(IQR 3.75, 4). Other than 1 Filipino 2 year old girl (patient C), all other infants were of Chinese Singaporean origin and were less than age 1 year at onset; 4 male and 1 female. All patients were found to have multiple areas of irregular, thickened vessel walls with enhancement, involving the aorta and additional medium sized arteries on Magnetic Resonance Angiography (MRA). Only patients C and F presented with prolonged fever and or less than 1 clinical feature of KD. C developed a unilateral enlarged lymph node on recrudescence of fever 1 month after the initial event. She was then found to have dilated CA (dCA) and consequently abnormal MRA. Other patients had significant KD Index scores and complete KD presentations. Of the 4 patients who received only 1 dose of IVIG; C and F had diagnosis change from atypical KD to Takayasu Arteritis and G developed rhinovirus and then rotavirus as reason for prolonged fever. Patient A received IV steroids and then Infliximab. All patients received steroids. Patients A and B both developed a psoriasiform rash post-Infliximab which resolved on follow up. Patient F and Patient B died 3 months and 17 months after diagnosis. Patient F, presented with fever, fussiness and enteritis aged 4 months. Her symptoms recurred 2 weeks after onset. Due to differential hypertension, she received an echocardiogram and subsequently MRA and cardiac catheterization. Cause of death at age 7 months was small bowel perforation with arteritis and consequent intra-abdominal sepsis. Patient B, presented with complete features of KD at age 2 months. His course was noted for recrudescence 2 weeks and 4 weeks after initial IVIG. He developed giant coronary aneurysms with abnormal MRA findings; developed myocardial infarction at age 8 months and proceeded to require a Left Ventricular Assist Device but died age 13 months from multi-organ failure. 3/6 (50%) developed aneurysms, D and F were giant. 4 surviving patients, had improvement in all vessels but continued activity in the aorta on follow up MRA, they remain on Methotrexate with no active clinical findings.

Table 1: Patient characteristics

ID	Hg* (g/dL)	WBC count (10 ⁹ /L)	Platelet count (10 ⁹ /L)	CRP (mg/L)	Time to initial MRA (weeks)	Follow up MRA (months)	Immunosuppression
A	10.8	11.3	357	130	2	20	ifx
B	8.9	24.76	595	178.4	4	8	ifx
C	9.9	15.34	532	64.4	4	8	mtx
D	9.6	26.23	270	108.3	2	died	n
E	8.6	19.99	750	175.2	1	died	ctx
F	11.7	18.54	497	142	4	6	ifx, mtx

*Hg Hemoglobin, IFX infliximab, MTX methotrexate, CTX cyclophosphamide

Conclusions: Extensive involvement of the systemic arteries and aorta in all patient were noted on initial MRA. Follow up imaging, showed improvement in all vessels. After 1 year of follow up, complete resolution occurred only in medium vessels. Mortality in this patient cohort was 2/7 (28.6%). This is an observational case series and our findings will need to be reproduced in larger groups of patients.

References:

[1] Newburger JW, Takahashi M, Gerber MA, et al. Diagnosis, treatment, and long term management of Kawasaki disease. *Circulation* 2004;110:2747–71.

[2] McCulloch M, Andronikou S, Goddard E, et al. Angiographic features of 26 children with Takayasu's arteritis. *Pediatr Radiol* (2003) 33: 230–235.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.5812

THU0518 BIOLOGICAL THERAPY IN NON-SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS PATIENTS FOLLOWED IN ADULT RHEUMATOLOGY DEPARTMENT: HUR-BIO REAL LIFE RESULTS

L. Kilic¹, A. Sari¹, B. Armagan¹, A. Erden¹, Ö. Karadag¹, A. Akdogan¹, S. Apras Bilgen¹, S. Kiraz¹, S. Ozen², U. Kalyoncu¹, A.I. Ertenli¹. ¹Department of Rheumatology; ²Department of Pediatric Rheumatology, Hacettepe University Faculty of Medicine, Ankara, Turkey

Background: Juvenile idiopathic arthritis (JIA) is the most common chronic rheumatic disorder in childhood and more than one-third of patients have active inflammation during adult years that can cause disability.

