RESULTS: 201 of 357 (56%) patients eligible to receive the questionnaire completed it. Multiple-choice questions had 100% completion and responses are presented in Table 1. 189 (94%) participants agreed that participating in RAMS was worthwhile and 180 (90%) would recommend participation to eligible friends and family. The most frequent theme in recommending the study was the desire to ‘help people’ (47%) and most respondents (57%) did not know what future research they would like carried out or did not answer.

Conclusions: The majority of RAMS participants were happy to share their experience of participation and had positive views. Many had altruistic reasons for taking part. Multiple-choice questions had high completion rates and free-text fields were less completed. More details on participant research priorities may be gained by offering options to select from. Future investigation of participant experience should also consider those lost to follow-up, participants who choose to withdraw, and potential participants who did not enrol.

REFERENCES

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SA0558
IDENTIFYING HEALTH LITERACY PROFILES OF RA AND SPA PATIENTS USING THE HEALTH LITERACY QUESTIONNAIRE

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Background: Delivery of rheumatological care is suggested to be compromised by patient health literacy. Prevalence of problematic health literacy in the Netherlands is estimated to be as high as 36%. ‘Health literacy represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health’ (Nutbeam, 1998).

A deeper understanding of diverse health literacy profiles of patients attending rheumatology clinics could facilitate development of interventions tailored to patients’ needs, in order to improve health outcomes and reduce inequities.

Objectives: To identify health literacy strengths and weaknesses among patients with Spondyloarthritis (SpA) and Rheumatoid Arthritis (RA) attending a rheumatology clinic, and identify typical ‘health literacy profiles’ based on these strengths and weaknesses.

Methods: Consecutive RA and SpA patients attending the outpatient clinic at Maastricht UMC+, the Netherlands, were invited to participate. Health literacy was assessed using the Health Literacy Questionnaire (HLQ), which includes nine dimensions (Figure 1). Socio-demographics and health-related characteristics were also collected. Hierarchical cluster analysis following Ward’s method identified clusters based on HLQ scale scores. This method groups subjects into a predefined number of clusters, based on smallest differences to the mean of all scales, creating minimal variance within each cluster, and maximum variance between clusters. Three researchers jointly examined twenty cluster solutions for meaningfulness by interpreting HLQ scales and patient characteristics. Meaningful clusters are translated into health literacy profiles using HLQ patterns and demographic data. A patient representative confirmed the identified profiles.

Results: In total, 133 patients with RA and 106 with SpA completed the questionnaire. Of these, 61% (n=146) were female, mean age was 61.6 (±13.3), 27% (n=65) lived alone, 11% (n=26) did not speak Dutch at any of their visits, 47% (n=119) were not sure whether their doctor understood them and 28% (n=71) felt dependent on their healthcare provider to understand the medical text. The amount of time spent on healthcare visits was 21 (±10) minutes. The number of visits per year was 4 (±2) visits. The HLQ showed that 47% scored below the norm and 30% scored in the average range. The most important factors for health literacy were education, smoking, medication, socio-economic status, family support and employment.

A deeper understanding of diverse health literacy profiles of patients attending rheumatology clinics could facilitate development of interventions tailored to patients’ needs, in order to improve health outcomes and reduce inequities.

Disclosure of Interests: None declared

SA0557
OUTPATIENT READMISSION IN RHEUMATOLOGY: A MACHINE LEARNING PREDICTIVE MODEL OF PATIENT’S RETURN TO THE CLINIC

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Background: Readmissions can be defined as the return of a patient to a healthcare setting after a discharged. Attention has been mainly focused on readmissions following inpatient hospitalizations. In the outpatient setting, readmissions have been far less studied. Premature outpatient discharges can have negative impacts at multiple levels, as they may prolong disability, and increase the chance of disease chronification, the demands to the immediate patient’s support system, and healthcare resources utilization. As the first step in predicting outpatient readmission, the assessment of the individual patient’s risk could be helpful to identify those subjects at greatest risk, so, in a further step we could focus the delivery of an intervention in those patients to reduce their risk.

Objectives: To develop and validate a machine learning predictive model based on Random Forest, to estimate the risk of readmission in an outpatient rheumatology clinic after discharge (outpatient readmission).

