298 cases. Organ-specific classification of triggered autoimmune diseases included cutaneous (n=7140), digestive (n=2323), endocrine (n=1701), pulmonary (n=1683), systemic/rheumatic (n=1230), neurological (n=1172), ocular (n=349), cardiac (n=322), haematological (n=106) and renal (n=96) diseases. The most frequently reported induced individual autoimmune diseases were psoriasis (n=6401), enterocolitis (n=1947), interstitial lung diseases (n=1680), thyroiditis (n=1076), hypophysitis (n=492), demyelinating CNS diseases (n=452), peripheral neuropathies (n=431), lupus (n=371), vasculitis (n=339), uveitis (n=298), vitiligo (n=256) and sarcoidosis (n=185).

Conclusions: The number and diversity of induced autoimmune disorders is increasing exponentially in parallel with the increased use of biological therapies in neoplastic diseases, which are currently representing 40% of reported cases. Management of these biologic-induced autoimmune diseases will be an increasing multidisciplinary clinical challenge in the daily practice in the next years.

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THU0666 COSTS ASSOCIATED WITH SWITCHING SUBCUTANEOUS TUMOUR NECROSIS FACTOR- α INHIBITOR IN THE TREATMENT OF IMMUNE-MEDIATED RHEUMATIC DISEASE

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Background: Few studies have investigated the costs associated with switching subcutaneous tumour necrosis factor- α inhibitor (SC-TNFi) in the treatment of immune-mediated rheumatic disease (IMRD; rheumatoid arthritis, ankylosing spondylitis, and psoriatic arthritis),¹⁻² and to our knowledge no studies have been performed in a European setting.

Objectives: The objective of this retrospective observational study was to explore costs of health care resource utilisation (HCRU) associated with switching SC-TNFi in patients with IMRD in Sweden.

Methods: Using data from Swedish Health Data Registers, adult, treatment naïve IMRD patients filling prescriptions between May 1st 2010 and December 31st 2015 for any of the currently available SC-TNFi (adalimumab, etanercept, certolizumab, and golimumab) were included. Prescriber specialty and department were used to exclude patients with SC-TNFi treatment unrelated to IMRD. A switch was defined as a filled prescription for a subsequent SC-TNFi within 60 days of first line discontinuation. HCRU, including non-DMARD medication, inpatient and specialised outpatient care, was captured 12 months pre- and post-treatment initiation. Eligible patients had at least 12 months follow-up, and were either persistent throughout or switched treatment during the follow-up period. The analysis was performed on a propensity score matched (PSM) cohort.

Figure 1. Total Cost of Health Care Resource Utilization

Abstract THU0666 – Figure 1 Total. cost of health care resource utilisation

Results: In total, 6213 eligible patients were identified, of which 5092 were persistent with their index therapy throughout the follow-up period while 1120 patients switched SC-TNFi. The PSM cohort was derived as “Persistent” vs. “Switched” with a total of 1120 matched pairs. Patients switching therapy had higher total

HCRU costs during the baseline period and maintained their average cost during the follow-up period (figure 1), whereas persistent patients decreased their average costs from the baseline period to the follow-up period. The average yearly cost during baseline and follow-up was USD 4,512 vs USD 4,690 for patients switching SC-TNFi, and USD 3,630 vs USD 2,662 for persistent patients. This corresponds to a difference in difference of USD 1,146 (p<0.001).

Conclusions: Similar to previous findings,³⁻⁴ patients switching maintained their higher costs, while persistent patients decreased their costs from baseline to the follow-up period. This further highlights the notion that persistence may not only serve as a marker for drug effectiveness, safety, and treatment satisfaction, but also for reduced HCRU and costs.

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THU0667 DISEASE, WORK AND PERSONAL RELATED FACTORS ASSOCIATED WITH PRESENTEEISM IN PATIENTS WITH RHEUMATOID ARTHRITIS: RESULTS FROM THE NATIONAL RHEUMATOID ARTHRITIS SOCIETY SURVEY (NRAS)

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Background: At-work productivity loss (i.e. presenteeism) is a major problem for patients with rheumatoid arthritis (RA) and employers and could be a marker of long-term absenteeism. To develop interventions to prevent presenteeism, a better understanding of which factors are associated with presenteeism is needed.

Objectives: To assess the association between disease and work related factors with presenteeism.

Methods: A large survey about employment amongst patients with RA was conducted in the UK using an online platform and inviting NRAS members and non-members to participate. Patients completed the multi-item Workplace Activity Limitation Scale (WALS; range 0–36 worst score), a measure of presenteeism. Other job related questions included: occupation (NS-SEC coding), job demand questions, help from colleagues (categorised into: always/often, sometimes, rarely/never) and a patient acceptable state questionnaire about work (PASS). Patients also completed the disease specific RAID questionnaire (score 0–10=worst score). Univariable and multivariable linear regression analyses were performed to assess the association between the disease and job related factors and presenteeism, adjusting for age and gender.