Objectives: To define the demographic and clinical characteristics of non-systemic JIA (ns-JIA) patients under biological therapy followed in adult rheumatology department.

Methods: Hacettepe University Biologic Registry (HUR-BIO) is a single center biological registry since 2005. HUR-BIO database includes demographic and clinical characteristics of patients, disease activity parameters, history of articular prosthesis. The use of biological agents in routine rheumatology practice has been approved by the Ministry of Health since 2003.

Results: In this study, 95 (72.6% women) ns-JIA patients were included. The demographic and clinical characteristics of the patients were shown in the table. The first biological agents were; Etanercept (63.2%), adalimumab (16.8%),

infliximab (12.6%) and the others 7 (7.4%). After a mean follow-up of 60 (48) months, 42 (44.2%) patients required biologic switch. The last visit HAQ scores of 75 patients were known and 16 (21.3%) patients had HAQ score ≥ 1.0 (female 15/54 vs. male 1/21, $p=0.029$). The last visit DAS-28 score of 72 patients was known and 46 (63.9%) patients had remission or low disease activity. 14 patients (14.7%) had history of articular prosthesis and were all female. Patients with history of articular prosthesis were older [39.1 ± 10.1 vs. 29.6 ± 10.3 years, $p<0.0001$], had longer disease duration [25.7 ± 6.6 vs. 17.2 ± 11.9 years, $p=0.001$] and had longer time until the biological therapy [19.6 ± 8.4 vs. 11.5 ± 11.6 years, $p=0.002$]. The time until the biological therapy of 38 ns-JIA patients diagnosed after 2003 was shorter [3.2 ± 2.9 vs. 19.4 ± 10.6 years, $p<0.001$].

Table 1. The Demographic and Clinical Characteristics of the ns-JIA Patients

	All Patients (n=95)	Female (n=69)	Male (n=26)	p
Age mean (SD)	31.0 (10.8)	32.2 (10.9)	28.0 (10.0)	0.025
Age at first symptom, mean (SD)	9.9 (5.0)	9.5 (4.0)	10.9 (4.9)	0.22
Age at diagnosis, mean (SD)	12.5 (6.7)	12.3 (7.3)	13.2 (4.5)	0.62
Disease duration (year), mean (SD)	18.5 (11.6)	19.9 (11.2)	14.6 (12.1)	0.012
Time until the biological therapy (year) mean (SD)	12.7 (11.5)	14.2 (11.5)	8.7 (11.0)	0.01
History of hip or knee prosthesis, n (%)	14 (14.7)	14 (20.3)	0	0.01
RF or anti-CCP (+), n (%)	42 (44.2)	34 (49.3)	8 (30.8)	0.11
Biological switch, n (%)	42 (44.2)	32 (46.4)	10 (38.5)	0.64
Last visit HAQ mean (SD)	0.51 (0.62)	0.62 (0.67)	0.22 (0.35)	0.005
Last visit DAS-28 mean (SD)	2.85 (1.56)	3.14 (1.47)	2.18 (1.59)	0.009

RF: romatoid factor, CCP: cyclic citrillinated peptide, ns-JIA: non-systemic JIA, HAQ: Health Assessment Questionnaire, SD: Standard deviation.

Conclusions: Structural damage and history of articular prosthesis was more common in female ns-JIA patients receiving biological therapy. Functional disability and disease activity were also higher in female patients. On the other hand, the follow-up ns-JIA patients had a good level of remission and low disease activity. The shorter duration until the time of biological treatment in patients diagnosed after 2003 indicates that both pediatric and adult rheumatologists have begun to treat these patients more effectively.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.4133

THU0519 ETANERCEPT, ADALIMUMAB AND METHOTREXATE UTILIZATION BY JUVENILE IDIOPATHIC ARTHRITIS PATIENTS AND THE OCCURRENCE OF UVEITIS

