bias (younger patients with severe pain potentially more likely to respond than those with milder pain). The majority of support was provided informally, and this could be for a number of reasons. For example, lack of awareness/not meeting eligibility/unable to afford formal social care, or preference to be cared for by familiar persons. This should be explored in future research. These results demonstrate the burden of social care may be significantly greater than government and social care organisations are aware, with important implications for policy and planning.

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THU0552 SWITCH TO BIOSIMILAR ADALIMUMAB - IS IT COST EFFECTIVE?

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Background: Since the introduction of anti-TNF biosimilars in routine clinical practice, there has been a drive to implement the switch program for all biosimilars at the point of availability. First adalimumab biosimilar was granted marketing authorisation by the EMA in March 2017. Our Trust was aligned to NHS England strategy which required adoption of biosimilar within three months for new patients and one year for switchers. This could help deliver significant savings to the NHS whilst achieving similar clinical outcomes.

Objectives: We report our early experience of introducing adalimumab biosimilar (SB5).

Methods: A list of all patients prescribed adalimumab was extracted through our database. A 'switch' letter was drafted and sent to all patients including Imraldi information sheet. Patients were given the opportunity to contact nurse helpline for information or if disease control worsened/adverse effects developed. We reviewed all relevant records and collected data on any adverse events and disease outcome on either side of the switch. Patients were reviewed as originally planned by their respective clinicians.

Results: 198 patients were identified established on adalimumab. All had switched by October 2019 to Imraldi. Mean age of switchers was 48 (range 16-83 years). Gender distribution was equal (99 each). 35 (17%) were Asian, two Afro-Caribbean, four other and the remaining 157 (80%) were White Caucasian. 54 (27%) had RA, 81 (41%) PsA, 57 (29%) AS and six had JIA. Coprescribed DMARDs included methotrexate (n=53, 27%), sulfasalazine (n=15, 7.5%), hydroxychloroquine (n=14, 7%) and leflunomide in two individuals. 83 (42%) participants were prescribed adalimumab monotherapy.

Prior to switch, median DAS28 for RA group was 2.28 (0.57 – 6.29). Median BASDAI and spinal VAS for AS cohort was 3.3 (0.8 – 8.8) and 3.0 (0 – 9) respectively. Tender and swollen joint components for PsARC were median three (0-8 tender, 0-6 swollen) in PsA group. Only 30% of the patients had been reviewed face-to-face following the switch. Their respective median disease activity indices were not significantly different from pre-switch assessments. Fifteen (7.5%) patients switched back to the originator for following reasons; injection site reaction (n=7), loss of disease control (n=7) and inability to use the new device (n=1).

Conclusion: Our experience of switching adalimumab patients has been reasonably successful. All were happy to switch after receiving a letter and having the opportunity to contact if necessary. Substantial annual cost savings of over £300,000 have been projected for this financial year. At group level there were no major differences in disease outcomes and 90% reported no issues. However, just under 10% of those reviewed have decided to return to the originator within three months of switch with loss of efficacy and thereby confidence in the drug. We support the routine switching from originator to biosimilar adalimumab however close monitoring is required certainly in the first few weeks of dose administration.

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THU0553

A HEALTH ECONOMIC ANALYSIS OF THE USE OF COLOUR DOPPLER ULTRASONOGRAPHY AS THE PRIMARY DIAGNOSTIC MODALITY IN PATIENTS WITH SUSPECTED GIANT CELL ARTERITIS

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Background: EULAR has recommended ultrasonography (US) as first imaging modality for diagnosis of Giant Cell Arteritis (GCA)¹. For patients with a high pre-test probability who have a negative scan, the recommendation is to use another diagnostic modality like temporal artery biopsy (TAB) to make a diagnosis¹. We know that a fast-track pathway incorporating US, results in better clinical outcomes²; but there are little data on the health-economics of this approach. Since 2017, we have used ultrasonography as the primary diagnostic modality for suspected GCA. In patients with a high pre-test probability with a negative ultrasonography, we perform a temporal artery biopsy.

Objectives: To compare the cost of investigating GCA using first-line US and second-line TAB the use of TAB only. To compare the cost per definite diagnosis of GCA.

