Conclusion: We found that many paediatric rheumatologists did not mark a score of 0 for patients who they found not to have active joints. The presence of pain in joints not meeting the definition of active joint used in JIA was the main determinant of this phenomenon.

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POS0335 IMPROVED PAIN COPING SCALE FOR CHILDREN AND THEIR CAREGIVERS

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Background: Pain can be a problem in a subgroup of juvenile idiopathic arthritis (JIA) patients even though in clinical remission. This can at least partly be due to their pain coping strategy of catastrophizing [1]. In a chronic disease such as JIA, the quality of coping with pain is crucial. The importance of coping with pain is well recognized in children [2]. The understanding of the parental role in supporting the child in pain is growing [3]; yet measuring the precise mechanism of parental pain coping is less studied. Thus, it seems important to measure also parental coping quality.

Objectives: The aim of this study was to develop a pain coping scale (PCSpar) for assessing the parents' coping strategies to their child´s pain and a shorter improved PCSped for children feasible for use in clinical practice.

Methods: The original pain coping questionnaire (PCQ) [4] has been validated in Finnish [5] resulting in a 38-item, eight-factor structured PCQ. The items in the new version of PCQ were reduced into twenty by an interdisciplinary team (mPCQped). A corresponding scale was created for parental use (mPCQpar). Consecutive patients aged 8-16 years, visiting pediatric rheumatology outpatient clinic, reporting musculoskeletal pain during the last week before visit or longer, were recruited to participate in this study. Both the patient and the caregiver rated the child's pain VAS from 0 to 100, completed the mPCQped /the mPCQpar and Children´s Depression Inventory (CDI) [6]/the Beck´s depression Inventory (BDI) [7] as appropriate. The selection process of pain questionnaire items was performed with factor analyses. The construct validity, the associations of the mPCQ factors, CDI, BDI and pain VAS, were tested by Spearman´s correlation coefficient.

Results: The study was conducted in all five tertiary and four secondary hospitals evenly distributed throughout Finland. Of the 153 families invited to the study, 130 attended. The average (SD) age of the attending patients was 13.0 (2.3) years. Of the patients, 91 (70%) were girls. Several steps in the exploratory factor analyses preceded the final factor analyses mPCQped and mPCQpar results. The four factors retained in the new improved Pain Coping Scale for children (iPCSped) were named positive cognitive distraction, catastrophizing (CATped), seeking social support (SSSped) and behavioral distraction. The factors in the improved Pain Coping Scale for caregivers (iPCSpar) were positive self-statement, catastrophizing (CATpar), seeking social support and distraction. In both iPCSped and iPCSpar there are a total of 15 items, 2-5 items/factor. The factor´s Cronbach´s alpha reliability coefficients were satisfactory, and the goodness-of-fit statistics were good. The CATpar correlated to BDI Rs= 0.33, p<0.05 and parent's assessment of the child's pain Rs= 0.23, p<0.05 in caregivers. The CATped correlated to CDI Rs= 0.49, p<0.05 and SSSped Rs= 0.26, p=0.05 but not to patient pain VAS Rs= 0.08, p>0.05.

Conclusion: In this study, we created a shorter pain coping scale for children (iPCSped) and a novel scale for caregivers (iPCSpar). Both showed good validity and reliability.

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POS0336 COURSE OF UVEITIS IN CHILDREN WITH JUVENILE IDIOPATHIC ARTHRITIS: DATA FROM THE INCEPTION COHORT OF NEWLY DIAGNOSED PATIENTS WITH JIA (ICON-JIA) STUDY

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Background: Uveitis is an extra-articular manifestation of Juvenile idiopathic arthritis (JIA) with a prevalence of up to 20% developing most frequently in young girls and patients positive for antinuclear antibodies (ANA). Untreated and uncontrolled uveitis may lead to vision-threatening complications and even blindness.

Objectives: The main objectives of the analyses were to determine the visual prognosis, uveitis complications and necessity of ocular surgery during the first five years of ocular disease. The likelihood of achieving an inflammation-free phase or even a remission without medication were investigated.

Methods: The Inception Cohort of Newly diagnosed patients with JIA (ICON) was initiated in 2010 in order to prospectively follow JIA patients up to 10 years after JIA disease onset. 953 Patients were assessed at enrollment, three-monthly during the first year, and six-monthly afterwards by a standardized physician's and patient's case report form including clinical parameters, treatment data and several laboratory parameters such as ESR, CRP or S100A12. Patients who developed uveitis underwent a regular ophthalmological assessment. The treating ophthalmologist three-monthly completed an additional questionnaire, documenting the anterior chamber (AC) cell grade, current uveitis activity (UA) and UA during the previous three months, best corrected visual acuity (BCVA), uveitis-related complications, previous ocular surgery, current topical treatment

and clinical course of uveitis and additional parameters. Inactive uveitis was defined by AC cell grade of 0, quiescence of uveitis by inactive uveitis for at least 6 months, and remission by inactive uveitis for at least 6 months without topical steroids or systemic anti-inflammatory medication (steroids or DMARDs).