K. Roshak¹, J.M. Sopczynski², R.M. Suehiro³, L. Marshall³. ¹Drexel University, Philadelphia; ²R&D Bt Bi, Predictive Informatics; ³Medical Affairs, Pfizer, Collegeville, United States

Background: Juvenile idiopathic arthritis (JIA) is a chronic arthritis with an onset before 16 years of age, that persists for at least 6 weeks, and has an unknown etiology.¹ Uveitis is a serious and common extra-articular manifestation of JIA, affecting 12–30% of patients (most commonly female with ANA+ oligoarthritis JIA category).^{2,3} JIA-associated uveitis can be treated with biologic disease modifying antirheumatic drugs (bDMARDs), including TNF inhibitors (TNFi) such as etanercept (ETN), infliximab (IFX), and adalimumab (ADA), after failure of first-line treatments, such as topical corticosteroids and/or conventional synthetic DMARDs (csDMARDs), such as methotrexate (MTX).² Of note, reports exist that ETN use has been associated with uveitis flares or new-onset uveitis while an observational study reported similar uveitis flare rates for both ADA and ETN.^{4,5}

Objectives: To conduct an analysis on the occurrence of uveitis in patients with JIA treated with ETN, ADA, or MTX. Combination therapy of ETN, ADA, and MTX was also assessed.

Methods: International Statistical Classification of Diseases (ICD)-9 diagnosis codes in a Truven MarketScan® claims database were used to identify JIA patients diagnosed with uveitis over a 5-year interval. The analysis assessed the proportion of JIA patients (aged 0–19 years) treated with ETN, ADA, or MTX, as monotherapy or in combination. The percentage of patients diagnosed with uveitis and the time interval for uveitis diagnosis in patients with JIA was determined.

Results: A total of 22,789 patients with JIA where included in this analysis and exhibited a mean age of 11.4 years, were predominantly female (69%), and mean JIA disease duration was 3 years. This total included 19,814 patients with chronic, or not otherwise specified, polyarticular JIA. A total of 2581 (11.3%) patients, of mean age 10.2 years, of which 73% were female, were diagnosed with uveitis. The numbers of JIA patients receiving biologic and/or MTX therapy and proportions with a uveitis diagnoses are shown in the Figure.

Conclusions: This analysis showed a similar occurrence of uveitis in JIA patients treated with ETN or ADA, either as monotherapy or in combination with MTX.

References:

[1] Petty RE, et al. *J Rheumatol* 2004;31:390–2.

[2] Clarke SL, et al. *Pediatr Rheumatol Online J* 2016;14:27.

[3] Wentworth BA, et al. *F1000Prime Rep* 2014;6:41.

[4] Schmeling H, Horneff G. *Rheumatology (Oxford)* 2005;44:1008–11.

[5] Foeldvari I, et al. *Arthritis Care Res* 2015;67:1529–35.

Disclosure of Interest: K. Roshak: None declared, J. M. Sopczynski Shareholder of: Pfizer, Employee of: Pfizer, R. M. Suehiro Shareholder of: Pfizer, Employee of: Pfizer, L. Marshall Shareholder of: Pfizer, Employee of: Pfizer

Note: Combination refers to ETN + MTX or ADA + MTX

Abbreviations: JIA, juvenile idiopathic arthritis; ETN, etanercept; ADA, adalimumab; MTX, methotrexate

Figure 1. To show the patients with JIA receiving a monotherapy (with ETN, ADA or MTX) or a combination therapy and the number of uveitis diagnoses.

DOI: 10.1136/annrheumdis-2017-eular.1857

THU0520 PELVIC ULTRASOUND IN THE ASSESSMENT OF SEXUAL MATURITY IN GIRLS WITH JUVENILE IDIOPATHIC ARTHRITIS

L.M. Gonçalves¹, S.H. Machado², R.M. Xavier³, P.J.C. Maróstica⁴, C. Kopacek⁵, I.R.S. Lucena⁶. ¹Student, PUCRS; ²Pediatrics rheumatology, HCPA; ³Rheumatology service; ⁴Pediatrics service, Hcpa/UFRGS; ⁵Endocrinology service, HCSA; ⁶Radiology service, HCPA, Porto Alegre, Brazil

Background: Delayed puberty is common in children with chronic illnesses such as Juvenile Idiopathic Arthritis (JIA), especially in cases with an earlier age of onset. Its etiology is multifactorial and includes low weight, complications arising from the disease itself and the adverse effects of treatment.

