on the Internet, to clarify their average age, gender distribution, comorbidity, difficulties in diagnosing and treating, to get an idea of the most relevant online requests in this cohort.

Methods: We used technology for analyzing "big data" and processing unstructured information (semantic intelligence) (the Semantic Hub platform, which scans Google and Yandex environments). For efficient processing of text corpora, several specialized converters were used. The resulting format for these converters is an XML representation of the source data. The study was based on real-life patient cases (specialized social networks, forums, and other sources of user-generated content). Messages from pts with gout and their relatives were used. Severe gout is characterized by frequent polyarticular flares or chronic arthritis, subcutaneous tophi, the presence of concomitant conditions.

Results: A total of 16253 messages were processed, with 'gout' entered as a search word. A total of 1691 gout pts were identified. The average age of online-active pts - 47.2 years. Men 60.5%. Severe gout was identified in 194 of 1691 (11.5%) pts, with 59% of pts aged 29 to 45 years. The proportion of men among pts with severe gout is 71%. Comorbidities most often include diabetes mellitus and metabolic syndrome - 24%, CKD - 51%, arterial hypertension-14%. Pts with severe gout have 1.9 comorbidities on average, while other pts with gout - 1.1. The groups are comparable by age. Among 90 links related to medical specialties that pts visited before being referred to a rheumatologist, the first three leading positions were - orthopaedic surgeon (30%), general practitioner (25.8%), surgeon (21%). Sixty percent of pts reported that the time between the first attack and the diagnosis of gout was less than six months. The remaining 40% of pts report that this period lasted from 1 to 15 years. Less than 42% of pts were prescribed urate-lowering therapy (ULT) during internal consultation of a physician, and only 23% of physicians recommended ULT to pts with gout during online consultation. According to pts' reports, treatment includes 3 main groups of drugs: NSAIDs, intra-articular corticosteroids and ULT. Compliance with life-time ULT is very low. The most commonly requested topic on the Internet - attacks during holidays - 2426 messages, the second is held by the topic of lifestyle - 1899 messages, the third place - problems of comorbidities - 1813 references, and only in the fourth position - 1662 messages- the topic of ULT.

Conclusion: The percentage of pts with severe gout is 11.5% among gout pts who are looking for information about their condition on the Internet, which is consistent with the data from the largest original papers in the RF on the prevalence of severe gout [2]. More than a half of pts with severe gout (59%) are men aged 29 to 45 years. The decreased online activity of pts over 46 years old may be due to the low motivation for treatment of this cohort. Gout pts are rather more concerned about lifestyle than medical problems. This may also indicate the absence of the consistent compliance of this patient category to life-time therapy. Inadequate long-term therapy and late diagnosis may be the main factors for severe gout in young and active pts.

References:

- [1] Kuo CF, Grainge MJ, Zhang W, Doherty M. Global epidemiology of gout: prevalence, incidence and risk factors. *Nat Rev Rheumatol*. 2015 Nov;11(11):649-62.
- [2] Eliseev MS, Barskova VG, Denisov IS. The dynamics of clinical manifestations of gout in men (data from 7-year retrospective surveillance). *Terapevticheskiy arkhiv*. 2015;87(5):10-5

Disclosure of Interests: Ekaterina Ilinykh: None declared, Maxim Eliseev Speakers bureau: Novartis, Menarini Group, Alium

DOI: 10.1136/annrheumdis-2020-eular.5240

AB1169

RHEUMATOLOGY PATIENT PERCEPTION OF CARDIOVASCULAR RISKS: A SURVEY AT A TEACHING HOSPITAL

N. Jain¹, A. Manivannan¹, A. Mahesh¹, A. Moorthy¹. ¹University Hospitals Leicester NHS Trust, Leicester, United Kingdom

Background: It is well known that individuals with rheumatological conditions are at an increased risk for developing cardiovascular diseases (CVS) and they are the most common cause of mortality. However, there is still lack of awareness about the CVS risk among Rheumatology patients. We carried out a patient survey to assess their awareness and perception of CVS risk associated with their condition. We also assessed if the health professionals attending to these patients gave adequate education to the patients regarding the CVS risk.

