Table: Characteristics of G-Y, G-O, and G-OO

	G-Y	G-YO	G-OO	S.S.
Cases	207	142	227	n.s.
female (%)	154 (74.4)	103 (72.5)	167 (73.6)	n.s.
age at onset	48.1	61.8	71.4	p<0.01
age at baseline	50.8	65.1	78.1	p<0.01
ACPA	123.7	156.8	229.3	n.s.
DAS28 at baseline	2.7	3.2	3.1	n.s.
Sharp/van de Heijde score at baseline	30	46.6	65.6	n.s.
HAQ at baseline	0.292	0.478	0.84	p<0.01
PS-VAS at baseline	37.3	41.5	43.4	n.s.
DAS28<2.3 prevalence (%)	76.4	89.6	87.2	n.s.
length until DAS28<2.3 from baseline	2.9	2.5	4	n.s.
mean DAS28 at follow up	1.6	1.4	1.5	n.s.
mean DAS28 after DAS28 remission	2.0	1.8	2.0	n.s.
b-/ts-DMARD administration case and ratio (%)	41 (19.8)	29 (20.6)	41 (18.0)	n.s.
mean MTX dosage	8.6	8.6	7.4	n.s.
GCS administration dosage and ratio (until DAS28 remission)	2.96,	2.41,	2.71,	n.s.
	24.2%	38.0%	42.6%	
GCS administration dosage and ratio (after DAS28 remission)	5.68,	4.58,	2.14,	n.s.
	19.3%	21.1%	26.4%	

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AB0360

EVALUATION OF HEALTHCARE RESOURCE UTILISATION AND COSTS OF SJÖGREN'S SYNDROME: PATIENTS WITH RHEUMATOID ARTHRITIS TREATED WITH ABATACEPT OR ANTI-TNF DMARDS

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Background: Sjögren's syndrome (SS) is considered an extra-articular manifestation of RA and is an autoantibody-mediated condition similar to RA. In an open-label, prospective, observational multicentre study, abatacept (ABA) was found to be effective for both RA and SS-related manifestations.¹ However, there are limited data on the healthcare resource utilisation (HCRU) and cost in patients (pts) with RA with SS managed with ABA compared with those managed with anti-TNFs.

Objectives: To evaluate the HCRU and cost for pts with SS associated with RA treated with ABA or anti-TNF DMARDs.

Methods: Pts (≥18 years) from the Truven MarketScan™ administrative claims database with incident RA (≥2 claims for RA using International Classification of Diseases [ICD]-9 or ICD-10 codes and ≥1 claim for a conventional DMARD), incident SS (≥1 claim for SS using ICD-9 or ICD-10 codes) and with a prescription for ABA or an anti-TNF on or after the first diagnosis of SS from Jan 2011 to Sep 2017 were included. Pts were divided into two mutually exclusive cohorts. Pts with prescriptions for both ABA and an anti-TNF were excluded. The index date was the date of ABA or anti-TNF prescription. All-cause HCRU (healthcare visits) and costs were captured during the 2-year enrolled period prior to the index date (baseline) and in the 2-year enrolled follow-up period or until the pt was taken off the index drug, whichever occurred earlier. The baseline and follow-up periods were divided into intervals of 6 months each. Total healthcare visits (inpatient, outpatient, emergency care, urgent care and pharmacy) and total healthcare costs associated with these visits were calculated for each interval. A fixed-effects model was used to compare the HCRU and costs for pts taking ABA vs anti-TNFs after controlling for baseline Charlson Comorbidity Index and other comorbidities of interest.

Table 1.