Objectives: To compare uterine and ovarian size as well as artery pulsatility between girls with juvenile idiopathic arthritis (JIA) and healthy participants using abdominal pelvic ultrasound, and identify these findings and pubertal staging, sex hormones and disease characteristics in girls with JIA.

Methods: This study involved 44 girls with JIA and 59 healthy controls aged between six and 18 incomplete years. Pelvic ultrasound was used to determine uterine volume and length, the corpus/cervix ratio, ovarian volume and length, and the pulsatility index (PI) of uterine arteries. Hormone levels were also measured in girls with JIA.

Results: All US parameters were associated with Tanner stages in the control group ($p < 0.001$). Uterine and ovarian measures were smaller in girls with JIA

Table 1. Comparison of abdominal pelvic US findings between control participants and patients with JIA

Variables*	Patients (n=744)	Control participants (n=759)	p
Uterine volume (cm ³)	10.5 (2.4–40)	36.6 (8.8–50.9)	0.009
Uterine length (cm)	4.92±1.83	5.91±1.80	0.008
Corpus to cervix ratio (cm)	1.18±0.25	1.36±0.27	0.001
Endometrium (mm)	1.4 (0–5.2)	5.4 (1.4–7.2)	0.016
Left Ovarian Length (cm)	2.60±0.69	3.04±0.84	0.006
Left Ovarian Volume (cm ³)	3.3 (1.5–5.2)	5.0 (3.0–7.1)	0.004
Right Ovarian Length (cm)	2.79±0.71	3.17±0.75	0.013
Right Ovarian Volume (cm ³)	2.9 (1.5–6.3)	5.9 (3.0–9.1)	0.006
Mean uterine PI	4.6 (2.7–6.5)	2.5 (1.9–5.1)	0.025

PI, pulsatility index. *Described as median (25th–75th percentile) or mean ± standard deviation.

Figure 1 – Comparison of uterine volume between groups across different age ranges

than in the control group. The mean PI of uterine arteries was higher in girls with JIA. Comparisons by age group revealed that uterine volumes were smaller in girls with JIA aged between 10 and 11 years ($p=0.004$) and 14 to 15 years ($p=0.042$), and the corpus/cervix ratio was smaller in girls aged 10 to 11 years ($p=0.007$). US measures were not associated with disease factors in the JIA group. LH and estradiol levels were found to be positively associated with ovarian and uterine size ($p < 0.001$), but negatively correlated with the mean PI of uterine arteries ($p < 0.01$).

Conclusions: Pelvic US is a sensitive method for the assessment of sexual maturation in girls, and can identify developmental delays in girls with JIA which may not be detected by Tanner staging.

References:

- [1] Pozo J, Argente J. Delayed puberty in chronic illness. *Best Pract Res Clin Endocrinol Metab* 2002;16:73–90.
- [2] Holm K, Laursen EM, Brocks V, Muller J. Pubertal maturation of internal genitalia: authors' reply. *Ultrasound Obstet Gynecol* 1995;6:452–3.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.4389

THU0521 ENTHESITIS-RELATED ARTHRITIS: NON-PERIPHERAL PATTERN IS ASSOCIATED WITH TH17 CELLS

M. Katsicas, C. Carrara, A. Bernasconi, J. Rossi, R. Russo. *Immunology & Rheumatology*, Hospital de Pediatría Garrahan, Buenos Aires, Argentina

Background: Enthesitis-related arthritis (ERA) is a category of juvenile idiopathic arthritis. Different proinflammatory cytokines linked to the Th1 and Th17 T-cell subsets have been implicated in its pathogenesis. Limited data are currently available about the relationship between disease activity and the clinical pattern and the percentage of Th1 and Th17 T-cell subsets.