Objectives: To study awareness about CVS risks among rheumatology patients

Methods: This was a prospective cross sectional survey where in multiple-choice questionnaires were distributed to consecutive patients attending rheumatology clinic. The questionnaire contained 18 questions including demographics, diagnosis, medications and their awareness of cardiovascular risks associated with their underlying rheumatic conditions. We also explored as patient attempted any Primary preventive measures for reducing the CVS risk.

Results: We collected data of 57 patients with 47% of patients were above 60 years of age with Female: Male ratio of 3:1. Rheumatoid arthritis was the most common diagnosis (60%) with others including AS (22%), SLE(5%). 32% of patients had been suffering from inflammatory disorder for >10 years and 44% believed their disease was still not fully controlled. 37% had family history of heart diseases. More than half of the patients (56%) were unaware of cardiovascular risks associated with their condition and 65% overall reported that they were not personally informed about these risks by the treating health professionals. When we analysed the newly diagnosed patients (<5years) 64% were unaware about the CVS risks which is higher compared to patients with diagnosis of >5 years. We tried to explore any ethnic differences, however the number is too small to compare. We noted that around 60% of white British with rheumatological diagnosis were not aware of CVS risk in our group. When further asked about the primary preventive measures, only 23% engage in exercise, 21% have made diet changes, 12% take aspirin, 16% have quit smoking and only 5% quit alcohol.

Conclusion: This was a small pilot study to look at the patient awareness of CVS risks associated with rheumatological conditions. Clearly there is lack of awareness among patients about CVS risks. Furthermore, most of the patients reported they were not educated about the risks from the health professionals. Majority do not engage in any kind of primary preventive measure for heart diseases. It is crucial that the health professionals actively educate patients regarding the CVS risks and the various methods through which these can be prevented. We believe patient-targeted educational programmes and behavioural interventions can be incorporated for holistic patient management.

References:

- [1] John, Holly et al. Inflammatory arthritis as a novel risk factor for cardiovascular disease *European Journal of Internal Medicine*, Volume 23, Issue 7, 575 - 579

Disclosure of Interests: Nibha Jain: None declared, Anukripa Manivannan: None declared, Aswin Mahesh: None declared, Arumugam Moorthy Speakers bureau: Abbvie, Novartis,UCB,MSD

DOI: 10.1136/annrheumdis-2020-eular.4929

AB1170

THE IMPACT OF HIGH DISEASE ACTIVITY AS MEASURED BY SLEDAI AND DRUG BURDEN-ON HEALTHCARE UTILIZATION, QUALITY OF LIFE AND WORK PRODUCTIVITY IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

Z. Touma¹, B. Hoskin², C. Atkinson², D. Bell², J. Pike², J. H. Lofland³, P. Berry³, C. Karyekar³, K. Costenbader⁴. ¹University of Toronto, Toronto, Canada; ²Adelphi Real World, Cheshire, United Kingdom; ³Global Commercial Strategic Organisation, Johnson and Johnson, Horsham, PA, United States of America; ⁴Brigham and Women's Hospital, Boston, MA, United States of America

Background: Although there is abundant literature on healthcare utilization in SLE patients, the impact of disease activity in SLE patients is not well understood.

Objectives: To quantify the impact of disease activity, as measured by SLEDAI score and drug burden, in SLE patients on health care resource utilization (HCRU), health related quality of life (HRQoL) and work productivity (WP).