Methods: Number of cases from 2007-2009 and 2017-2019 were calculated by the number of TAB performed and number of referrals to hospital GCA clinic, respectively. Costs of the procedure were calculated as per the nationally agreed tariff by the United Kingdom National Health Service. For ease of comparison, we used the 2018/19 tariff (£1284/TAB; £51 for US)

Results: In 2007-2009, 162 cases were referred to clinic and had a TAB, of which 86 were positive. No cases had US. The 2018/19 corrected cost was £208008; the cost per positive diagnosis was £2418.70 (Table 1).

Table 1. Numbers of cases investigated for suspected GCA by TAB or US and the costs corrected to 2018/19 UK NHS tariff.

Years	No of referrals	No of TAB	No of US	No of patients with GCA	Total cost	Cost of making 1 positive diagnosis
2007-09	162	162	0	86	£208008	£2418.70
2017-19	419	69	416	142	£109812	£773.32

In 2017-2019, 419 patients were referred to the GCA clinic, 416 of whom had US for diagnosis. 3 individuals had a TAB as the first diagnostic modality and 66 others were referred for a TAB because of a high pre-test probability and negative US. The 2018/19 corrected cost of this pathway was £109812 and the cost per positive diagnosis was £773.32 (Table 1).

If all cases in 2017-2019 had a TAB for suspected GCA, the 2018/19 corrected cost would have been £537996. The estimated 2018/19 corrected savings in our center was £142728/year. The estimated 2018/19 corrected savings per definite diagnosis of GCA has dropped by £1645.37 (Table 1).

Conclusion: The EULAR recommendation of using first-line US for diagnosis of GCA followed by a TAB in cases with uncertain diagnosis after US, is highly cost-effective in the UK, resulting in cost savings of >£140K per year.

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THU0554

COMORBIDITY AND HEALTH CARE UTILIZATION IN PERSONS WITH SJÖGREN'S SYNDROME: A CLAIMS DATA ANALYSIS

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Background: Sjögren's syndrome (SS) can affect numerous organs, including the muscles, the peripheral nervous system, kidneys and lungs. Epidemiological studies assessing comorbidity and health care utilization are needed to improve health care for this multifaceted disease.

Objectives: To capture comorbidity and medication of persons with SS in a population-based cohort in comparison to matched controls.

Methods: Individuals with an outpatient diagnosis of M35.0 (ICD-10) in ≥2 quarters of a year or an inpatient diagnosis of M35.0 were identified in a German

statutory health insurance fund covering 7.2 million people. Persons in rheumatologic care were grouped by incident or prevalent diagnosis and by co-existing autoimmune disease (sSS) or primary (pSS) and compared to age- and sex-matched controls regarding comorbidity (ICD-10), medical prescriptions, hospitalization and inability to work in the previous year.

Results: In 2018, 7,374 persons (0.1%) had incident and 53,917 persons (0.73%) prevalent SS diagnosis, and 5,920 (11%) were in rheumatologic care. Of these (90% female, mean age 66 years), 3,431 (58%) had further autoimmune disease (sSS), mostly rheumatoid arthritis (80%) and systemic lupus erythematosus (13%). Compared to controls, frequent comorbid conditions in SS were hypertension, osteoarthritis, osteoporosis and depression (table 1). Systemic antirheumatic drugs were prescribed in 31% (pSS) and 66% (sSS) while < 4% received topical therapies. Glucocorticoids (7% controls/34% pSS/59% sSS), NSAIDs (28%/41%/45%), opioids (9%/15%/22%), analgesics (19%/30%/36%) and antidepressants (14%/21%/22%) were more frequently prescribed in SS than in controls, and also hospitalization (21%/32%/39%) and inability to work in persons <65 years (41%/48%/44%, median days 17/24/31) were more frequent in pSS and sSS than in controls.

