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DRUG SURVIVAL OF SYSTEMIC TREATMENTS IN JUVENILE IDIOPATHIC ARTHRITIS

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Background: Juvenile idiopathic arthritis (JIA) comprises a group of inflammatory diseases that frequently requires systemic treatments. There are some studies that evaluate the systemic drug survival in adults with JIA; but there is scarce data about the drug survival in paediatric population.

Objectives: Our main objective was to study the drug survival of biologic therapies and synthetic DMARD in a monocentric cohort and the related factors influencing on it.

Methods: Patients with JIA visited in the last 12 years were included. We carried out a retrospective, longitudinal study and collected data on treatment (start date, tapering and stop the treatment date; causes of finish and combined treatment or not). We also collected demographic data with date of birth, sex, symptoms onset data and JIA subcategory. We studied time to relapse since the drug suspension. The drug survival for each kind of treatment was analyzed with Kaplan-Meier curves.

Results: We included 158 patients with JIA. Demographic data are shown in table 1. One hundred and thirty (82.3%) patients started methotrexate (MTX) with a half-life of 34.8 months; 79 (51.5%) patients started biologic therapy with half-life of 29 months and 14 (17.7%) patients started a second biologic with a half-life of 5 months. Time to first tapering of MTX was 12 months, for the first biologic was 10.5 months and for the second biologic was 15 months. The main cause of suspension was remission for each group. Treatment according to different JIA subcategories is shown in table 2. In 45 patients (28.5%) systemic treatment was stopped and 11 (24.4%) had a disease flare in a mean time of 36 months. Taking into account only patients who flared, the mean time was 15.6 months.

Table 1. Demographics features

	Total (n:158)
Sex (female)	96 (60,76%)
Starting age (median y RI)	4,9 (2,6-9,8)
AAN positives	91 (57,6%)
JIA oligo persistent	66 (41,77%)
JIA oligo extended	16 (10,13%)
JIA enthesitis	14 (8,86%)
JIA psoriasis	9 (5,7%)
JIA systemic	18 (11,39%)
JIA poli FR-	29 (18,35%)
JIA poli FR+	4 (2,53%)
JIA undifferentiated	2 (1,27%)

Table 2. Treatment according to JIA subcategories

	Group 1 (Systemic JIA n=18 (%))	Group 2 (Oligoarticular JIA n=82 (%))	Group 3 (Polyarticular JIA n=33 (%))	Group 4 (Juvenil SpA n=23 (%))
Synthetic DMARD (n:130)	9 (50%)	71 (86,6%)	33 (100%)	17 (74%)
Biologic Therapy (n:79)	6 (33,3%)	34 (41,46%)	22 (75%)	17 (74%)
No systemic treatment (n:21)	7 (38,9%)	10 (12,2%)	0	4 (17,4%)

Conclusion: The drug survival for systemic therapies in children with JIA is more than 2 years, without significant differences between synthetic DMARDs and biologics. Remission is the main cause for ending treatment. Biologic drug survival was significantly shorter between systemic JIA and the other subcategories. Only one fourth of patients had a flared after stopping the systemic treatment.

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SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS: ARE DIFFERENT CLINICAL PATTERNS ASSOCIATED WITH S100A8/S100A9 SERUM LEVELS?

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Background: Systemic juvenile idiopathic arthritis (SJIA) is a category of Juvenile Idiopathic Arthritis (JIA). Different clinical patterns (articular/systemic/both

of them combined) have been recognized, possibly identifying distinct sub-populations. Serum biomarkers that reflect disease activity include S100A8/S100A9 (S100A8/9), however to date patterns of SJIA and their association with S100A8/9 has not been tested.

Objectives: To evaluate S100A8/9 levels in a cohort of patients with SJIA. To determinate S100A8/9 inactive vs inactive visits. To distinguish patterns on SJIA and their association with S100A8/9. To compare serum levels of S100A8/9 with other JIA categories and autoinflammatory diseases.