Table 1. Baseline characteristics for pts in the ABA and anti-TNF cohorts

	ABA pts (n=148)	Anti-TNF pts (n=1219)
Age, years	56.0 (11.0)	53.0 (11.0)*
Female, n (%)	136 (91.9)	1065 (87.4)
Disease duration, days	336.0 (427.5)	285.0 (375.2)
CCI score	2.3 (1.6)	1.8 (1.2)*
Mean (SD) reported, unless stated otherwise		
*p<0.05 vs ABA pts		
ABA=abatacept; CCI=Charlson Comorbidity Index; pt=patient		

Results: Overall, 1367 pts met inclusion criteria, of which 148 (10.8%) and 1219 (89.2%) were treated with ABA and anti-TNFs, respectively. ABA (vs

anti-TNF) pts were older and had a higher comorbidity index (Table 1). Overall HCRU decreased in both the ABA and anti-TNF groups (relative to pts not being treated with biologic DMARDs). The HCRU was lower in ABA pts vs anti-TNF pts (average visits 20.0 vs 20.8, Figure 1) in the adjusted analysis. The average adjusted total healthcare cost for ABA (vs anti-TNF) pts was lower in the four 6-month cycles evaluated (average cost \$17,050 vs \$27,469; Figure 1). The overall healthcare costs were primarily driven by all-cause pharmacy cost (data not shown).

Conclusion: Pts with RA with SS managed with abatacept had lower HCRU and costs relative to pts managed with anti-TNFs. Further analysis is warranted to understand the drivers of the differential economic burden among pts with RA with SS.

Figure 1

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AB0360B

ANALYSIS OF SEQUENTIAL DEVELOPMENT OF PULMONARY LESIONS IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Pulmonary involvement is critical for the management of RA. Pulmonary involvement shows various features in pathology and imaging such as interstitial pneumonia (ILD) and airway diseases (ADs). Importantly, pulmonary abnormalities coexist with other ones. We have previously reported that there were coexistence patterns and ADs were shared abnormalities of patients with pulmonary lesions. However, it remains unknown through what pathways various pulmonary lesions develop.

Objectives: The purpose of this study was to determine the sequential development of pulmonary abnormalities in RA.

Methods: A retrospective cohort study. Subjects were consecutive 208 RA patients who were treated with bDMARDs as the first one from Feb.2004 to Sep. 2015 in our department and received HRCT scan before and during the therapy. Based on HR-CT imaging, pulmonary abnormalities were classified into 4 categories (ILD, nodular lesions, airway disease (AD) and others) and 20 lesions such as ground-glass opacity (GGO), reticular pattern, bronchiolitis and bronchiectasis. We recorded their existence and distribution and examined their changes. Cluster analysis was conducted according to new lesions at the second CT scans during the biological DMARDs, by Ward method. A checkerboard analysis with Chi-square test followed by residual analysis was conducted to examine the relation between pre-existing and newly emerging lesions. We compared the frequencies and pattern of newly emerging lesions in patients with or without pre-existing lesions.

Results: Subjects were 208 RA patients; M/F; 64/144, mean age; 59.2 years old, disease duration; 7.9 years, positive for RF in 84.1%. bDMARDs used for the longest period were TNF inhibitors in 79.8% of the subjects, abatacept in 15.4% and tocilizumab in 4.8%. Pulmonary

abnormalities were found in 146 (70.2%) of patients at the entry (ILD 81, (38.9%); nodular lesions 45, (21.6%); and AD 115, (55.3%)). During the observation period (3.26±2.61 years), newly emerging pulmonary lesions were found in 31.3% of patients and the incidence of which was 11.1/100 person-year. Cluster analysis of newly emerging lesions showed 7 clusters (Fig.1); Cluster 1; no new lesions, Cluster 2; nodular lesions, Cluster 3; curved linear opacities, Cluster 4; bronchioectasis, Cluster 5; consolidations, Cluster 6; new bronchiolitis, and Cluster 7; GGO.

Newly emerging lesions frequently occurred in patients with pre-existing pulmonary lesions. Notably, curved linear opacities and bronchiolitis were developed in patients without pre-existing lesions with high frequencies compared to those with pre-existing ones (Fig.1). In patients with pre-existing lesions, various lesions were developed, particularly GGO and consolidation.