Methods: Data were collected from a cross-sectional survey of 754 rheumatologists in US and EU5 from the Adelphi Real World 2010/2013/2015 Lupus Disease Specific Programmes (DSP). Physicians were asked to complete patient record forms (PRFs) for the next 5 prospectively consulting SLE patients; the same patients were asked to complete patient self-completion (PSC) forms describing how SLE affected them. PRFs collected data pertaining to the patient's diagnosis, disease history, current clinical outcomes, treatment and management history. PSCs focused on similar data collection and included patient reported outcome measures (PROs). Propensity score matching was used to assess differences in HCRU and PRO scores between SLE patients who had a low disease activity and those who had a high disease activity. Low disease activity was defined as a SLEDAI score of ≤4, a steroid dose of <7.5mg/day, and not on immunosuppressant or biologic. High disease activity was a SLEDAI score of >4, or on an immunosuppressant, biologic, or steroid dose of >7.5mg/day. Patients were matched on age, sex, and ethnicity.

Results: Data was extracted from 1278 PRFs, and 591 PSCs. Using the estimated propensity score each low disease activity patient (n=44) was matched with a high disease activity patient (n=1187). Using 1:1 matching, with replacement and allowing for ties, matching resulted in 414 high disease activity patients being used as matches for 44 low disease activity patients. Demographic data are reported in Table 1. Patients with a low disease activity were significantly less likely to be currently flaring, lower number of flares in last 12 months, less likely to have been hospitalized in the last 12 months, had fewer consultations in the last 12 months, reported better HrQoL (EQ5D), more favourable levels of fatigue (FACIT), and lower work impairment (WPAI). (Table 2).

Table 1. Demographic data

Variable	Low disease activity	High disease activity
Mean age (years)	38.1	40.0
% Female	90.7	88.2
% White/Caucasian	76.7	67.7
Mean years diagnosed	5.5	5.0

Table 2. Propensity score matching results

Outcome variable	Low active- ity mean	High active- ity mean	Coefficient	95% CI	p-value
Flared in the last 12 months	11.63	37.97	-0.26	[-0.38 – -0.14]	<0.001
Number of flares in last 12 months	0.21	0.70	-0.49	[-0.72 – -0.26]	<0.001
Hospitalised in last 12 months	4.65	14.98	-0.10	[-0.17 – -0.04]	0.001
Number of consults in last 12 months	2.84	3.52	-0.68	[-1.19 – -0.17]	0.009
EQ-5D-3L	0.78	0.88	0.10	[0.03 – 0.17]	0.004
FACIT Fatigue	34.68	39.86	5.19	[0.80 – 9.57]	0.02
WPAI overall percentage work impairment	14.42	45.35	-30.93	[-45.32 – -16.54]	<0.001

Conclusion: Systemic lupus erythematosus patients with lower levels of disease activity are less burdensome to the healthcare system and experience a significantly better HRQoL and lower levels of productivity impairment. There is a need to establish a universal definition of low disease activity as a treatment goal to benefit patient quality of life and reduce HCRU.

Study funded by Johnson and Johnson.

Disclosure of Interests: Zahi Touma Consultant of: Consultant for Janssen, Ben Hoskin Consultant of: Consultant for Janssen, Christian Atkinson Consultant of: Consultant for Janssen, David Bell Consultant of: Janssen, James Pike Consultant of: Janssen, Jennifer H. Lofland Employee of: Janssen, Pamela Berry Employee of: Janssen, Chetan Karyekar Shareholder of: Johnson & Johnson, Consultant of: Janssen, Employee of: Janssen Global Services, LLC. Previously, Novartis, Bristol-Myers Squibb, and Abbott Labs., Karen Costenbader Grant/ research support from: Merck, Consultant of: Astra-Zeneca

DOI: 10.1136/annrheumdis-2020-eular.5872

AB1171 EFFECTS OF SUCCESSIVE SWITCHES OF TWO DIFFERENT BIOSIMILARS OF ETANERCEPT ON OUTCOMES IN INFLAMMATORY RHEUMATIC DISEASES IN DAILY PRACTICE

U. Kiltz, S. Tsiami, X. Baraliakos, J. Braun. *Rheumazentrum Ruhrgebiet, Herne, and Ruhr-University Bochum, Germany*

Background: A single switch from an originator to a biosimilar product has been shown to be safe and effective in the treatment of rheumatic musculoskeletal diseases (RMDs). The availability of biosimilars has created a financial incentive to encourage switching to cheaper products ("non-medical switch"). This is naturally associated with multiple switches. However, the effect of multiple switching between biosimilars of the same reference product has not been thoroughly investigated to date.

