Conclusions: The contrast-enhanced MRI scores for the assessment of synovial enhancement and synovial inflammation in the wrist of clinically active JIA patients appear valid. Due to a low incidence of wrist tenosynovitis in this cohort, the validity of the tenosynovitis score could not be assessed. These findings further establish contrast-enhanced MRI as a diagnostic tool with synovitis as the primary target of disease in the wrist of JIA patients.

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THU0580 THE ACR RECOMMENDATIONS FOR JIA IN DAILY CLINICAL PRACTICE: ARE THEY FOLLOWED OR WOULD TREAT-TO-TARGET THERAPY LEAD TO BETTER RESULTS?

J.F. Swart, S. de Roock, P. van Dijkhuizen, N. Wulffraat. *Pediatric Rheumatology, UMC Utrecht, Utrecht, Netherlands*

Background: What factors drive the physician decision to escalate to anti-TNF therapy 3 and 6 months after start of methotrexate (MTX) in both persisting oligoarthritis (OJA) and polyarticular course (PJIA) juvenile idiopathic arthritis.

Objectives: Are the escalation-decisions in accordance with the ACR JIA treatment recommendations (ACR-CPG)¹ and if not, what factors drive these decisions. How does it perform as a "prognostic" test to predict failure when not escalated. Could the clinical Juvenile Arthritis Disease Activity Score (cJADAS) be used instead. What is the value of the patient-VAS in the ACR-CPG, the physician decision and in the cJADAS.

Methods: Monocentric retrospective cohort study analysing all OJA and PJIA patients starting MTX for the first time between 2011 and 2016.

Results: The ACR-CPG is mostly not followed and implementation would increase the anti-TNF-use from 12.0% to 65.1%. However, the physician decision not to escalate was now correct in 70%–75%, therefore implementation results in an overuse of anti-TNF. Some items of the ACR-CPG were non-discriminatory. The use of cJADAS in predicting failure if not escalated outperformed the ACR-CPG with a much higher sensitivity and specificity for the OJA and PJIA group respectively. The omission of the patient-VAS-scores resulted in a substantial decrease of the identification of patients failing to respond without escalation.

Conclusions: The ACR-CPG not only is too complicated to be applicable in clinical practice, it also fails to identify those patients really in need of escalation to

anti-TNF. The cJADAS can be used instead since this is user-friendly, does not require waiting for ESR results and performs better than the ACR-CPG. The patient-VAS is a critical item for the decision to escalate.

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THU0581 USE OF BIOLOGICAL THERAPIES IN ADULT PATIENTS DIAGNOSED WITH JUVENILE IDIOPATHIC ARTHRITIS: RESULTS FROM BIOBADASER, THE SPANISH REGISTRY OF ADVERSE EVENTS WITH BIOLOGIC THERAPIES

J.J. Bethencourt Baute¹, C. Sanchez-Piedra², F. Sanchez-Alonso², D. Ruiz-Montesinos³, J. Manero⁴, C. Rodriguez-Lozano⁵, E. Perez-Pampin⁶, A. Ortiz⁷, S. Manrique⁸, M.V. Hernandez⁹, C. Campos¹⁰, A. Sellas¹¹, A. Sifuentes¹², J. Garcia-Gonzalez¹³, J.J. Gomez-Reino¹⁴, F. Diaz-Gonzalez¹⁵, S. Bustabad-Reyes¹⁶, on behalf of BIOBADASER STUDY GROUP. ¹Rheumatology, Hospital Universitario de Canarias, La Laguna; ²Research Unit, Spanish Society of Rheumatology, Madrid; ³Rheumatology, Hospital Virgen Macarena, Sevilla; ⁴Rheumatology, Hospital Miguel Servet, Zaragoza; ⁵Rheumatology, Hospital Dr. Negrín, Las Palmas de Gran Canaria; ⁶Rheumatology, Hospital Universitario de Santiago, Santiago de Compostela; ⁷Rheumatology, Hospital de La Princesa, Madrid; ⁸Rheumatology, Hospital San Jorge, Huesca; ⁹Rheumatology, Hospital Clinic i Provincial, Barcelona; ¹⁰Rheumatology, Hospital General Universitario Valencia, Valencia; ¹¹Rheumatology, Hospital Vall D'Hebron, Barcelona; ¹²Rheumatology, Hospital Ramón y Cajal; ¹³Rheumatology, Hospital 12 de Octubre, Madrid; ¹⁴Rheumatology, Fundación Ramon Dominguez, Hospital Clinico Universitario, Santiago de Compostela; ¹⁵Rheumatology, Hospital Universitario de Canarias; ¹⁶Rheumatology, Hospital Universitario de Canarias, La Laguna, Spain

