HPR Measuring health (development and measure-ment properties of PROs, tests, devices)

Keywords: Tapering, Diagnostic Tests, Inflammatory arthritis

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Background: Rheumatologists often prescribe steroids, and long-term use can lead to suppression of the hypothalamic-pituitary-adrenal (HPA) axis, leading to Steroid Induced Adrenal Insufficiency (SIAI). Our departmental guidelines suggest patients on steroid weaning regimes should have morning serum cortisol levels once weaned to 3mg.

Objectives: To identify what proportion of cortisol levels were abnormal in patients weaning from steroids in various Rheumatological conditions. There are currently no established guidelines to identify patients for possible SIAI, which is usually only assessed if a patient develops steroid withdrawal symptoms at low doses. We wanted to investigate if SIAI was seen commonly and whether patients who had abnormal cortisol levels went on to have a Short Synacthen Test (SST), Endocrinology input and SIAI diagnosis.

Methods: Retrospective review of Rheumatology patients who had morning serum cortisol levels whilst weaning from oral prednisolone at Sheffield Teaching Hospitals. Patients identified via the Clinical Laboratory Database.

Results: Data collected Sept 19 – Oct 22, only samples taken pre-9AM assessed (n=58). 33 Female, 25 Male. Age 21-83 years; mean 65 years. Starting dose prednisolone 5mg-60mg (IQR 15-40mg). Treatment length 6-96 months (IQR 14-48). Samples taken when 84.5% (n=49) taking 3mg, 10.3% (n=6) 2mg and 5.2% (n=3) 2.5mg. (IQR cortisol). Cortisol levels <300 nmol/L in 43.1% (n=25), 300-350 nmol/L in 15.5% (n=9) and >350 nmol/L in 41.4% (n=24). 68% (n=17) of <300 nmol/L (n=25) referred for a SST. SST results were <350 nmol/L in 35.3% (n=8) and >430 nmol/L in 64.7% (n=11). All patients with SST <430 nmol/L (n=6) referred to Endocrinology. 33.3% (n=2) had ‘borderline’ SST results (421 nmol/L, 415nmol/L) and advised to wean steroids by 1mg every 4 weeks and discharged. 66.7% (n=4) diagnosed with SIAI, with only one (25%, n=1) having documented symptoms. All (n=4) had further Endocrinology investigation; 100% (n=4) had a repeat SST and pituitary function tests and 75% (n=3) had or awaiting Waking Salivary Cortisol (WSC). 75% (n=3) showed recovery of HPA axis on repeat testing and so advised to slowly wean steroids. 25% (n=1) had persistently abnormal results suggesting ongoing SIAI and advised to remain on 3mg prednisolone.

All patients with an abnormal SST (n=6) remained on prednisolone and did not change to hydrocortisone. 90.1% (n=10) of patients with an SST of <430 nmol/L referred to Endocrinology concurrently with SST request and outcome for all patients was to continue slowly weaning steroids. 32% (n=8) patients with a cortisol <300 nmol/L did not have an SST. 37.5% (n=3) had an alternative SST test; 33.3% (n=1) discharged after normal WSC, 33.3% (n=1) awaiting WSC and 33.3% (n=1) requiring a normal WSC as WSC indicated SIAI. This patient await steroid clinic and remains on 3mg prednisolone. 62.5% (n=5) had no further investigations. Outcomes: steroids continued by Rheumatology (n=3), steroids weaned by Rheumatology (n=1), too early for further tests (n=1). 15.5% (n=9) had a cortisol between 300-350 nmol/L. None had an SST due to not having symptoms, in line with our guidelines. 33.3% (n=3) had a repeat cortisol, all repeats >350 nmol/L. Outcomes: Rheumatology weaned steroids (n=5), dose increase due to flared (n=2), no further documentation (n=1), moved away (n=1).