Objectives: To analyze Th1 and Th17 cell subsets in patients with ERA and to compare with age-matched healthy controls. To assess the association between disease activity and disease clinical pattern with Th1 and Th17 cells subsets

Methods: Patients with ERA (according to ILAR criteria) were included in a cross-sectional study. Disease activity measures were collected in random visits: active joint count (AJ), pain score (0–10), presence of active enthesitis (AE), sacroiliac pain (SIP), lumbar pain (LP), lumbar limitation (LL) by Schöber's test, wellbeing according to the patient using a visual analogue scale (VASp, 0–10), disease activity according to the physician (VASphy, 0–10), JADAS-10, JSpADA, and ESR/CRP were evaluated. Patients were classified based on the disease pattern (peripheral and non-peripheral) depending on the presence or absence of AJ and/or AE. Functional capacity was also assessed by CHAQ. Presence of radiologic sacroiliitis (MRI/X-rays) and treatment with TNF inhibitors (TNFi) were recorded. Th-17 and Th-1 cells were quantified by flow cytometry in PBMCs stimulated with PMA/IO. Age-matched healthy children without disease or medication were recruited as normal control. Comparison between groups (Mann-Whitney U-test) and correlation tests as appropriate

Results: Twenty-nine patients (90% M) fulfilled inclusion criteria. HLA-B27 was positive in 13 (45%). Median age at observation was 12 years and median disease duration was 2.1 years. Activity and functional measures were (medians): AJ 1, pain 0.25, VASp 0.5, VASphy 1, JADAS-10 7, JSpADA 1.75, ESR 15 mm/h, and CHAQ ≥ 0.5 = 8 patients (27%). AE was present in 1 (3%), SIP in 7 (24%), LP in 6 (21%), and LL in 12 (41%) children. Nineteen (65%) patients showed JADAS > 1 and 21 (76%) JSpADA > 0 . Radiologic sacroiliitis was recorded in 21 (72%) children. Fourteen (48%) patients were treated with TNFi. Th1 cell percentage in ERA was $8.5 \pm 3.4\%$ (range, 4–17.4) while healthy controls was $5.8 \pm 3.8\%$ (range, 1.2–14.2), $p=0.023$. Th17 cell% in ERA was 0.90 ± 0.44 (range, 0.39–2.34%) while controls was 0.55 ± 0.38 (range, 0.17–1.61%); $p=0.004$. There was no difference between T-cells% and active/inactive disease. Eighteen (62%) children showed peripheral pattern, while 11 (38%) exhibited non-peripheral. Peripheral and non-peripheral groups showed Th17% cells 0.90 (0.39–1.74) vs 1.14 (0.64–2.44) respectively ($p=0.018$). Significant correlations were Th1 with AJ ($r=0.45$, $p=0.004$) and Th17 with LP ($r=0.83$, $p=0.0001$), LL ($r=0.47$, $p=0.03$).

Conclusions: Th1 and Th17 cells subsets were significantly higher in ERA compared with healthy controls. However, T-cells showed no significant difference between patients with active versus inactive disease. Interestingly, non-peripheral pattern showed higher Th17% cells respect to patients with peripheral disease. Our results suggest that Th17 evaluation could help identify different phenotypes that benefit from Th-17 blocking strategies.

References:

- [1] Biologic agents in juvenile spondyloarthropathies. Katsicas MM, Russo R. *Pediatr Rheumatol Online J* 2016;Mar 12;14 (1):17.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.6726

THU0522 CORRELATION BETWEEN SERUM CALPROTECTIN (MRP8/14), CLINICAL AND ULTRASOUND ASSESSMENT IN PATIENTS WITH JUVENILE IDIOPATHIC ARTHRITIS

M. Romano, V. Gerloni, M. Gattinara, O. De Lucia, P.L. Meroni. *Rheumatology*, G.Pini Institute, Milan, Italy

Background: MRP8/14 (also known as calprotectin) has been widely studied as