the child (age ≥ 11 years). The Brief IPQ is a nine-item questionnaire rated using a 0-to-10 response scale that assesses cognitive illness representations: consequences (Item 1), timeline (Item 2), personal control (Item 3), treatment control (Item 4), and identity (Item 5). Two of the items assess emotional representations: concern (Item 6) and emotions (Item 8). One item assesses illness comprehensibility (Item 7).

Results: The study included 22 patients. The mean age was 15 ± 7 years [4-35], and the mean age at diagnosis was 9 ± 3 years [3-14]. There was a female predominance (sex ratio= 2.1). The frequency of each JIA subset was as follows: polyarticular with rheumatoid factor ($n=1$), polyarticular without rheumatoid factor ($n=3$), systemic ($n=2$), enthesitis-related arthritis ($n=9$), oligoarthritis ($n=7$), undifferentiated ($n=1$). Non-steroidal anti-inflammatory drugs were prescribed in 72% of cases, and Cs-DMARs in 59% of patients. The most-reported causal factor in their illness was a history of traumatism (22%). Perceiving symptoms (identity) were significantly related to being affected by the disease (emotional response) ($p=0.01$). Conversely, patients who had personal and treatment control expressed less emotional response ($r=-0.7$, $r=-0.2$ respectively). Moreover, those who were concerned about the disease perceived more the consequences of their illness ($p=0.09$) and understood it more ($p=0.029$). We also noted significant correlations between personal control and treatment control ($p=0.033$). A positive correlation was found between identity as well as consequences and timeline ($p=0.011$, $p=0.024$), showing that the perception of chronicity was associated with pain and the burden of the disease.

Conclusion: Our study highlighted the importance of assessing illness perception in JIA patients. Patient education programs should be implemented since diagnosis for better disease management.

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AB0745

BONE STATUS IN CHILDREN WITH JUVENILE IDIOPATHIC ARTHRITIS (JIA) ON T2T THERAPY

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Background: In recent years approaches to both the diagnosis and treatment of JIA have changed. Among it key positions for bone health are reducing the time to make a diagnosis and initiation of basic therapy, as well as reducing the timing and doses of corticosteroids. The interdependence of osteopenia in children with JIA with established impairment of vitamin D status, the prevalence of which remains very high in this cohort of patients, has also not been definitively elucidated.

Objectives: To study the condition of bone tissue in children with JIA in modern disease management and to identify adverse factors for the development of osteopenia among the clinical manifestations signs.

Methods: The study included 35 children with JIA aged 7 to 17 years, mostly female (77.1%), with oligo - (25.7%), poly - (60.0%) and undifferentiated (14.3%) arthritis, 53.4% have not yet received basic therapy. No corticosteroid therapy was available. The study of bone tissue was performed by two-energy X-ray absorptiometry (Explorer QD W-Hologic). All patients were tested for serum parathyroid hormone (PTH), the level of 25-hydroxyvitamin D [25(OH) D], the total and ionized calcium and blood phosphorus. The control group consisted of 12 healthy children of the same age with a normal level of 25 (OH) D.

Results: The average level of 25(OH)D was 20.41 ± 1.35 ng/ml, which is considered insufficient and was lower than in the control group (30.03 ± 2.53 ng/ml, $p<0.05$). Studies of calcium and phosphorus in the blood showed that children with JIA have no deviations from the normative values. The majority of examined patients (98.37%) had normal values of PTH, in average was 30.43 ± 0.90 pg/ml. The PTH was significantly different in children with different variants of JIA, the highest content was recorded in non-differential arthritis (34.33 ± 1.80 pg/ml), the lowest - in the oligoarticular variant (28.36 ± 1.43 , $p<0.05$). PTH had a negative correlation with 25(OH)D status ($r=-0.41$; $p<0.05$) and did not depend on the sex and disease activity.