Conclusion: 10.3% (n=6) of all patients who had a serum cortisol measure-ment had an abnormal SST and 8.6% (n=5) of all patients were diagnosed with SIAI. Only one patient had documented symptoms of SIAI. Given the introduction of the more sensitive WSC as an alternative to the SST we aim to modify our department guidelines in collaboration with the Endocrinologists. In line with the 2020 National Patient Safety Association alert and 2022 British Society for Rheumatology guidance the focus is to recognise adrenal insufficiency, which our guidelines are designed to do. Adrenal insufficiency is unpredictable and rare but adrenal crisis can be fatal, so Rheumatologists must be aware of it.

REFERENCES: NIL.

Disclosure of Interests: NIL.

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THE USE OF PROMIS MEASURES IN CLINICAL STUDIES IN PATIENTS WITH INFLAMMATORY ARTHRITIS: A SYSTEMATIC REVIEW

Keywords: Inflammatory arthritis, Patient reported outcomes, Systematic review

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Background: Patient-reported outcome measures (PROMs) are of vital importance to evaluate the outcomes of inflammatory arthritis and its management, but limitations of conventional PROMs include a lack of precision and/or comparability across conditions. Patient Reported Outcomes Measurement Information System (PROMIS) measures [1-2] were developed since 2007 to overcome these disadvantages. They use a standardized metric (T-score), centered around the general population (score 50), enhancing their interpretability. The use of PROMIS measures in patients with inflammatory arthritis was recommended by the International Consortium for Health Outcomes Measurement (ICHOM) [3], but little is known about the extent and nature of their actual use in clinical research.

Objectives: To aimed to describe and outcomes of PROMIS measures in clinical studies involving people with rheumatoid arthritis (RA) or axial spondyloarthritis (axSpA).

Methods: We conducted a systematic review according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. A search of nine electronic data bases on July 29th, 2022 was conducted to identify clinical studies in patients with RA or axSpA, reporting the use of PROMIS measures and written in English, Dutch or German. Study characteristics, details of PROMIS measures and, if available, their outcomes, were extracted. Both the selection and the data extraction were performed independently by two researchers and disagreements were resolved by consensus, either or not with a third researcher.

Results: In total, 714 records were retrieved (727 unique references), of which 29 studies met the inclusion criteria (25 RA, 3 axSpA and one both RA and axSpA). In total, 15 different PROMIS measures were used, 13 of which were domain-specific and 2 pertained to general health (PROMIS Global Health, PROMIS-29). The five most frequently used domain specific measures were the PROMIS Pain Interference (n=17), Physical Function (n=14), Fatigue (n=13), Depression (n=12) and Anxiety (n=9) measures. The generic PROMIS Global Health and PROMIS-29 were both reported in 3 studies. The PROMIS measures that were used varied considerably, with a total of 74 unique identified measures, as a result of differences in their typology into Item Banks, Computer Adaptive Tests, Short Forms, the described name or the version number. In total, 21 studies reported on 98 PROMIS results in terms of T-scores, of which 91 were worse than the general population mean (score 50), indicating impaired health status. The other 8 studies did not report actual T-scores but psychometric properties of PROMIS measures (e.g. the validity, reliability, correlations with other questionnaires, responsiveness, meaningful change).

Conclusion: Given the availability of PROMIS measures since 2007 and the vast amount of clinical studies in RA and axSpA, PROMIS measures seem to be relatively underused. Among the studies there was considerate variety regarding the PROMIS measures that were used as well as their versions. The reported PROMIS outcome overall reflected the impaired health status of patients with RA and axSpA as compared to the general population. Apart from the promotion of the use of PROMIS measures, more standardization regarding the type of measures and their versions is needed to facilitate comparisons across studies.

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THE RELATIONSHIP BETWEEN DISEASE ACTIVITY LEVEL AND WRIST JOINT POSITION SENSE, GRIP STRENGTH AND DYNAMIC GRIP ENDURANCE IN PSORIATIC ARTHRITIS

Keywords: Psoriatic arthritis, Physical therapy/Physiotherapy

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Background: Dynamic grip endurance in psoriatic arthritis is one of the affected functional parameters during the disease process. However, there are limited studies about dynamic grip endurance related factors.

