Conclusion: In this Italian RA cohort, the adherence to MD was significantly associated with a better GH, but higher MD score was not significantly associated with lower disease activity. Arterial hypertension was the only comorbidity associated with lower MD score, probably due to the fact that the prevalence of the other comorbidities was low. This study suggests an overall beneficial effect of MD in RA patients. Further studies are needed to better understand the impact of lifestyle modification (e.g. diet) in achieving RA disease control.

REFERENCES

Disclosure of Interests: None declared

Table 1 presents the number and percentage of patients with rheumatic diseases accompanied by anxiety or depression. The ratio of probable anxiety was 12% in RA, 14% in SLE, 15% in SS, 16% in AS, 19% in Gout, 11% in OA, 12% in MCTD, 14% in UCTD and 10% in PM/DM. The prevalence of probable depression was 19% in RA, 21% in SLE, 20% in SS, 21% in AS, 17% in Gout, 19% in OA, 21% in MCTD, 18% in UCTD and 16% in PM/DM.

PSYCHOLOGICAL PROFILE IN PATIENTS WITH RHEUMATOID ARTHRITIS IN CHINA: A STUDY OF HADS SELF-ASSESSMENT WITH SMART SYSTEM OF DISEASE MANAGEMENT (SSDM)

Yongfu Wang1, Li Yang2, Liyang3, Hua Wei4, Henglian Wu5, Jinli Ru5, Xiaoli Chen2, Bin Wu6, Fang He7, Li Zhenbin8, Wenzhang Fan9, Feng Wang10, Lirong Kang11, Xinpeng Sun1, Xiaojian Li12, Yuhua Jia13, Fei Xiao13, Miaojia Zhang14, SSDM College, BaoTou, China

Background: The patients with chronic diseases such as rheumatic diseases suffer from physical pain and/or disability. In addition, psychological morbidities have also been found in patients with rheumatic diseases. Hospital Anxiety and Depression Scale (HADS) is commonly applied to assess the mental health of patients with rheumatic disease. Smart System of Disease Management (SSDM) is a mobile application which has two application systems for both patients and doctors for rheumatic diseases management. The patient application system provides functions including self-assessment, medication management, adverse events management and laboratory records. After input by patients, all the data will be synchronized to the mobile terminal for further analysis.

Methods: The purpose of this study is to explore the profile of psychological morbidities in patients with rheumatic diseases.

Objectives: The purpose of this study is to explore the profile of psychological morbidities in patients with rheumatic diseases.

Methods: The patients were educated and trained to perform HADS self-assessment with MDSS. The HADS self-assessment data could be extracted from the mobile terminal for further analysis. The HADS scale consists of two subscales for anxiety (HADS-A) and depression (HADS-D) which have 7 items, respectively. Both subscales range from 0 to 21, with higher scores indicating greater anxiety and depression. A score between 11 and 21 indicates a probable case of anxiety or depression.

Results: From June 2016 to January 2019, 12,830 adults patients (81% females; 19% males) with a mean age of 43.86 ± 17.29 years from 254 hospitals performed self-evaluation of HADS using SSDM. 34 rheumatic diseases were assessed, including RA (4,594; 33%), SLE (3054; 22%), SS (1,253; 9%), AS (975; 7%), gout (607; 4%), OA (590; 4%), MCTD (490; 4%), UCTD (443; 3%), PM/DM (405; 3%), etc.

Conclusion: SSDM can be used for HADS self-assessments by patients with rheumatic diseases. RA was recorded as the most prevalent condition followed by SLE. 10% to 20% patients could be classified as probable case of anxiety or depression according to HADS scores. The prevalence of anxiety was usually lower than that of depression in patients with rheumatic diseases in this study.

Disclosure of Interests: None declared

Validation of outcome measures and biomarkers

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Disclosure of Interests: None declared

Validation of outcome measures and biomarkers

SAT0627

SAT0628

VALIDATION OF METHODS FOR PREDICTING LONG-TERM OUTCOME IN JUVENILE IDIOPATHIC ARTHRITIS: RESULTS FOR CANADIAN AND NORDIC PREDICTION MODELS IN THE NORDIC COHORT