The incidence of osteopenia was 28.57%, its prevalence was almost the same in different variants of arthritis and did not depend on the sex and age of patients, positivity for RF. Osteopenia was more common in ANA-positive than in ANA-negative variant (46.15% vs. 18.18%; $p<0.05$). In 30.0% patients with osteopenia decreased BMD reached the values of osteoporosis (more than 2.5 σ). This group consisted of girls with predominantly polyarticular and undifferentiated JIA, with RF-negative and ANA-positive variant.

Deviations from the age normative values of BMD (Z-score) were associated with BMI ($r=0.33$; $p<0.05$), JADAS scale results ($r=0.35$; $p<0.04$), the number of

active joints ($r=0.34$; $p<0.05$), ANA ($r=-0.34$; $p<0.05$). In children with osteopenia it was correlated with the duration of the disease ($r=-0.67$; $p<0.05$), the number of active joints ($r=-0.62$; $p<0.05$), blood phosphorus level ($r=0.74$; $p<0.05$) and JADAS scale results ($r=0.59$; $p<0.05$). In children with preserved BMD correlations was supplemented by 25(OH)D status ($r=-0.33$; $p<0.05$) and BMI ($r=-0.40$; $p<0.05$). Analysis of the interdependence of the formation of osteopenia and clinical manifestations signs established the total significance of the main parameters of the disease with the highest coefficient of determination in the polyarticular variant: $-112.65 + 0.09(\text{patient's age, mo}) + 4.33(\text{patient's sex}) - 3.74(\text{ANA, units}) - 1.80(\text{RF, units}) + 0.01(\text{age of onset, months}) - 0.34(\text{number of affected joints}) - 0.18(\text{number of active joints}) - 0.18(\text{ESR, mm/h}) + 7.158(\text{ionized calcium, mmol/l}) + 5.19(\text{phosphorus, mmol/l}) - 0.01(\text{PTH, ng/ml}) + 0.18(25(\text{OH})D, \text{ng/ml})(R^2=99.99\%; p<0.001)$.

Conclusion: With modern JIA management a quarter of children have osteopenia. The state of the bone tissue is more associated with the prevalence, immunological and inflammatory activity of the disease against the background of preserved calcium-phosphorus homeostasis and vitamin D deficiency, and is not associated with the present therapy.

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AB0746

THE ASSOCIATION BETWEEN PRESARCOPENIA AND BONE MINERAL DENSITY IN ADULT PATIENTS WITH JUVENILE IDIOPATHIC ARTHRITIS

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Background: The importance of presarcopenia (low lean mass) in clinical practice is accompanied by a high risk of adverse effects such as early disability, reduced quality of life, and increased mortality.

Objectives: The aim of the study was to assess the link between bone mineral density (BMD) and the state of the muscular system in adult patients with juvenile idiopathic arthritis (JIA).

Methods: The study was performed in Oleksandrivska Clinical Hospital of Kyiv, Ukraine, where adult patients were transferred from pediatric rheumatologists. Inclusion criteria: patients aged 18-44 years at the time of signing the informed consent; diagnosis of JIA in childhood, verified according to ILAR criteria, duration of JIA >3 years. According to the European Working Group on Sarcopenia in the Elderly (EWGSOP) 2019, patients with a decrease in muscle mass alone were diagnosed with presarcopenia. The BMD and muscle tissue were determined in standard localizations using dual X-ray absorptiometry (DXA).