Methods: Patients stored in a departmental electronic health record from April 1st, 2007 to November 30th, 2016, and followed-up until November 30th, 2017, were included in this study. Only readmissions taking place between 3 and 12 months after discharge were analyzed. Discharge episodes were split into training, validation and test datasets. Clinical and demographic variables, including diagnoses, treatments, quality of life, and comorbidities, were used as predictors. Models were developed using Random Forest in the training dataset, though the combination of several tuning parameters. Models that maximized the area under the receiver operating characteristic curve (ROC-AUC) in the validation set were assessed in the test set. The model with the highest AUC-ROC in the test dataset was considered as the best final model.

Results: 17,473 patients (18,117 discharges episodes) were analyzed and 1,960 (10.8%) discharges episodes were classified as outpatient readmissions. 48,654 models were finally developed. The best final model showed an AUC-ROC of 0.674 a sensitivity of 0.330 and a specificity of 0.867. The most relevant variables in the model were the number of diagnoses given at discharge, follow-up duration, age, number of previous discharges, previous corticosteroids use and disability.

Conclusion: We have developed a predictive model for outpatient readmission in a rheumatology setting. Clinical, demographic characteristics as well as medication and disability were the most important predictors.

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home, 28% (n=68) were employed, and 22% and 50% had received low and medium education, respectively. Figure 1 displays identified health literacy profiles and scale scores, with greener values representing strengths and red scores representing weaknesses. Overall, the pattern indicates RA and SpA patients have similar profiles, but some represent a clear majority of SpA or RA patients and could be considered disease-specific. For example, cluster 10 includes patients who typically feel comfortable in their relationship with their doctor ( scales 1 and 6), and are rather confident in managing their health and getting the information they need ( scale 3 and 7). However, they struggle in understanding health information ( scale 9), and lack the social support needed to make health decisions and maintain good health ( scale 4). This profile appeared restricted to RA patients.

Conclusion: This study identified potential typical health literacy profiles in patients with inflammatory arthritis in clinic. Profiles reflected distinctive strengths and weaknesses on the nine health literacy dimensions. Some profiles appeared to be condition-specific, which warrants further investigation. Identified profiles will feed into co-design workshops with patients, professionals and other stakeholders, in order to develop interventions to tailor the care to patients’ needs.

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A QUALITATIVE STUDY EVALUATING NEAR-PATIENT TOOLS INCLUDING A MOBILE APPLICATION FOR EARLIER RA REFERRAL; POTENTIAL TO REDUCE CHRONIC DISEASE BURDEN

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Background: Rheumatoid arthritis (RA) is a chronic, debilitating autoimmune disease. Patients who are treated with disease modifying therapy within 6-12 weeks of symptom onset have better outcomes which leads to a reduced economic burden of disease. Technology that enables near-patient blood testing coupled with digital health applications may increase the proportion of patients treated within this window. Objectives: This study aimed to assess the perceived unmet need for early treatment amongst clinicians and patients as well as their perceptions of a near-patient blood test and digital health mobile application.

Methods: 74 participants, approximately half from each of Canada (n=38) and the US (n=36) participated in a combination of in-depth interviews and surveys for 40-50 minutes. 38 of the 74 subjects, consisted of 16 rheumatologists, 14 primary care physicians (PCPs) and 8 RA patients. To supplement the patient study-sample, 36 additional patients completed an online survey of quantitative and open-ended questions focused on diagnosis and perspectives of a described near-patient blood test and mobile application. Rheumatologists who were full-time practice and PCPs who see at least 15 RA patients a month were included. Patients were between 18 and 60 years old, had an RA diagnosis and experience using apps for health management.

Results: From 98 patients treated with original ETN in our department, 89 were switched to his biosimilar. The remaining ones maintained the treatment with the reference biological product for several reasons. Eight patients were excluded from this analysis due to poor adherence to treatment (n=4) and early interruption of treatment (n=4: due to surgery (n=1), respiratory infection (n=1), suspected allergic reaction to biosimilar (n=1) and own initiative (n=1)). Of the remaining 81 patients (58% female, mean age 56.2±12.1 years), 38.3% had RA, 40.7% SpA, 18.5% PsA and 2.5% JIA. Disease activity was stable over the follow up in patients with RA, PsA and SpA as no statistically significant differences were observed in acute phase reactants, patient or physician global assessment between the three time points. Minor adverse events were reported by 2 patients (pain and local cutaneous reaction), 2 reported sense of disease exacerbation in the first three months that was not confirmed by clinical and analytical evaluation and 2 patients reported minor infections.