Table 1 Comorbidity claims diagnoses (%) in persons with Sjögren's syndrome and controls

	Controls	pSS	sSS
N	29,910	2,489	3,431
Age in years, mean	66.0	65.2	66.6
Female, %	88.9	89.1	90.1
Keratoconjunctivitis sicca	0.5	27.9	28.3
Interstitial kidney disease	7.6	12.8	17.0
Lung involvement	0.0	1.2	1.4
Myopathy	0.0	2.4	3.0
Polyneuropathy	6.1	12.5	15.7
Hypertension	51.5	54.8	63.0
Osteoarthritis	21.9	39.9	46.9
Osteoporosis	10.3	26.6	38.1
Fibromyalgia	1.1	10.8	11.2
Depression	17.8	30.1	32.3
Hypothyroidism	12.8	20.8	19.9
Solid Tumour	8.8	10.3	9.9
Metastatic Cancer	1.1	1.2	1.8

Conclusion: SS claims diagnosis is associated with substantial comorbidity and frequent prescription of anti-inflammatory drugs, analgesics and antidepressants. The individual and societal burden of SS shows that, in addition to effective treatment strategies, intensive attention to comorbidities is important in this disease.

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THU0555

HEALTHCARE COSTS IN PATIENTS WITH RHEUMATOID ARTHRITIS SWITCHING FROM THEIR FIRST CONVENTIONAL SYNTHETIC DISEASE-MODIFYING ANTIRHEUMATIC DRUG TO ANOTHER DISEASE-MODIFYING ANTIRHEUMATIC DRUG REGIMEN

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Background: EULAR and ACR guidelines recommend a treat-to-target approach for rheumatoid arthritis (RA). For patients failing their first conventional synthetic disease-modifying antirheumatic drug (csDMARD), EULAR recommends switching to or adding another DMARD. Understanding treatment patterns, durability, and healthcare costs associated with treatments initiated after first csDMARD can help optimize treatment for these patients.

Objectives: To describe real-world healthcare costs among patients with RA who failed their first csDMARD.

Methods: The study included adults with ≥2 RA claims ≥30 days apart in a large US health claims database, who started a csDMARD regimen as the first

DMARD then switched to or added another DMARD (index date [ID], 1/1/2012–3/31/2017). All patients had continuous enrollment 1-year before and ≥1 year after ID. Treatment duration was defined as number of days from initial treatment fill until loss of treatment persistence. Unadjusted mean total annualized per-patient-per-year (PPPY) healthcare costs while on treatment were compared via analysis of variance. A generalized linear model with gamma distribution and log link was used to compare total costs adjusted for pre-index costs, patient characteristics, and type of initiated treatment.

Results: The study involved 7,816 patients (median age of 54 yrs, 74% female). Mean (standard deviation) duration of index therapy was 14.0 (12.6) months for patients overall (9.2 [10.1] for monotherapy vs 16.9 [13.1] for combination therapy, $P < .0001$).

Prior to switching, the unadjusted mean PPPY healthcare costs totaled \$12,923: \$13,923 for monotherapy vs \$12,317 ($P = .0009$) for combination therapy. Once switched, patients accrued unadjusted mean PPPY on-treatment healthcare costs of \$30,742: \$28,757 on monotherapy vs \$31,943 ($P = .0003$) on combination therapy. Figure 1 details pre- and post-ID unadjusted costs by index therapy.

Patients on non-TNFi bDMARD monotherapy had higher adjusted total healthcare cost (cost ratio [CR] = 1.58, $P = .0052$) than the total cost on JAKi monotherapy, whereas csDMARD monotherapy (CR = 0.28, $P < .0001$) and csDMARD + csDMARD(s) (CR = 0.26, $P < .0001$) had lower total cost than the cost on JAKi monotherapy. Other factors impacting costs included baseline Charlson Comorbidity Index (CCI) = 2 or ≥3 vs CCI = 1 (CR = 1.14 and 1.25, respectively; both $P < .0001$), baseline total (medical + pharmacy) healthcare costs (CR = 1.24, $P < .0001$), and baseline opioid use (CR = 1.11, $P < .0001$, Figure 2).

Figure 1. Unadjusted mean healthcare costs PPPY (US dollars) among csDMARD patients switching to or adding on another DMARD treatment.

Figure 2. Adjusted healthcare cost model for patients (N = 7,816) switching from first csDMARD to another DMARD regimen.*

*costs also adjusted for age, gender, region, payer type, index year of ID

Conclusion: Real-world data demonstrate short durability of available treatments initiated after first csDMARD. Among the initiated treatments, lowest total healthcare costs were associated with csDMARD, followed by JAKi, then TNFi, and finally non-TNFi bDMARD.

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