Results: The study included 26 adult patients with JIA, including 10 male patients and 16 female patients. The mean age at the time of examination was 22.3 ± 8.15 years; the mean age at the onset of the disease was 9.04 ± 4.9 years. According to the ILAR classification, patients had the following variants of JIA: 3 patients with RF-negative polyarticular variant, 8 patients with persistent oligoarthritis, 4 patients with extended oligoarthritis, 6 patients with RF-positive polyarthritis variant, and 5 patients with systemic JIA. According to the EWGSOP, 2019 reduced muscle mass was calculated by skeletal muscle index (SMI); the cut-off points were considered by SMI <7 kg/m² for male, <6 kg/m² for female. Patients were divided into two groups depending on the presence or absence of presarcopenia. The first group (1-st group) included 16 patients with reduced muscle mass (SMI – 5.22 ± 0.72 kg/m²), and the second group (2-nd group) included 10 patients without reduced muscle mass (SMI – 8.05 ± 0.94 kg/m²). It was found that the height and weight of patients in the group of presarcopenia was lower than in the group without a low lean mass (height 1.68 ± 0.07 m vs 1.74 ± 0.09 m, $t=-2.53$; $p=0.01$; weight 55.06 ± 8.3 kg, 70.0 ± 10.8 kg, $t=-3.9$; $p=0.0007$, respectively). The age of patients (25.3 ± 10.1 and 21.3 ± 5.9 years for 1-st and 2-nd groups respectively) and the duration of the disease (17.1 ± 9.5 and 10.3 ± 6.1 for 1-st and 2-nd groups respectively) did not differ statistically between the groups. The age of the onset of JIA in both groups also did not differ (7.8 ± 4.5 and 11.5 ± 4.1 for the 1-st and 2-nd group respectively). The following data were obtained by DXA. The patients of 1-st group had statistically reduced BMD in the region of femoral neck - 0.927 ± 0.15 g/cm² vs 1.179 ± 0.13 g/cm², $t=-3.18$; $p=0.006$; total hip - 0.977 ± 0.16 g/cm² vs 1.184 ± 0.05 g/cm², $t=-3.05$, $p=0.0080$; total body - 1.080 ± 0.1 g/cm² vs 1.193 ± 0.15 g/cm², $t=-2.19$; $p=0.03$; and ultra-distal radius - 0.286 ± 0.06 g/cm² vs 0.482 ± 0.11 g/cm², $t=-3.60$; $p=0.007$. The BMD in the region of lumbar spine did not differ in two groups - 1.152 ± 0.16 g/cm² vs 1.137 ± 0.17 g/cm², $t=0.21$; $p=0.8$. In the group of presarcopenia there was a visible decrease in the level of the metabolite of vitamin 25(OH)D₃ but not statistically significant: 15.5 ± 7.3 nmol/l vs 19.7 ± 8.6 nmol/l, $t=1.0$; $p=0.3$. The study has strengths such as first described presarcopenia in young adults with JIA and potential limitations such as mono-center study and a small number of patients.

Conclusion: The BMD in the region of total hip, femoral neck, ultra-distal radius, and total body in patients with decreased muscle mass was significantly lower than in patients without low lean mass.

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AB0747

MATERNAL AND FETAL OUTCOMES IN PREGNANT WOMEN WITH JUVENILE IDIOPATHIC ARTHRITIS: A SYSTEMATIC LITERATURE REVIEW

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Background: Juvenile idiopathic arthritis (JIA), one of the most common chronic diseases in children, can be classified in seven different categories according to its onset presentation. Concerns about pregnancy outcomes play a secondary role in disease approach. However, recent data showed an increased risk of pre-term birth in women with JIA instead the small patient samples analysed.

Objectives: In this review, our aim is to describe the current available knowledge on JIA adverse, maternal and fetal, outcomes.

Methods: A systematic literature review was conducted since January of 2000 until December 2020, by searching the PubMed and Embase bibliographic databases. The search was limited to articles in English language, presenting a comparator group (healthy individuals or patients without known auto-immune rheumatic diseases) and at least one clinical outcome of interest. Two independent reviewers screened the titles and abstracts followed by a full-text review to assess papers regarding their eligibility.

Results: Ten observational studies out of 1560 references, fulfilled the inclusion criteria, of which, 9 were retrospective and 1 prospective. A total of 6.214 women with JIA (with 6.811 pregnancies) and 18.659.513 healthy controls (with 21.339.194 pregnancies) were included in this review.

Concerning maternal outcomes, delivery by caesarian section (CS) was more frequent among JIA women (in 4 out of 6 studies). Pre-eclampsia was referred in 3 out of 6 studies and a higher risk of vaginal bleeding and placenta previa in one additional study. No study found an increased risk for gestational diabetes or hypertension in pregnant women with JIA.

