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VALIDITY OF THE GERMAN VERSION OF BOTH THE PARENT ADHERENCE REPORT QUESTIONNAIRE (PARC) AND THE CHILD ADHERENCE REPORT QUESTIONNAIRE (CARQ) - DATA OF THE INCEPTION COHORT OF NEWLY DIAGNOSED PATIENTS WITH JUVENILE IDIOPATHIC ARTHRITIS (ICON)

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Background: Juvenile idiopathic arthritis (JIA) is the most common chronic inflammatory rheumatic disease in childhood. A multimodal treatment is needed to reduce pain, control inflammation and maintain joint functioning. Adherence to prescribed therapies is necessary for an optimal outcome. Measuring adherence in children with JIA and their caregivers by a validated questionnaire provides important information about benefits and problems with treatment.

Objectives: To evaluate adherence in JIA patients and to validate the German version of both the parent adherence report questionnaire (PARQ) and the child adherence report questionnaire (CARQ).

Methods: The PARQ and CARQ were translated from its original English version into German and cross-culturally adapted. Parents and children completed the PARQ and CARQ 4 years after enrolment in the Inception cohort ICON. These questionnaires measure child ability (by VAS 0-100, 100 = best) related to i) general level of difficulty in following treatment, ii) frequency of following treatment, iii) negative reactions in response to treatment [i-iii] summarized to child ability total score, iv) perceived helpfulness of treatment, and 4 categorical questions on errors in medication behavior. Reliability was tested by re-administering the questionnaire after a mean of 13 days. Reproducibility was analysed using intra-class correlation coefficients (ICC). VAS scores were correlated with the Pediatric Quality of Life Inventory (PedsQL) treatment scale items for convergent validity, and with sociodemographic parameters for discriminant validity.

Results: 481 parents and 465 children completed the PARQ and the CARQ, respectively, 56 parents and 37 children took part in the re-test. The mean age at assessment was 10.1±3.7 years, mean disease duration was 4.7±0.8 years. The majority of patients suffered from oligoarthritis (49%), followed by rheumatoid-factor negative polyarthritis (30%). Treatment with a DMARD received 60% (MTX 46%), 28% received a biological drug, 16% both. Disease activity measured by the clinical juvenile arthritis disease activity score-10 (cJADAS-10) was 2.6 ± 3.4 (range 0 - 30, best = 0), functional status was good (mean CHAQ 0.2 ± 0.4). Exercise and splints were prescribed to 57% and 21% of patients, respectively.

PARQ/CARQ mean child ability total scores for medication were 73.1 ± 23.3/76.5 ± 24.2, for exercise: 85.6 ± 16.5/90.3 ± 15.0, for splints: 72.9 ± 24.2/82.9 ± 16.5. About a third of parents and children reported any error in medication behavior. Perceived helpfulness was highest for medication (PARQ/CARQ 87.4 ± 20.6/83.6 ± 26.1) and lowest for splints. (PARQ/CARQ 80.8 ± 28.4/73.5 ± 33.6).

ICCs related to medication indicated good to excellent concordance (PARQ ICC = 0.69 - 0.96; CARQ ICC = 0.53 - 0.75), to exercise moderate (PARQ ICC = 0.28 - 0.45; CARQ ICC = 0.67 - 0.93) and to splints disparate concordance (PARQ ICC = 0.01 - 0.90, CARQ ICC = 0.86 - 0.93).

Scores for medications (PARQ: r 0.06 - 0.38, CARQ: 0.06 - 0.49), exercise (PARQ: r 0.03 - 0.30, CARQ: 0.01 - 0.34) and splints (PARQ: r 0.09 - 0.52, CARQ: 0.11 - 0.62) showed a fair to good correlation with the PedsQL scales. Gender and socioeconomic status were not associated with the level of adherence.

Conclusion: The German version of the PARQ and CARQ appears to be a valuable tool to measure adherence in patients with JIA and to evaluate helpfulness of treatments.

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IMPACT OF INDIVIDUAL SYMPTOMS OF PSORIATIC ARTHRITIS ON PHYSICAL COMPONENT SCORE AND MENTAL COMPONENT SCORE OF SF-36 AS A MEASURE OF HEALTH RELATED QUALITY OF LIFE (QOL): AN OBSERVATIONAL COHORT STUDY

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Background: Patients with Psoriatic Arthritis (PsA) experience diverse symptoms including skin and nail psoriasis, swollen and tender joints, enthesitis, and fatigue that have shown to impair health related quality of life (QoL). We hypothesized that different elements of disease influence SF-36 physical (PCS) and mental (MCS) component summary scores differently.

Objectives: The objective of the study was to assess the interaction between change in disease activity (DAS28CRP), PsA symptoms (psoriasis [PsO], nail PsO, enthesitis, fatigue, pain, and physical function) with changes in PCS and MCS scores in a PsA patient cohort exploring effect of treatment on clinical manifestations and patient-reported outcome (PRO).