Disclosure of Interests: None declared


ONE TERTIARY RHEUMATOLOGY DEPARTMENT ETANERCEPT IN PRACTICE

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This study aimed to assess the perceived unmet need for near-patient blood testing coupled with digital health applications may increase the proportion of patients treated within this window.

Objectives: To evaluate the clinical consequences of a non-medical switch of etanercept (ETN) original to biosimilar in a clinical practice.

Methods: The study included all patients aged 18+ treated in a Tertiary Rheumatology Department with original ETN who were switched to his biosimilar following a decision by the hospital administration, accepted by the Rheumatology Department.

Results: From 98 patients treated with original ETN in our department, 89 were switched to his biosimilar. The remaining ones maintained the treatment with the reference biological product for several reasons. Eight patients were excluded from this analysis due to poor adherence to treatment (n=4) and early interruption of treatment (n=4: due to surgery (n=1), respiratory infection (n=1), suspected allergic reaction to biosimilar (n=1) and own initiative (n=1)). Of the remaining 81 patients (58% female, mean age 56.2±12.1 years), 38.3% had RA, 40.7% SpA, 18.5% PsA and 2.5% JIA. Disease activity was stable over the follow up in patients with RA, PsA and SpA as no statistically significant differences were observed in acute phase reactants, patient or physician global assessment between the three time points. Minor adverse events were reported by 2 patients (pain and local cutaneous reaction), 2 reported sense of disease exacerbation in the first three months that was not confirmed by clinical and analytical evaluation and 2 patients reported minor infections.

Disclosure of Interests: None declared,

EARLIER RA REFERRAL; POTENTIAL TO REDUCE CHRONIC DISEASE BURDEN

SAT0559 IMPACT OF BLOCK SWITCH TO BIOSIMILAR ETANERCEPT IN PRACTICE – AN EXPERIENCE FROM ONE TERTIARY RHEUMATOLOGY DEPARTMENT

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Background: Biosimilars of biotechnological agents represent an important opportunity to increase accessibility to these medications. Clinicians still maintain reservations regarding the similarity of their efficacy and safety in practice.

Objectives: To evaluate the clinical consequences of a non-medical switch of etanercept (ETN) original to biosimilar in a clinical practice.

Methods: The study included all patients aged 18+ treated in a Tertiary Rheumatology Department with original ETN who were switched to his biosimilar following a decision by the hospital administration, accepted by rheumatologists. Patients were informed of the switch prior to its occurrence, in simple terms underlining the similarity in terms of regulatory issues and scientific evidence. Disease activity, adverse events and adaptation to the drug delivery system were evaluated at each visit. Disease activity at baseline (time of switch), 3 and 6 months after was compared using Paired samples T-test or Wilcoxon test as adequate. A p<0.05 was considered statistically significant. Continuous variables are presented as means and categorical variables as proportions.
patient blood test that could have meant an earlier diagnosis over a traditional laboratory blood test.

Conclusion: It is difficult for PCPs to identify for early referral and treatment within 6-12 weeks of symptom onset. The clinicians and patients we surveyed reported positive perspectives regarding near-patient blood tests and mobile applications and welcome their use to assist with earlier referral and treatment. With the emergence of innovative near-patient technologies, opportunities exist to intervene earlier and potentially reduce the social and economic burden of chronic diseases.

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SAT0561 DIAGNOSTIC ACCURACY OF GOUT IN ELECTRONIC HEALTH RECORDS AND THE ROLE OF RHEUMATOLOGY ELECTRONIC CONSULTS
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Background: Gout is the most prevalent inflammatory arthritis globally. Despite treatment advances, it still has a significant effect on quality of life and healthcare costs. There have been inconsistent studies on administrative coding as an accurate marker of true diagnosis. Although gout can be solely managed by primary care physicians (PCPs), complex cases often require rheumatology consultation. The wait time for an initial rheumatology clinic visit ranges from 38 days to 47 weeks. However, electronic consults (e-consults) allow for swift two-way communication between PCPs and rheumatologists (pre-consult exchange) to facilitate coordination of care among providers.