Regarding fetal outcomes, 8 studies revealed significantly increased of pre-term birth (only in first births in one study) but one study didn't show any increased risk. Two studies showed a higher risk of small gestational age (SGA) and in another 2, increased risk for low birth weight (LBW). No evidence of increased risk of major congenital malformations.

Conclusion: This systematic review suggests an increased risk for pre-eclampsia, preterm birth, delivery by CS, SGA and LBW, among pregnant women with JIA. Conclusions should be carefully interpreted, giving the heterogeneity of studied populations regarding demography, disease type, disease activity, and prescribed medication.

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AB0748

ARE ANY DIFFERENCES BETWEEN JIA - ASSOCIATED UVEITIS, DEVELOPED BEFORE AND AFTER JOINT MANIFESTATION

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Background: Uveitis is the most common extra-articular manifestation of juvenile idiopathic arthritis (JIA). Usually uveitis developed during first two years after arthritis occurred [1]. In the previous studies was shown the shorter time interval between arthritis and uveitis the severe uveitis course was observed [2]. Information about course of uveitis developed before arthritis is scarce.

Objectives: We aimed to evaluate the clinical features and therapy of JIA-associated uveitis, which developed before and after joint manifestation.

Methods: In the retrospective study 191 pediatric autoimmune uveitis included. The onset age ranged from 1 to 17 years. We evaluated differences in clinical, laboratorial and treatment differences between groups, i) where uveitis developed before (n=58) and ii) after (n=133) arthritis. Chronic autoimmune uveitis without joint manifestations was excluded.

Results: Uveitis before arthritis developed in 58 (30.4%) cases. Patients whom uveitis developed before arthritis had were elder and characterized equal gender involvement, rare ANA positivity, and rare use of immunosuppression, e.g. corticosteroids, biologics and methotrexate, due to treatment by ophthalmologist predominantly. Patients developed uveitis before arthritis received biologics earlier due to severity of uveitis (LogRank test, p=0.016, HR=1.97 (95%CI: 1.3; 3.1, p=0.004). Data are in the Table 1 and Figure 1.

Conclusion: Patients with JIA associated uveitis with initial ocular presentation demonstrated more severe course and delayed diagnostics and treatment due to lack of contacts with pediatric rheumatologist. Cooperation between ophthalmologist and pediatric rheumatologist is strictly required in all cases with chronic anterior uveitis.

Table 1.

Parameter	Uveitis before arthritis (n=58)	Uveitis after arthritis (n=133)	p
Sex, female	32 (55,2)	97 (72,9)	0.016
Onset age, years	6.7 (4.6; 10.2)	3.2 (2; 6.1)	0.000001
JIA category			
Oligoarthritis	41 (70.7)	84 (63.6)	0.174
Polyarthritis	9 (15.5)	36 (27.3)	
Enthesitis-related arthritis	8 (13.8)	12 (9.1)	
Type of uveitis			
Anterior	44 (75.9)	111 (84.1)	0.315
Peripheral	3 (5.2)	2 (1.5)	
Posterior	3 (5.2)	3 (2.3)	
Panuveitis	8 (13.8)	16 (12.1)	
Unilateral uveitis, n (%)	19 (32.8)	48 (36.1)	0.632
ANA positivity, n (%)	25/54 (46.3)	72/110 (65.5)	0.019
HLA B27 positivity, n (%)	8/35 (22.9)	13/62 (21.0)	0.828
Methotrexate, n (%)	3 (5.2)	57/132 (43.2)	0.000001
Systemic corticosteroids, n (%)	3 (5.2)	44/131 (33.6)	0.00003
Biologic, n (%)	26 (44.8)	88 (66.2)	0.006
ESR, mm/h	19.0 (4.0; 25.0)	23 (15.0; 32.0)	0.095
CRP, mg/l	97.0 (0.1; 107.5)	8.1 (0.9; 57.4)	0.493
Time between arthritis and uveitis, years	2.7 (0.9; 4.3)	4.0 (2.0; 7.1)	0.016
Time before biologic, years	2.5 (0.9; 3.5)	1.3 (0.5; 5.0)	0.462

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Figure 1.

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