Methods: Data were obtained from the PIPA cohort (1) at baseline and after 4 months of treatment. Patients' characteristics were described as medians with inter-quartile ranges (IQRs) and numbers with percentages. Data were presented as

Figure 1. Association between disease activity, individual symptoms and PCS/MCSPCS; physical component summary (green regression plane), MCS; mental component summary (blue regression plane). Arrows indicate the positive improvement vector. SF-36: short form-36, CI: Confidence Interval, DAS28CRP: disease activity score with 28 joints and c-reactive protein, PASI: Psoriasis Area Severity Index, SPARCC: Spondyloarthritis Research Consortium of Canada enthesitis index, VAS: visual analogue scale, PsAid: Psoriatic Arthritis Impact of Disease, HAQ: Health Assessment Questionnaire

changes between baseline and follow-up with delta (Δ) values on xyz-plots. Associations between PCS and MCS scores, DAS28CRP, and PsA symptoms were described with fitted linear regression plane models. PCS and MCS were derived from 8 domains of SF-36 and ranged from 0-100 with lower values reflecting more impaired QoL.

Results: 71 PsA patients were included in the study. 40 (56%) patients were female with a mean age of 50 (IQR 41-60) years and disease duration of 2.15 (IQR 0.2-9) years. Figure 1 shows associations between PsA symptoms, DAS-28CRP, and PCS (green regression plane) and MCS (blue regression plane). For all PROs; pain, fatigue and physical function, improvements in both Δ PCS and Δ MCS scores were associated with improvements in either Δ pain, Δ PsAID fatigue, and/or Δ HAQ, and to a larger extent than improvements in Δ DAS28CRP. Improvements in Δ nail PsO (regression coefficient (RC): -0.22) and Δ PASI (RC: -0.31) positively impacts Δ MCS, without a clear association in PCS scores (RC: 0.13 and 0.38 for Δ nail PsO and Δ PASI, respectively). Improvement in inflammatory features SPARCC enthesitis and DAS28CRP showed improvement in both Δ PCS and Δ MCS.

Conclusion: Pain and fatigue are well-known factors to impair QoL in PsA patient. Here we show that diminishing these factors, pain and fatigue, improved both PCS and MCS scores more than changes in DAS28CRP. Improvements in skin and nail manifestations impacted MCS scores and are as important as changes in joint manifestations which affect PCS and MCS scores equally.

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CORRELATION BETWEEN DISEASE ACTIVITY AND MENTAL HEALTH OF AS PATIENTS: A CROSS-SECTION STUDY WITH SELF-ASSESSMENTS BASED ON SMART SYSTEM OF DISEASE MANAGEMENT (SSDM) MOBILE TOOLS

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Background: WHO survey showed that the prevalence of anxiety and depression in Chinese population and Chinese patients with chronic diseases were between 3.1% - 4.2% and 3.1% - 7.3%, respectively. Ankylosing Spondylitis Disease Activity Score (ASDAS) and Hospital Anxiety and Depression Scale (HADS) are commonly used to evaluate AS patients' disease activity and mental health. All those assessments were mainly performed by health professionals (HCPs) with paper questionnaire previously. SSDM is a novel smart disease management tool that allows patients to do self-assessments on ASDAS and HADS by mobile terminals.

Objectives: To estimate the prevalence of anxiety and depression in Chinese patients with AS and to analyze the potential association between disease activity and mental health.

Methods: Under the guidance and training by HCPs, AS patients downloaded SSDM and performed self-assessments bundle of ASDAS and HADS with SSDM. ASDAS ≤ 1.3 , 1.3-2.1, 2.1-3.5 and >3.5 are defined as inactive (IDA), moderate (MDA), high (HDA) and very high (VHDA) disease activity, respectively. ASDAS score ≤ 1.3 represents inactive disease status and achievement of T2T. HADS score ≥ 8 can be diagnosed with anxiety or depression.

Results: From June 2016 to Jan 2020, 1,931 AS patients (1,118 male, 813 female) with a mean age of 34.09 ± 11.86 (12-82) years and the median disease duration of 2.61 years from 207 hospitals performed bundle self-assessments for 2,477 times in total. According to the HADS and ASDAS assessment results, the prevalence of anxiety and depression in all patients was 36.7% and 39.3% respectively, which was significantly higher than that in the WHO survey in Chinese population and chronic disease patients. The proportion of patients achieved and failed on T2T was 29% and 71%, respectively. The prevalence of anxiety (A) and depression (D) was 25% and 23% among T2T achievers; and 37% and 32% among T2T failures, respectively ($p < 0.05$, $p < 0.05$).

According to ASDAS, in IDA, MDA, HDA and VHDA subgroups, the prevalence of anxiety and depression was 27%, 36%, 41%, 52% and 29%, 38%, 45%, 56%, respectively. The correlation coefficients of anxiety (A) and depression (D) with ASDAS were $r_A = 0.9908$ and $r_D = 0.9964$. It suggested that with the increase of disease activity, the proportion of AS patients with anxiety and depression increased significantly. (Figure 1)

Conclusion: The prevalence of anxiety and depression in AS patients was significantly higher than that in the WHO survey in Chinese population and chronic disease patients. Higher prevalence of anxiety and depression were associated with higher levels of disease activity. SSDM is an effective mobile interface to monitor and study entanglement of disease activity and mental health in AS patients, which build a foundation for proactive interventions in future.

Figure 1. The prevalence of anxiety and depression according to ASDAS.

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USE OF ANTI-DFS70 ANTIBODIES IN RHEUMATOLOGICAL PATIENTS WITH SUSPICION OF SYSTEMIC AUTOIMMUNE DISEASE

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Background: Positivity of dense fine speckles antibodies (anti-DFS70) has been associated with antinuclear antibodies positivity in people with no evidence of