-rheumatic drugs (bDMARDs).

Methods: An observational retrospective study was performed in SpA patients followed in the Rheumatology department of a tertiary university hospital. Demographic and clinical data were collected from the Rheumatic Diseases Portuguese Register (Reuma.pt). Patients were assessed for 25-OH-D levels before and after 6 months of treatment with the first bDMARD. Correlation between 25-OH-D levels and disease activity measured by Ankylosing Spondylitis Disease Activity Score (ASDAS) at baseline and after 6 months were assessed using student's t-test for two samples and one-way ANOVA and with post hoc tests for multiple comparisons.

Results: A total of 189 patients were included. Ninety-seven patients were females (51.3%). The mean age at diagnosis was 34.8 ± 11.2 years and the median disease duration at the start of the first bDMARD was 4.9 years (min: 0.1; max: 46.0). All patients fulfilled the ASAS criteria for SpA. Nonsteroidal anti-inflammatory drugs were used by 102 patients (54.0%) and conventional synthetic DMARDs by 69 patients (36.5%). At 6 months, 188 patients were treated with tumor necrosis factor inhibitors and one with interleukin-17 inhibitor. According to ASDAS criteria, at baseline 36.8% of patients had high disease activity and 59.5% had very high disease activity. After 6 months of treatment with bDMARD 14.7% of patients have inactive disease, 21.6% low disease activity, 36.3% high activity and 12.6% very high disease activity. The mean value of 25-OH-D at baseline was significantly lower in the group of patients with very high disease activity compared to the patients with high disease activity (21.9 ± 11.1 ng/ml vs 26.1 ± 11.6 ng/ml, $p = 0.02$). At 6 months of treatment the mean value of 25-OH-D in inactive, low, high and very high disease activity was 31.0 ± 17.1 ng/ml, 28.5 ± 11.2 ng/ml, 25.8 ± 10.8 ng/ml and 19.3 ± 9.5 ng/ml, respectively. There was a statistically significant difference between the groups, as determined by one-way ANOVA ($p = 0.001$). A post hoc Dunnett T3 test revealed that patients with very high disease activity have significantly lower mean 25-OH-D levels (19.29 ± 9.5) than patients with inactive disease (31.0 ± 17.1 , $p = 0.025$) and low activity (28.5 ± 11.2 , $p = 0.009$). Among the groups with high and very high disease activity, the significance is only marginal ($p = 0.068$).

Conclusion: Vitamin D serum concentration varies according to disease activity in SpA. In fact, SpA patients with lower levels of 25-OH-D are associated with higher rates of disease activity, even in patients treated with biologics agents. It is important to be aware of vitamin D level as it can play a role in the management and treatment of the disease, mainly in the most severe patients.

REFERENCES:

- [1] Zhao SZ, Thong D, Duffield S, Goodson N. Vitamin D Deficiency in Axial Spondyloarthritis is Associated With Higher Disease Activity. Arch Rheumatol. 2017 Mar 24;32(3):209-215. doi: 10.5606/ArchRheumatol.2017.6212. PMID: 30375524; PMCID: PMC6190948.

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