Methods: An unicenter, observational, cross sectional study was conducted. Patients with SJIA according ILAR whom S100A8/9 was measured as part of standard care were enrolled. Consecutive visits were included. Variables recorded were: clinical (systemic: fever, serositis, adenopathy, hepatomegaly, splenomegaly and arthritis); biochemical (S100A8/9, hemoglobin, platelet, erythrocytopenia, c-reactive protein, ferritin). Activity measures: Juvenile Arthritis Disease Activity Score (JADAS -10) and physician visual analogue scale (phy VAS). Visits were divided into active/inactive. Active visit was defined as at least one clinical feature.(systemic and/or arthritis). Inactive visit no clinical symptoms neither JADAS-10> 1 and phy VAS: 0. SJIA patterns were defined as: "articular pattern": those patients with arthritis without systemic features, "systemic pattern": any systemic feature without arthritis, "mixed pattern": both articular and systemic. Levels of S100A8/9 were tested using Calprotectin Elisa Kit. For comparisons others JIA: enthesitis related arthritis (ERA), polyarticular and autoinflammatory diseases who had at least one S100A8/9 determination were included. Descriptive statistics, Mann-Whitney U test and ANOVA were used as appropriate.

Results: Forty-two patients with SJIA were included (25 F). Age at evaluation 13 (1-16.5) years. Clinical features at study baseline: arthritis 57 %, rash 19%, fever 15 %, adenopathies 6%, splenomegaly 4%, hepatomegaly 1.5%. Laboratory features (median): hemoglobin 12.2 gr/dl, platelet 314000 cel/mm3, erythrocytopenia 12.5 mm/h, c-reactive protein 0.7 mg/dl, ferritin 235 ng/ml. JADAS -10 ≥ 1: 62%. Number of active patients were 29 (69%). Scheduled Medical visits were 129 (active 65%, inactive 35%). Active visits were divided according patterns into: articular 54%, mixed 35%, systemic 11%.

Serum Levels of S100A8/9 according to SJIA patterns.

SJIA	Overall	Active	Articular	Systemic	Mixed	Inactive
Visits	129	84	46	9	29	45
S100A8/9 ng/ml	7590	16788	10750	5200	25000	3103
Median (range)	(300-2625)	(300-26250)	(300-26250)	(850-12250)	(3290-2625)	(1140-1010)

S100A8/9 analysis revealed significant differences among active vs inactive medical visits (p: 0.00001). ANOVA test among SJIA patterns showed, F:86.48, (p:0.00001). Mixed pattern was distinctive to others. S100A8/9 (medians ng/ml) in comparable diseases were: ERA: 4320, polyarticular: 4120, autoinflammatory: 6532. SJIA had the higher S100A8/9. SJIA was different than others comparable diseases (F: 11,62,p: 0.00001). Comparisons among SJIA patterns and others disease found that systemic and articular pattern did not show differences (F:2.78, p:0.067)

Conclusion: S100A8/9 was higher in SJIA compared to others diseases. It reflected disease activity. Mixed pattern evidenced to be different to others (systemic/articular). Mixed pattern was the unique that showed significative difference compared to other diseases. SJIA is probably not a single disease, but not only clinical patterns and biomarkers as S100A8/9, if not, genetic variants and their expression would be able to identify homogeneous groups towards tailored treatments.

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METABOLIC DISORDERS IN CHILDREN WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Systemic lupus erythematosus (SLE) is the most common pathology from the group of systemic diseases of the connective tissue. Currently, the problem of deadly complications in patients with SLE is progressively shifting towards vascular catastrophes, such as strokes and heart attacks. If a few years ago, patients mainly died at a young age from renal failure as a complication of lupus nephritis, now thromboses of various localization are in first place.

Objectives: The purpose of the study was to determine the state of lipid peroxidation and antioxidant protection, the main indicators of the lipid spectrum and the state of hemostasis in children with SLE.

Methods: 25 children with SLE and 20 healthy children were examined in the rheumatology department of the 4th city children's clinical hospital in Minsk. The lipid spectrum, lipid peroxidation (LPO) and serum ACL, ACW were determined in the Central Research Laboratory of the Belarusian Medical Academy of Postgraduate Education.