Results: 891 respondents were in paid work at the time of the survey (51.5% working for others, 33.1% self-employed and 15.4% on temporary sick leave). The majority of participants were women (91.5%) and 4.9% were aged 16–30, 69.2% 31–54 and 25.8% aged 55–74 years. Over half (51.5%) had a higher managerial, administrative or professional occupations, 33.1% an intermediate occupation, and 15.4% a routine/manual occupation. Mean (SD) RAID score was 5.2 (2.2). 58.2% rated their current job performance somewhat/much worse than before the onset of their arthritis. In univariable regression analyses greater disease activity, less control, lower support from colleagues and being in an unacceptable disease state (PASS) were associated with higher levels of presenteeism. In multivariable analysis, disease activity, ability to influence work and an unacceptable disease state remained statistically significantly associated with presenteeism.

Abstract THU0667 – Table 1

	N (%) or mean (SD) score	Univariable analyses R (95%CI)*	Multivariable analysis R (95%CI)*
RAID score	5.2 (2.2)	1.96 (1.80, 2.12)	1.59 (1.41, 1.78)
Job requires using a lot of force, e.g. lifting, pulling or use of tools and machines using a lot of force:			
• Never/Rarely	528/865 (62%)	1	
• Sometimes	166/853 (19%)	0.83 (-0.3, 2.03)	
• Often/Always	159/853 (19%)	2.48 (1.26, 3.70)	
Job requires a lot of standing:			
• Never/Rarely	385/853 (45%)	1	
• Sometimes	147/853 (17%)	0.44 (-0.85, 1.73)	
• Often/Always	321/853 (38%)	1.90 (0.90, 2.91)	
Job requires use of computer for more than 4 hours:			
• Never/Rarely	225/853 (26%)	1	
• Sometimes	93/85 (11%)	0.67 (-0.98, 2.33)	
• Often/Always	535/853 (63%)	-0.20 (-1.26, 0.86)	
Able to influence work:			
• Never/Rarely	214/852 (25%)	1	1
• Sometimes	244/852 (29%)	-2.13 (-3.33, -0.94)	-1.02 (-2.02, -0.03)
• Often/Always	394/852 (46%)	-4.33 (-5.42, -3.24)	-1.87 (-2.95, -0.80)
Able to take time off, small breaks, when needed:			
• Never/Rarely	268/853 (31%)	1	
• Sometimes	213/853 (25%)	-1.73 (-2.92, -0.54)	
• Often/Always	372/853 (44%)	-3.22 (-4.27, -2.17)	
How often do you get help and support from colleagues:			
• Never (reference)	67/773 (9%)	1	
• Sometimes	365/773 (47%)	-1.94 (-3.65, -0.19)	
• Often/Always	341/773 (44%)	-2.94 (-4.71, -1.17)	
PASS			
• Acceptable	387/786 (49%)	1	1
• Not acceptable	399/786 (51%)	7.10 (6.34, 7.86)	2.65 (1.78, 3.52)

Conclusions: In this large national survey in patients with RA we found that not only disease activity, but also having control, especially the flexibility to influence work and take breaks when needed, were associated with levels of presenteeism. Preventing presenteeism should therefore be aimed at managing the disease, but also toward adapting work circumstances and finding the right balance between work requirements and personal needs.

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THU0668

CHOICE OF INITIAL BIOLOGIC DISEASE-MODIFYING ANTIRHEUMATIC DRUG IMPACTS HEALTHCARE RESOURCE USE AMONG PATIENTS WITH RAPIDLY PROGRESSING RHEUMATOID ARTHRITIS

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Background: Current management of rheumatoid arthritis (RA) in the United States is often directed by payer medical policy, typically requiring a tumour necrosis factor- α inhibitor (TNFi) as a first-line (1L) biologic disease-modifying antirheumatic drug (bDMARD). Recent studies¹ suggest clinical subsets of patients with RA may benefit from early intervention with a non-TNFi bDMARD.

Objectives: To characterise 6 month healthcare resource utilisation (HRU) for patients with RA in the United States when treated with different 1L bDMARDs (1L TNFi or 1L abatacept) and assess the impact of initial bDMARD selection on 6 month HRU.

Methods: Early, rapidly progressive RA (eRPA) is a recognised clinical entity comprising a constellation of clinical and biomarker features: anti-cyclic citrullinated peptide-2 positivity (ACCP+), DAS28 (CRP) ≥ 3.2 , symptomatic synovitis in ≥ 2 joints for ≥ 8 weeks and onset of symptoms ≤ 2 years. Physicians with adult RA patients meeting these criteria for eRPA used patient medical records to provide patient data via an electronic case report form. Patients received either abatacept or TNFi in 1L. Patient characteristics and HRU in the first 6 months of bDMARD treatment were summarised and compared across treatment groups. Odds ratios (OR) of HRU were estimated using multivariable logistic regression to adjust for baseline indicators of disease severity and patient mix (age, sex, race, ethnicity, region, payer type, time from RA diagnosis to bDMARD start, baseline concomitant medication use, baseline swollen joint count [SJC], tender joint count [TJC], Clinical Disease Activity Index [CDAI], extra-articular manifestations).