Background: Juvenile idiopathic arthritis (JIA) is the most frequent chronic rheumatic disease in childhood. The early disease recognition and treatment is critical to prevent long-term complications and disability in childhood. During the last decade the arrivals of biologics has dramatically changed the prognosis of these patients. A number of well-designed clinical trials, as well as cohort studies have demonstrated that biologics are an effective option for JIA patients who do not respond or cannot tolerate treatment with synthetic disease modifying drugs (DMARDs).

JIA is not confined to childhood, and a 41% had active disease are on medication after 30 years and 28% had a high symptom state.

Objectives: The aim of this work was to study the pattern of use, drug survival and adverse events of biologic therapy in JIA patients during the transition period from the diagnostic to the adulthood.

Methods: Information was obtained from BIOBADASER, a safety multicenter prospective registry. All patients included in the registry diagnosed of JIA between 2000 and 2015 were analysed. Proportions, means and standard deviations (SD) were used to describe population. Incidence rates and 95% confidence intervals were calculated to assess adverse events. Kaplan-Meier analysis was used to compare the drug survival.

Results: 469 patients, 46.1% women were included in this study. Age at diagnosis was 9.4 (SD=5.3) and years of disease evolution 24.1 (SD=14.1). The age at biological treatment initiation was 23.9 years (SD=13.9). The pattern of use of biologics in JIA patients in the paediatric age shows a linear increase from 24% in 2000 to 65% in 2014. Interestingly, the biologic suspension for disease remission was higher in patients who initiated its use under 16 years (25.7%) than in those who began at 16 years or later (7.9%, $p<0.0001$). Serious adverse events showed a total incidence rate of 41.4 (35.2–48.7) (1000 patients/year) without differences between patients younger or older than 16 years old. However, patients younger than 16 years old showed a significant increment in infection and infection ($p<0.001$).

Conclusions: The biologic survival and suspension by remission was higher when the biologic therapy started before 16 years old in JIA patients. The incidence rate severe adverse events in the childhood and adulthood in JIA patients treated with biologics was similar, however, a significant increment of infection was observed in patients under 16 years old.

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THU0582

A SYSTEMATIC REVIEW OF EMPLOYMENT OUTCOMES OF ADULTS WITH CHILDHOOD-ONSET SYSTEMIC AUTOIMMUNE RHEUMATIC DISEASES

K. Gu, T. Gottschalk, L.S.H. Lim. *University of Manitoba, Winnipeg, Canada*

Background: Childhood-onset systemic autoimmune rheumatic diseases (ChildCRD) include: systemic lupus erythematosus (SLE), Sjogren's syndrome, systemic sclerosis, inflammatory myositis, and chronic systemic vasculitides (Takayasu arteritis, polyarteritis nodosa, anti-neutrophil cytoplasmic antibodies (ANCA) associated systemic vasculitides). These conditions had mortality rates of up to 50%, but most patients now live into adulthood. Employment is an important milestone in adulthood: it has direct effects on one's socioeconomic status and access to health insurance, which could in turn affect disease outcomes.

Objectives: To perform a systematic review of the employment outcomes of ChildCRD individuals. To identify gaps of knowledge and methodological issues in this field so as to inform future studies.

Methods: ChildCRD patients have disease-onset <18 years old and adulthood outcomes reported at ≥18 years old. We developed a search strategy for employment outcomes of ChildCRD with an academic librarian; this was iteratively refined and finalised after peer-review by other librarians. We included English language articles published from Jan 1990 Oct 2017 in MEDLINE, EMBASE, and Scopus. Case reports, case series, editorials, letters, or short reports were excluded. We supplemented our search by hand-searching references in review articles. Information on outcomes, prognostic factors, and study designs was recorded. Studies were graded independently by 2 reviewers (after prior training for agreement) using the Quality in Prognosis Studies (QUIPS) risk-of-bias tool which examines quality in 6 study domains. Authors were contacted as necessary for further information or clarification.