Results: A total of 133 children developed uveitis in the JIA disease course, of which 97 patients were documented via the ophthalmological questionnaire for at least two years resulting in a mean follow-up of 5.8 years (SD 1.8). 76% were female, 86% ANA positive, 70% oligoarthritis, and 22% rheumatoid factor negative polyarthritis and mean age at JIA onset was 3.1 (SD 2.1) and uveitis onset at 4.4 (SD 2.2) years. The mean duration between JIA onset and uveitis onset was 15.7 (SD 15.6) months. At least one ocular complication was reported for 24% of patients at first uveitis documentation and 47% of patients had at least one ocular complication until the five year follow-up. Among those, posterior synechiae (31%) and cataract (27%) were the most frequent, followed by an increased IOP (12%) with or without glaucomatous changes. Ocular surgery was rarely necessary, and visual acuity remained quite good in the majority of patients: After five years, >90% had BCVA of <0.4 LogMAR (Logarithm of the Minimum Angle of Resolution), and 63.5% even of <0.1 LogMAR. About half of the uveitis patients were already treated with DMARDs at uveitis onset. The rate of treatment with biological DMARDs increased from 10% at first uveitis documentation up to 20% at 5-year follow-up. Three in four patients were treated with topical steroids at first assessment, whereas this proportion decreased to 43%. 80 of 97 patients (83%) achieved uveitis quiescence during the first five years of disease, with more than 50% experiencing more than one episode (mean 1.5 episodes (SD 1.0)) during this time period. The mean duration of uveitis quiescence was 23.2 (SD 15.6) months. A total of 39 (40%) patients achieved uveitis remission during follow-up. The likelihood of remission was associated with a lower JIA disease activity (cJADAS10), lower erythrocyte sedimentation rate (ESR) and a higher age at JIA disease onset.

Conclusion: The rate of ocular complications is already remarkable at uveitis diagnosis, and increases during uveitis disease course despite anti-inflammatory treatment. However, the visual acuity frequently remains unaffected, and the majority of patients achieve uveitis quiescence and even 40% uveitis remission within 5 years of follow-up.

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POS0337 DISTINCT CLUSTERS OF JIA AT METHOTREXATE INITIATION IDENTIFIED USING TOPOLOGICAL DATA ANALYSIS

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Background: Stratified medicine requires the identification of unique strata of a disease within which to base prognostic and treatment decisions. Juvenile idiopathic arthritis (JIA) offers a unique challenge in its inherent heterogeneity. The current ILAR classification, whilst useful for clinical categorisation, does not correlate with treatment outcomes. Therefore, further refinement, clustering and correlation of patient characteristics with treatment response are urgently required.

Objectives: To identify novel, phenotypically consistent subgroups of children and young people (CYP) with JIA at the point of starting methotrexate, across 19 patient and disease characteristics.

Methods: MTX-naïve CYP with JIA were selected if enrolled prior to April 2021 in one of four national JIA studies contributing to the UK CLUSTER consortium. Data from 19 harmonised study variables were extracted at point of starting MTX. Topological data analysis using a Gower similarity metric was used to identify clusters with distinct characteristics. Intervals and percent overlap between clusters were varied until an optimal model identified stable, potentially clinically plausible clusters. Significant differences in characteristics between identified clusters were tested using Kruskall-Wallis and Chi-Squared statistics.

Results: Of 2915 CYP included, the majority were female (68%), of white ethnicity (90%); with the most common ILAR categories being oligoarthritis (35%) and RF-negative JIA (34%).

The optimal TDA model identified six clusters which significantly differed across 16 of the 19 clinical variables at MTX initiation: Adolescents with low-moderate disease (Cluster 1, 41%), adolescents with predominantly sJIA and moderate-high disease (Cluster 2, 4%), children with predominantly sJIA and high disease (Cluster 3, <1%), children with oligo/RF-polyarthritis and low-moderate disease (Cluster 4, 43%) and two ANA-positive groups of largely females with moderate (Cluster 5, 11%) and high (Cluster 6, 1%) disease (Figure 1). Clustered groups also significantly differed in gender proportions (p<0.001), ethnicities (p<0.001), history of uveitis (p<0.001) and disease duration to both diagnosis (p<0.001) and MTX initiation (p<0.001), but did not differ in limited joint count (p=0.117), height (p=0.245) or BMI (p=0.394) z-scores.

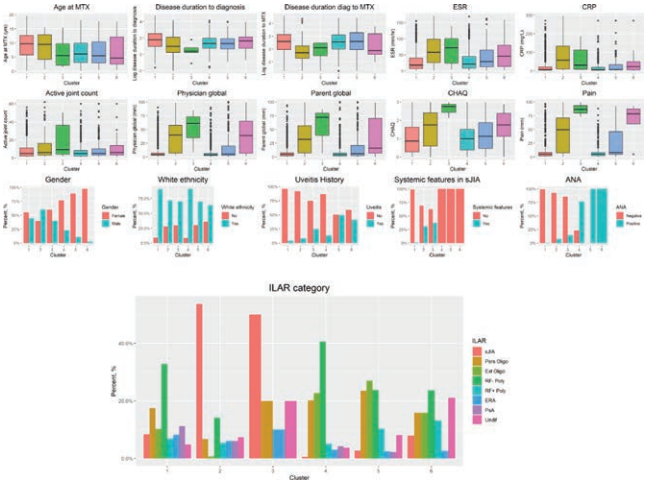

Figure 1. Clusters identified at MTX initiation in children and young people recruited to the UK BSPAR-ETN, BCRD, CAPS and CHARMS studies.

Conclusion: This study shows substantial heterogeneity in JIA at the point of MTX initiation, with six clusters identified across 19 demographic and clinical variables. ILAR categories across clusters were not always indicators of disease activity or symptom burden. Future analyses will correlate MTX treatment response within each cluster to understand what role these combined factors may have on initial treatment response.

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POS0338 TRANSITION COMPETENCE IN YOUNG PEOPLE WITH JUVENILE IDIOPATHIC ARTHRITIS HAS IMPROVED OVER TIME

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