Objectives: To assess the effectiveness and safety of systematic non-medical switching from innovator etanercept (ETN) to biosimilar ETN (SB4) and successive to another biosimilar ETN (GP2015) in adult patients with rheumatoid arthritis (RA), psoriatic arthritis (PsA) or axial spondyloarthritis (axSpA) in a real-life setting.

Methods: This retrospective study was performed in a tertiary center in adult patients with RA, PsA or axSpA who had been treated with the innovator ETN and who had been switched to two ETN biosimilars for economic reasons thereafter. The first switch from innovator ETN to the first biosimilar ETN occurred between February-May 2017 and the second switch from the first to the second biosimilar ETN occurred between September-December 2017. The end of the observation period was October 2019. Disease activity, function and adverse events (AE) were regularly assessed, and any changes in outcome were recorded during the follow-up period. The scores documented at week 12 week after the second switch were taken as primary outcome. A total of 100 patients (54 RA, 27 axSpA, 19 PsA, mean age 54.3±15.1, 46% male) who switched twice to those ETN biosimilars over a follow-up period of 21.1±7.4 months were included. The retention rate after the second ETN biosimilar switch was 89% about 6 months after the second switch. While 2 patients were lost to follow-up and 1 patient died (cardiac arrest), 7 patients discontinued due to inefficacy or AE, including one pancreatic cancer. One patient was withdrawn due to pregnancy. Overall, 14 AEs were reported in 8 patients. Among them, 4 patients switched back to originator etanercept in month 6, 1 patient re-administered GP2015 successfully in month 3 after suffering from mucosal

erosions and in 3 patients another mode of action was prescribed. The scores at week 12 of both, disease activity and function, remained unchanged (Table 1).

Table 1. Patient characteristics

	Assessment	Baseline (n=100)	SB4 Follow-up 12 weeks (n=100)	SB 4 Follow-up 24 weeks (n=100)	Second switch to GP2015 (n=100)	GP2015 Follow-up 12 weeks (n=97)	GP2015 Follow-up 24 weeks (n=89)
RA	DAS28	3,0 (1,2)	2,9 (1,4)	3,1 (1,2)	2,8 (1,4)	3,4 (2,5)	3,0 (1,4)
	HAQ	1,4 (0,8)	1,6 (0,9)	1,0 (0,9)	1,5 (0,8)	1,5 (0,8)	1,6 (0,9)
PsA	DAS28	3,8 (1,4)	1,9 (1,4)	2,8 (1,5)	3,1 (1,1)	4,5 (2,6)	3,6 (2,6)
	HAQ	1,2 (0,9)	1,0 (0,9)	0,9 (0,9)	1,0 (0,8)	1,0 (0,9)	1,2 (0,8)
axSpA	BASDAI	5,1 (2,7)	4,5 (2,6)	5,1 (3,8)	4,1 (2,2)	4,6 (2,5)	4,3 (2,4)
	ASDAS	3,4 (0,8)	2,5 (0,8)	2,7 (0,8)	3,2 (1,8)	2,7 (1,2)	2,5 (0,9)
	BASFI	4,4 (2,7)	4,3 (2,7)	4,3 (3,2)	4,6 (2,6)	4,5 (2,7)	4,8 (3,0)

*Values are mean ± standard deviation

Disclosure: Hexal funded this research

Conclusion: The retention rate after multiple switches from innovator ETN to two ETN biosimilars was close to 90%. No major changes in disease activity and function were observed in all three indications.