Objectives: To determine the accuracy of gout diagnosis based on ICD 9 and 10 coding, and the differences in gout outcomes based on PCP management, e-consult or rheumatology clinic visits at two Veterans Affairs Medical Centers.

Methods: A retrospective cohort study was created from 2009-2014 including 101 e-consult patients and a control group of 176 patients. In the e-consult group, 72 patients were PCD 10 coded for gout; in the control group, 116 were ICD 9 or 10 coded for gout. A blinded abstractor determined the accuracy of gout coding based on chart review and EULAR criteria. A second random sample of 183 gout patients from 2009-2014 was identified and stratified to 3 modes of management: POP only (48), e-consult (68), and rheumatology clinic visit (67). Data was reviewed for 24 months following initial gout diagnosis or e-consult. Management was evaluated based on frequency of flares and related ED visits, creatinine clearance, and serum uric acid levels (sUA).

Results: The sensitivity and specificity of ICD coding for accurate gout diagnosis was 94% and 79% in the control (PPV 88%, NPV 90%). For e-consult patients, the sensitivity and specificity was 100% and 70% (PPV 87%, NPV 100%). E-consult patients were more accurately diagnosed with gout by PCPs than in the control group (p<0.03). 83% of e-consults were resolved electronically and 17% were converted to rheumatology clinic visits. The mean wait time for e-consult recommendations was 1.8 days. The mean clinic visit wait after pre-consult exchange was 22.9 days compared to an average of 43.1 days for direct rheumatology clinic consults. Both e-consult and rheumatology clinic patients had more gout flares and related ED visits at diagnosis compared to PCP care; however, at 12 months, both groups had significantly fewer gout-related ED visits, decreased sUA, and improved creatinine clearance (p<0.05).

Conclusion: VA databases are an accurate source of gout patients based on ICD coding. When viewing e-consults, rheumatologists can rely on accurate PCP gout diagnoses, confidently answer clinical questions, and triage more efficiently. E-consult serves as an effective alternative in managing gout with shorter wait times for recommendations and appointment while still reimbursing physicians at a reasonable rate. Therefore, complex gout management can be enhanced by e-consults to improve clinical outcomes, decrease gaps in care and optimize healthcare resources.

REFERENCES

Disclosure of Interests: None declared

SAT0562 BURDEN OF RHEUMATIC DISEASE AMONG KOREAN WOMEN IN CHILDBEARING YEARS BASED ON THE NATIONAL HEALTH INSURANCE SERVICE
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Background: Many rheumatic diseases (RDs) predominantly affect women in their reproductive years, and have a significant impact on childbearing, but its burden remains incompletely understood.

Objectives: The study aimed to identify the prevalence and incidence of RDs among Korean women in childbearing years, and the effect of the diseases on prevalence of comorbidities, medication use, and pregnancy rate.

Methods: From National Health Insurance Service data during 2009-2016, we identified 9,217,139 women aged between 20-44 years. Among these women, we estimated the prevalence and incidence of RDs including rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), and ankylosing spondylitis (AS). Prevalence of chronic diseases such as cancer (Ca), hypertension (HT), hyperlipidemia (HDL), and diabetes mellitus (DM) was compared in women with or without RDs. The prescription prevalence of medications including NSAIDs and corticosteroids were compared according to the presence of RDs. We also investigated pregnancy rate in women with rheumatic or chronic diseases, and control subjects without rheumatic or chronic diseases.

Results: Overall prevalence of RDs was 56.3 per 100,000 20-44 aged females, and overall incidence was 7.88 cases per 100,000 person-years. Women with RDs had increased risk for overall chronic diseases (OR 3.0), and for Ca (OR 1.3), HT (OR 1.4), HLD (OR 2.9), and DM (OR 2.8), respectively (p<0.0001). The prescription of NSAIDs and steroids was significantly more frequent in women with RDs than those without (81.62% vs 21.79% in NSAIDs, 77.83% vs 4.26% in steroids, p<0.0001). Pregnancy rate was significantly lower in women with RDs compared with the controls (15.92% vs 19.30%, p=0.001). Among women with RDs, women with RA were less likely to become pregnant (OR 0.80, p<0.0001), whereas women with SLE and AS showed no significant difference in pregnancy rate compared with the normal controls.

Conclusion: RDs are a significant burden for women in childbearing years causing increased co-morbidities and medication use and causing reduced pregnancy rate.

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