Results: There were 60 abatacept and 192 TNFi patients in 1L. Mean ages at bDMARD start were 49.1 and 49.9 years, and mean times from RA diagnosis to bDMARD initiation were 1.5 and 6.4 months for abatacept and TNFi users, respectively (all $p > 0.05$). At bDMARD start, patients with eRPA treated with abatacept or TNFi, respectively, had mean SJC of 6.8 and 7.3, TJC of 10.4 and 10.2, ESR of 39.8 and 44.0 mm/h, CRP of 8.1 and 8.2 mg/L and numbers of bony erosions of 1.2 and 1.7 (all $p > 0.05$). 45% and 47% ($p > 0.05$) of abatacept and TNFi users, respectively, had concomitant oral corticosteroids at bDMARD start. A lower proportion of patients treated with abatacept had hospitalizations (72 vs 88%), emergency department (ED) visits (75 vs 90%) and MRI (65 vs 82%) (all $p < 0.05$), while use of ultrasound (82 vs 88%) and radiography (88 vs 93%) during the first 6 months of bDMARD treatment was similar. After adjusting for patient

characteristics, those treated with 1L abatacept had significantly lower odds of hospitalisation (OR 0.42; 95% CI 0.18, 0.95), ED visits (OR 0.39; 95% CI 0.16, 0.93) and MRI (OR 0.45; 95% CI 0.21, 0.97) compared with 1L TNFi (all $p < 0.05$). Adjusted odds of achieving CDAI low disease activity within 100 days of bDMARD favoured 1L abatacept vs 1L TNFi (OR 3.26; 95% CI 1.32, 8.07; $p < 0.05$).

Conclusions: After adjusting for baseline disease severity, patients treated with 1L abatacept were less likely to have hospitalizations, ED visits and MRIs during the first 6 months of bDMARD treatment compared with those who received a 1L TNFi.

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THU0669

A SELF-REPORT SYMPTOM CHECKLIST ON A MULTIDIMENSIONAL HEALTH ASSESSMENT QUESTIONNAIRE (MDHAQ) TO CAPTURE A “POSITIVE REVIEW OF SYSTEMS” AS A STANDARD, QUANTITATIVE, AND INFORMATIVE “SCIENTIFIC” CLUE TO FIBROMYALGIA SIMILAR TO MODIFIED CRITERIA FOR FIBROMYALGIA

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Background: The scientific method is based on recording information as quantitative standard data rather than as narrative descriptions, to test possible value in diagnosis, management, and outcomes. This approach generally is applied to laboratory tests and other data from high technology sources. However, information from a patient history and physical examination can be analysed for scientific validity if collected in as standard, quantitative and reproducible data. A symptom checklist of 60 items was initially designed as a review of systems to screen for symptoms and possible adverse events of medications, for which it has been helpful. It has also been observed that patients who report a large number of symptoms may provide a clue to the presence of fibromyalgia (FM); Clin Exp Rheumatol. 2004. 22:453–61).

Objectives: To compare results of a 60-item symptom checklist on a multidimensional health assessment questionnaire (MDHAQ) vs the modified 2016 revised preliminary diagnostic criteria for fibromyalgia (Sem Arth Rheum 46:319–329, 2016).

Methods: All patients seen at an academic rheumatology clinic complete an MDHAQ; J Rheumatol 2005 32:1432–9) at each visit, which includes a 60-item symptom checklist. In April-July 2017, patients also completed a questionnaire to identify the 2016 revised preliminary diagnostic criteria for FM. The likelihood of reporting each symptom by a patient with RA who did not have FM was compared to patients who met 2016 criteria for FM using a chi-square test. Receiver operator characteristic (ROC) curves were performed of the 60 symptom checklist as well as the 10 most discriminatory symptoms vs the FM criteria.

Abstract THU0669 – Table 1. Proportion of patients with rheumatoid arthritis (RA) who did not meet fibromyalgia criteria versus patients with primary or secondary fibromyalgia to meet fibromyalgia criteria who responded positively regarding the 10 most discriminatory symptoms on a symptom checklist

Symptom	RA (84)	FM (110)	Chi2*
Muscle pain, aches, or cramps	30 (35)	100 (31)	65.6367
Muscle weakness	16 (19)	82 (75)	58.6852
Dizziness	11 (13)	65 (59)	42.2875
Headaches	25 (30)	84 (76)	42.0177
Problems with thinking	7 (8)	57 (52)	40.7405
Problems with memory	12 (14)	65 (59)	39.9442
Neck pain	29 (35)	87 (79)	39.3505
Problems with sleeping	30 (36)	88 (80)	39.2017
Numbness or tingling of arms or legs	16 (19)	70 (64)	38.3709
Unusual fatigue	23 (27)	79 (72)	37.7207

*all $p < 0.001$