Objectives: To investigate the relationship between disease activity level and joint position sense and dynamic grip endurance in psoriatic arthritis.

Methods: A total of 27 PsA patients (age:53.33 ±11.85 years, women/men:16/5) who were classified by the Classification Criteria for Psoriatic Arthritis (CASPAR) criteria and followed in outpatient clinic were included in our study. The socio-demographic characteristic of all patients recorded. Disease activity level was assessed with the DAPSA score. Wrist joint position sense was evaluated by a goniometric re-position error test. Grip strength and endurance were examined by a hand dynamometer (Lafayette Professional Hand Dynamometer, USA). Data analysis was performed with Spearman Correlation Coefficient.

Results: Patients' diagnosis year, tender joint on hand, and swollen joint on hand were 4.50 years, 23, and 18, respectively. DAPSA scores were 28.67 ± 1.85 and moderate-high level. There was no relationship between DAPSA scores and joint position error and dynamic grip endurance on both sides (p>0.05). A moderate level correlation was found between the DAPSA score and grip strength on both sides (p<0.05, r=0.516 and -0.570 dominant and non-dominant side, respectively).

Conclusion: Our study showed that PsA patients had lower grip strength during the exacerbation period. Since joint position sense and grip endurance were low independents of disease activity, they may not be associated with disease activity in this study. We think that in cases where disease activity increases, approaches that protect grip strength can be added to the disease management process.

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AB1762-HPR CAN PATIENT-REPORTED OUTCOMES BE USED TO TRIAGE PATIENTS WITH ANKYLOSING SPONDYLITIS TO MOBILITY MEASUREMENTS OR TESTING OF C-REACTIVE PROTEIN?

Keywords: Spondyloarthritis, Patient reported outcomes, Outcome measures

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Background: Patients with Ankylosing Spondylitis are assessed by healthcare with regular controls of mobility and disease activity. If these controls can be replaced by valid patient-reported index, it would burden both patients and healthcare.

Objectives: In this study we analysed associations between healthcare measured mobility and disease activity and patient-reported disease activity, physical function and well-being in patients with AS.

Methods: This register-based cross-sectional study used data from 1541 visits (of which 1093 visits were men and 448 women) in the Swedish Rheumatology Quality Register. Variables for healthcare measured spinal mobility and disease activity were Ankylosing Spondylitis Metrology Index (BASMI) and C-Reactive Protein (CRP). Variables for patient-reported disease activity, physical function and well-being were Bath Ankylosing Spondylitis Disease Activity Index (BASAI), Bath Ankylosing Spondylitis Functional Index (BASI) and Bath Ankylosing Spondylitis Global Score (BAS-G). First, associations were tested with Pearsons correlation. Second, discriminative ability to identify subnormal BASMI, or CRP defined as below the 2.5th percentile of healthy individuals, and >3, respectively [1,2], was determined by means of receiver operating characteristic (ROC) curve analysis for variables with coefficients r >0.4.

Results: Associations with r >0.4 was found only between BASMI and BASFI, and BASFI and BASG (r=0.49), resulting with an area under the curve (AUC) of 0.74 (95% CI: 0.72-0.76) in the ROC analyses. Among the subquestions of BASMI/BASFI, the highest association was seen between measured cervical rotation and the self-assessed ability to look over shoulder (r=0.69), resulting in AUC of 0.85 (95% CI: 0.83-0.88) in the corresponding ROC analyses, using cervical rotation below 2.5th percentile of healthy individuals as discrimination value.

Conclusion: A significant association with r >0.4 was seen between BASMI and BASFI. The resulting AUC of 0.74 between BASMI and BASFI, and 0.85 between measured cervical rotation and self-assessed ability to look over shoulder, can be deemed as acceptable and excellent, respectively [3]. BASFI and its sub-questions may therefore be of interest for further evaluation if they could be used for screening and triaging patients to spinal mobility measurements with BASMI. Neither of the self-reported indices associated with CRP to any higher degree (r <0.4).

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