AB1172

IMPROVEMENT OF DEPRESSION BY JOINT SURGERY IN ESTABLISHED RHEUMATOID ARTHRITIS; RESULTS FROM MULTICENTER PROSPECTIVE COHORT STUDY FOR EVALUATION OF JOINT SURGERY ON PATIENT'S REPORTED OUTCOME

T. Kojima¹, M. Kojima², H. Ishikawa³, K. Nishida⁴, S. Asai¹, N. Ishiguro¹.
¹Nagoya University Hospital, Orthopedic Surgery/Rheumatology, Nagoya, Japan; ²Nagoya City University Graduate School of Medical Science, Nagoya, Japan; ³Niigata Rheumatic Center, Shibata, Japan; ⁴Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan

Background: Total management including reconstructive joint surgery and rehabilitation should be needed for further improvements of physical function for long-standing RA patients. In these days, it is very important to evaluate the effectiveness of joint surgery as well as drug therapy based on patient-reported outcome (PRO)

Objectives: The purpose of this study is to explore the relationship among depression, clinical variables and other PROs including physical function and to explore whether joint surgery can improve the depression.

Methods: Multicenter prospective observational cohort study was conducted among patients who underwent elective joint surgery for RA from April 2012 to March 2016 (Study registration: UMIN00012649). In this study, we collected data at baseline and at 6 or 12 months after the surgery. These data were as follow; age, sex, disease duration, drug therapies, and disease activity (DAS), TUG, and patient-reported outcome [HAQ-DI, EQ-5D (QOL), pain and BDI-II (depression)]. Correlation between BDI-II and other variables were determined using multiple linear regression analysis.

Results: Totally, 346 patients before elective joint surgery were analyzed cross-sectionally. Mean age, disease duration, pain VAS, DAS28, HAQ-DI, EQ-5D and BDI-II were 64.2 years, 17.0 years, 36.2mm, 3.02, 1.11, 0.641 and 13.0, respectively. 52.6% of elective joint surgeries were in upper limbs and 47.4% were in lower limbs. Multiple linear regression analysis showed that HAQ-DI [B:-0.099 (95%CI:-0.117- -0.08) β:-0.48] pain VAS [B:-0.002 (95%CI:-0.002- -0.001) β:-0.26] and BDI-II [B:-0.003 (95%CI:-0.005- -0.002) β:-0.19] had significant impact on EQ-5D. Furthermore, HAQ-DI [B:3.78 (95%CI:2.54- 5.06) β: 0.33] and pain VAS [B: 0.062 (95%CI: 0.023- 0.101) β 0.17] had significant impact on BDI-II. Especially, walking and eating were independent factors for BDI-II in HAQ-DI categories. These results were confirmed in longitudinal analyses using results from joint surgery in lower limbs (LL; n=138) and upper limbs (UL; n=165), respectively. BDI-II was remarkably improved from 12.1 (mean) to 10.5 in LL and from 14.2 (mean) to 11.9 in UL. Change in HAQ-DI had significant impact on that in BDI-II [LL; B:3.183 (95%CI:0.301- 6.065) β:0.229, and UL; B:2.55 (95%CI:0.19- 4.92) β:0.19] while that in painVAS did not. Especially, the improving in walking category by LL [B:1.38 (95%CI:0.06- 2.70) β:0.18] and in hygiene category by UL [B:2.11 (95%CI:0.79- 3.42) β:0.24] were relevant factors for improving of BDI-II.

Conclusion: Depression is an important patient-reported outcome for QOL in established RA patients. Improving of physical function with joint surgery in both lower and upper limbs caused improving of depression status. Rheumatologists should take the joint surgery into consideration as effective intervention for treatment of established RA patients with treatment.

Acknowledgments: This study was funded by a grant from the Ministry of Health, Labour and Welfare (h2424YN002-00) to Naoki Ishiguro.