Results: Of 2109 studies, we identified 3 publications (G1) studying SLE patients. None studied other ChildCRD. Two papers were from a single study and studied both SLE and juvenile arthritis; we only used SLE patients' information. Three additional manuscripts (G2) studied childhood- and adult-onset patients but did not report outcomes separately. All G1 publications were from North America (2 Canada, 1 USA). 193 patients in 2 studies were examined; 1 study had longitudinal (non-inception) design. Only G1 studies have data for report. Patients' disease durations were a mean of 7.6–15 years and the mean ages at study were 23–29 years. Half of the patients were employed. Lower disease activity, better physical function, and higher education were associated with longitudinal employment in 1 study; greater independence and social support were associated with employment in another. One study showed psychosocial and work context factors to be associated with absenteeism, disease activity with job disruptions, and fatigue and work context factors with lost productivity. Of QUIPS-graded G1 publications, study populations and confounding were at moderate-high risk-of-bias. Study outcomes, prognostic factors, and statistical analyses were at low-moderate risks-of-bias. Attrition was low in the longitudinal study.

Conclusions: Currently, there is minimal information on employment outcomes in ChildCRD adults except for few studies on SLE; information about other ChildCRD is needed. Study populations and confounding are at moderate-high risks-of-bias, limiting the generalizability. More information on employment outcomes, the specific aspects of employment, disease and non-disease related prognostic factors affecting employment are needed.

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THU0583

PAIN INTERFERENCE ASSOCIATED FACTORS IN A COHORT OF FINNISH YOUNG ADULTS WITH JUVENILE IDIOPATHIC ARTHRITIS

K. Rebane¹, T. Orenius², L. Ristolainen², H. Relas³, H. Kautiainen⁴, R. Luosujärvi³, H. Säilä², K. Aalto¹. ¹Children's Hospital, University of Helsinki and Helsinki University Central Hospital; ²Orton Ortopaedic Hospital, Orton; ³Rheumatology, Helsinki University Central Hospital; ⁴Department of General Practice and Primary Health Care, University of Helsinki and Helsinki University Central Hospital, Helsinki, Finland

Background: Pain is one of the most distressing and persisting features of JIA and frequently interferes with everyday life.

Objectives: This study was conducted to find out the factors associated with pain interference in young adults (aged 18 to 30 years) with JIA.

Methods: 195 adult patients with JIA were eligible for the study. Associations between patients reported outcome data and pain interference were examined. Sociodemographic and clinical data were analysed. Pain interference was measured by a single item from the RAND 36 questionnaire. Five response categories were coded into different groups: patients reporting "extremely" and "quite a bit" or "moderate" were classified having significant pain interference; "a little bit" as having minor pain interference; and "not at all" as having no pain interference. Functional disability was measured by HAQ, depressive symptoms were measured by Beck Depression Inventory-II, self-esteem was assessed by Rosenberg Self-

Esteem Scale, and anxiety was assessed by PASS-20. Leisure time physical activity (LTPA) metabolic equivalent (MET) score was calculated.

Results: Pain intensity scores were higher in patients expressing significant pain interference (mean 5.3, SD 2.1) and minor pain interference (mean 2.8, SD 2.09); p for linearity <0.001, thus the mean pain intensity for the whole study group was quite low (mean 2.3, SD 2.3). Of the 195 patients 98 (50.3%) reported no pain interference, 59 (30.3%) reported minor pain interference, and 39 (20%) reported significant pain interference. We found that pain interference was associated with older age ($p=0.029$), female gender ($p=0.028$) and receiving antirheumatic treatment ($p=0.032$), analgesics ($p<0.001$), antidepressants ($p=0.008$), and opioids ($p<0.001$). Also cohabiting ($p=0.003$), LTPA MET ($p=0.032$), smoking (0.006), being more disabled ($p<0.001$), having fewer leisure time activities ($p<0.001$) or having co-morbidities ($p=0.006$), and headache ($p<0.001$) were associated with having pain interference. Higher anxiety scores were associated with more pain interference ($p<0.001$). When controlling for gender, age, depression, LTPA MET, disability, life situation, disease remission, analgesics, antidepressants, and pain intensity, all subscales in PASS-20 were significantly associated with higher pain interference levels: cognitive anxiety ($p=0.004$), escape/avoidance ($p<0.001$), fear ($p=0.001$), psychological anxiety ($p=0.016$).