Veronika Rydahl1, Jaime Guzman2, Andrew Herney3, Thomas Loughlin3, Mia Glenn1, Andrew Fasth3, Ellen Dahlen Amstad2, Lillemor Berritson4, Susan Nielsen5, Marek Zak6, Marite Rygg7, Kristina Aalto8, Troels Herlin9, Martin Rydahl10, Ellen Nordal11, ReACCh-Out Investigators and the Nordic Study Group of Pediatric Rheumatology (NoSPer), University Hospital of North Norway, Tromsø, Norway, 2University of British Columbia, Vancouver, Canada, 3Aarhus University Hospital, Aarhus, Denmark, 4University of Gothenburg, Gothenburg, Sweden, 5NNU – Norwegian University of Science and Technology, Trondheim, Norway, 6Uppsala University, Uppsala, Sweden, 7Rigshospitalet University Hospital, Copenhagen, Denmark, 8Helsinki University Hospital, Helsinki, Finland, 9University of Tromsø – The Arctic University of Norway, Tromsø, Norway

Background: Models predicting outcome in juvenile idiopathic arthritis (JIA) have recently been proposed by Guzman et al. and Rydahl et al. Guzman et al. constructed a model for predicting severe disease course (the ReACCh-Out outcome) in the Nordic cohort. To validate methods for prediction of long-term outcome in JIA by testing the ability of Guzman et al. model and Rydahl et al. constructed models for prediction of non-remission, functional disability and joint damage.

Methods: The Nordic cohort is a prospective longitudinal multicenter cohort from defined geographical areas of 4 Nordic countries. Children with a baseline and an 8-year study visit were included. Missing data were imputed using low rank matrix factorization, and a K-medoids algorithm was used to identify clusters corresponding to severe disease course in the ReACCh-Out study. With this outcome, the prediction model of Guzman et al. was tested with no re-estimation of parameters. A Receiver operating characteristic (ROC) curve and the corresponding area under the curve (AUC) were calculated using the published parameterization of the model.
under the curve (AUC) were computed. For the same outcome, prediction models were built using the method of Rydal et al. on randomly sampled training sets, and tested on disjoint validation sets.

**Results:** In the Nordic cohort 98/440 (22%) patients were identified with a severe disease course. This ratio is similar to the 125:610 (20%) found in the ReACCh-Out study. Characteristics of groups of patients with severe and non-severe disease course are similar in the two cohorts. The model of Guzman et al. had an AUC of 0.85 for prediction of severe disease course and an AUC of 0.66 for predicting remission off medication. In repeated cross-validations, the model of Rydal et al. had a median AUC of 0.90 (IQR 0.86-0.92) for prediction of severe disease course, and a median AUC of 0.78 (IQR 0.72-0.82) for remission off medication.

**Conclusion:** Tests in the Nordic cohort validate the ability of the model of Guzman et al. to predict severe disease course. Repeated cross-validations of the model of Rydal et al. indicate that validation results are highly dependent of the chosen outcome, and that prediction of long-term remission status is more challenging than prediction of a severe disease course.

**REFERENCES**


**Disclosure of Interests:** Veronika Rydal: None declared, Jaime Guzman: None declared, Andrew Henrey: None declared, Thomas Loughin: None declared, Mia Glerup: None declared, Anders Fasth: None declared, Ellen Dalen Arstad: None declared, Lillemor Berntsson Consultant for: Abbvie, Speakers bureau: Abbvie, Susan Nielsen: None declared, Marek Zak: None declared, Marte Rygg: None declared, Kristina Aalto: None declared, Troels Herlin: None declared, Martin Rydal: None declared, Ellen Nordal: None declared

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**Table 1.** Questionnaires performances to assess adherence in IA

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The + represents a semi-quantitative summary of the available literature with more + meaning higher/better results (from - to +++). **Conclusion:** Four questionnaires are being used to measure medication non-adherence in IA; the most used is the MASRI which is unfortunately unfounded and not fully validated in rheumatology. The CQR and MASRI questionnaires were the most validated in rheumatology, but the CQR is long and the MASRI only used for SLE. Thus it appears that to date, a simple, reliable and valid questionnaire to assess drug adherence is lacking.