Conclusions: Half of the JIA patients reported pain interference, and they also expressed higher pain scores. Age, gender, using antirheumatic drugs, antidepressants, analgesics or opioids, cohabiting, lower LTPA MET score, disability, smoking, co-morbidities, lack of activities, and suffering anxiety were most significantly related to pain interference. Our study highlights the need to develop better strategies for pain-relieving interventions and for supporting patients' health-behaviour in order to achieve better pain outcome in young adults with JIA.

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THU0584

VITAMIN D STATUS IN PATIENTS WITH JUVENILE IDIOPATHIC ARTHRITIS AND ITS ASSOCIATION WITH DISEASE ACTIVITY AND PROGRESSION – RESULTS FROM THE INCEPTION COHORT ICON

C. Sengler¹, J. Zink¹, J. Klotsche¹, D. Foell², M. Niewerth¹, I. Liedmann¹, G. Homeff³, J.-P. Haas⁴, K. Moenkemoeller⁵, A. Thon⁶, K. Minden¹. ¹Epidemiology unit, GERMAN RHEUMATISM RESEARCH CENTRE, Berlin; ²Department of Paediatric Rheumatology and Immunology, University of Muenster, Muenster; ³Asklepios Clinic Sankt Augustin, Sankt Augustin; ⁴German Centre for Paediatric and Adolescent Rheumatology, Garmisch-Partenkirchen; ⁵Clinics of the City of Cologne, Cologne; ⁶Hannover Medical School, Hannover, Germany

Background: Vitamin D has been shown to have immunomodulatory properties in addition to its well-established role in the maintenance of mineral homeostasis and bone health. Conflicting data have been available regarding vitamin D status in children and adolescents with juvenile idiopathic arthritis (JIA) and its influence on the disease.

Objectives: To determine 25–0 hour-vitamin D3 (25-OHD) levels in patients with JIA, and to evaluate whether 25-OHD levels are associated with disease activity and disease course.

Methods: Serum 25-OHD levels were determined in a pair of serum samples from patients with JIA who were enrolled in the JIA inception cohort study ICON and prospectively followed for three years. The frequencies of 25-OHD deficiency (defined as <20 ng/ml) and 25-OHD sufficiency (≥30 ng/ml) were determined and compared with those of the age-, sex- and ethnicity-matched general population (KIGGS study). The association of 25-OHD levels and the likelihood for uveitis were analysed by a Cox-proportional hazard model. Logistic regression analysis was used to investigate the predictive value of 25-OHD in terms of disease progression into extended oligoarthritis (OA).

Results: In 360 patients with early JIA (48% OA, 27% rheumatoid-factor negative polyarthritis), 25-OHD levels were determined twice: after a median disease duration of 6.6 and of 13.0 months. The mean 25-OHD level of all JIA samples was insufficient (22.1 ng/ml, SD 7.8), but significantly higher than that of the control population (18.4 ng/ml, SD 10, $p<0.001$). Vitamin D levels decreased with age in patients and controls, but did not differ between males and females.

An insufficient mean 25-OHD level was found in 40% of JIA patients and in 25% in both samples each, sufficient levels in 13% and 7%, respectively. There were no significant differences in 25-OHD levels among the JIA categories. Disease activity, measured by the cJADAS-10, was inversely correlated with the first 25-OHD level ($\beta=-0.20$, 95% CI $-0.37, -0.03$, $p=0.018$), especially in 141 DMARD-naïve patients ($\beta=-0.26$, 95% CI $-0.44, -0.01$, $p=0.041$). Up to the 3-year-follow-up, 17% (61/360) developed uveitis, and 30% (52/173) of OA patients an extended OA. While 20% (17/87) of those with 25-OHD deficiency at both measurements were affected by uveitis, this applied to only 9% (2/23) in those with sufficient levels. Multivariable regression analysis revealed that the 25-OHD level was significantly associated with the risk to develop uveitis (Hazard ratio 0.95, 95% CI 0.91, 0.99, $p=0.008$). Twelve out of 29 (41%) patients with OA and two deficient