**REFERENCES**


**Acknowledgement:** Abbvie France funded this initiative.

**Disclosure of Interests:** Deborah Puymarmond-Zemmour Grant/research support from: Abbvie, Xavier Romand Grant/research support from: Abbvie, Anna Molti Grant/research support from: Abbvie, René-Marc Filip Consultant for: Advisory board: Bristol-Myers Squibb, Christophe Richez: None declared, Alain Saraux Consultant for: Roche SAS, Speakers bureau: Chugai Pharma France, Veronika Rypdal: None declared, Jaime Guzman: None declared, Andrew Henrey: None declared, Thomas Loughin: None declared, Mia Glerup: None declared, Anders Fasth: None declared, Ellen Dalen Arstad: None declared, Lillemor Berntsson Consultant for: Abbvie, Speakers bureau: Abbvie, Susan Nielsen: None declared, Marek Zak: None declared, Marte Rygg: None declared, Kristina Aalto: None declared, Troels Herlin: None declared, Martin Rydal: None declared, Ellen Nordal: None declared

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**Sat0629**  

**THERE ARE 4 MAIN QUESTIONNAIRES TO ASSESS ADHERENCE IN INFLAMMATORY ARTHRITIS BUT NONE OF THEM PERFORM WELL: A SYSTEMATIC LITERATURE REVIEW**

Deborah Puymarmond-Zemmour, Xavier Romand, Matthieu Lavieille, Anna Molti, René-Marc Filip, Christophe Richez, Alain Saraux, Loriane Gutermann, Maryse Mezière, Maxime Dougados, Laure Gossec, Rencontres d’Experts 2017 Working Group, Paris France, Sorbonne University, Rheumatology, Paris, France, Grenoble Hospital, Grenoble, France, Cochin Hospital, Paris, France, Lille Hospital, Lille, France, Bordeaux Hospital, Bordeaux, France, Brest Hospital, Brest, France

**Background:** Insufficient patient adherence to treatments in inflammatory arthritis (IA) including rheumatoid arthritis (RA), spondyloarthritis (SpA), psoriatic arthritis (PsA), crystal-induced arthritis and connective tissue diseases (CTD) may lead to complications, unnecessary treatment switches, and increased costs. Patient adherence to treatment should be assessed, however how to evaluate it has not been determined.

**Objectives:** To assess the psychometric properties of questionnaires to measure adherence to treatment in IA.

**Methods:** We performed a systematic literature review (SLR) using three central databases (Pubmed, Cochrane, Embase) and several websites in January 2019. The scope was limited to IA (i.e., RA, SpA, PsA, CTD, crystal-induced arthritis, vasculitis, and auto-inflammatory diseases), and disease-modifying drugs (i.e., mainly conventional DMARDs, biologics and targeted synthetic DMARDs). All questionnaires were used to assess adherence were collected, then a specific search using the questionnaire name was run to obtain data on their psychometric properties including overall validity (sensitivity (Se), specificity (Sp) and Cronbach coefficient (CC), reliability, and sensitivity of change, following the OMERACT filter. These properties were analyzed semi-quantitatively.

**Results:** After screening 1209 publications and 194 other documents, 242 relevant papers were analyzed for measuring adherence (63.6% in RA, 8.7% in SpA, 6.6% in PsA, 14.5% in CIA and 19.0% in CTD). The number of articles using adherence questionnaires by disease was: 69/154 in RA, 14/21 in SpA, 27/40 in systemic lupus erythematosus (SLE), 9/16 in PsA, 8/35 in crystal induced arthritis and 4/6 in other CTD. Four questionnaires were used to evaluate drug adherence (Table 1). The most used questionnaire was the MMAS in all diseases except in RA where the CQR was more used. The CQR was validated in 85 patients with IA against as external standard, electronic medication monitoring (Se 62 to 98%, Sp 67 to 97% and CC of 0.71 to 0.85). The MASRI was validated in 55 patients with SLE against adherence based on pharmacy refill information (Se 87%, Sp 86% and CC of 0.70). The MMAS was validated in 91 patients with gout against medication possession ratio Se 81 to 93%, Sp 44 to 53% and CC of 0.54). The MARS was validated in 108 patients with RA (Se 13 to 53%, Sp 57 to 94% and CC 0.60 to 0.79). Reproducibility was correct but copyright posed issues (Table 1).

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**Conclusion:** Four questionnaires are being used to measure medication non-adherence in IA; the most used is the MASRI which is unfortunately unfounded and not fully validated in rheumatology. The CQR and MASRI questionnaires were the most validated in rheumatology, but the CQR is long and the MASRI only used for SLE. Thus it appears that to date, a simple, reliable and valid questionnaire to assess drug adherence is lacking.

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