The checkerboard analysis of pre-existing and newly emerging lesions revealed relation between 1) pre-existing honeycomb, small nodular lesions, bronchiolitis or bronchioectasia and newly emerging GGO and 2) pre-existing nodules and new bronchial wall thickening. In addition, bronchioectasia has the tendency to develop in patients with bronchitis, and conversely bronchiolitis occurred in patients with bronchioectasia. The relation between pre-existing small nodules or bronchiolitis and GGO was shown by analysis of pre-existing lesions and clusters of newly emerging ones.

Conclusion: Pulmonary lesions were developed in several patterns, not at random. Pre-existing pulmonary abnormalities induced new pulmonary lesions. Airway diseases, particularly bronchiolitis, might be important initial lesions that induce new pulmonary lesions, especially GGO.

Disclosure of Interests: None declared

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Fig1: Frequency of new pulmonary lesions

Figure 1

AB0360C AN OBSERVATIONAL STUDY INTO THE RELATIONSHIP OF ANTI-CYCLIC CITRULLINATED PEPTIDE ANTIBODY AND RHEUMATOID FACTOR WITH LUNG DISEASE

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Background: Extra-articular disease in rheumatoid arthritis (RA) occurs in nearly 50% of patients, the lung being a common site of complication. (1) Raised RF and anti-CCP titers have been associated with the development of pulmonary disease. Smoking in genetically susceptible individuals can result in protein citrullination and enhancement of autoimmune reactivity (2).

Objectives: Our aim was to explore the relationship between the presence of RhF and anti-CCP antibody with pulmonary manifestations in the following groups: RF positive only (group 1), Anti-CCP factors positive only (group 2) RF and anti-CCP positive in combination (group 3) we also explored the relationship between smoking, seropositivity and lung disease.

Methods: In this retrospective cross-sectional observational study of 2088 patients who had a RF and anti-CCP antibodies tested during Nov-2015 and Oct-2016 at Royal Wolverhampton Trust. Out of 2088, 1662 patients tested negative for both anti-CCP and RF and were excluded from analysis. 426 out of 2088 tested positive, of which 89 patients were anti-CCP only positive, 100 patients were RF only positive and 237 patients were positive for both antibodies. Data was collected on 89 patients from each group. Data collection included patient age, gender, smoking status, pulmonary manifestations, RF and anti-CCP titer, background of RA and current medications including DMARDS and biologics.

Results: In group 1 (30) 33.7% of RF positive patients suffered from RA, with (63) 70.7% in group 2 and (82) 92.1% in group 3(P=0.00001). In group 1 17% were current or ex-smokers, 29% in group 2 and 52.7% in group 3(P=0.02). Lung disease was present in 13.4% from group 1, 7.8% from group 2 and 12.3% from group 3 with no significant statically difference between the three groups (p=0.376). In group 2 and 3 all patients with lung disease had RA. From group 1, 50% of those with lung disease had a diagnosis of COPD, followed by 20% with bronchiectasis and 10% with ILD. Of note patients with a diagnosis of COPD had a higher titer of RF. In group 2 a third of patients with lung disease had a diagnosis of COPD and ILD respectively, and again these patients had higher titers of anti-CCP. In group 3 13.4% suffered from lung manifestations and 37.5% had a diagnosis of pulmonary fibrosis, 12.5% diagnosed with ILD and the remaining 50% had COPD and pleural disease.

Conclusion: Antibody positivity was associated with higher prevalence of RA. Our data provide evidence for the association between smoking and raised antibody titers, especially with anti-CCP antibodies. Lung disease was more strongly associated with RF than anti CCP even though the proportion of smokers was higher in patients with positive anti CCP compared than RF. However lung pathology varied with airway obstruction being more prevalent in RF positive patients compared with fibrosis in patients who were RF and CCP positive. Furthermore, our findings suggest that RF is more strongly associated with lung disease than anti CCP though citrullination is thought to start in the lungs. Our findings demonstrate that lung disease is prevalent in patients with RA and should be anticipated and treated accordingly in order to reduce mortality. Seropositivity of both RF and anti-CCP can be linked with a higher prevalence and greater severity of pulmonary disease activity however this requires replication in a larger cohort.

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AB0360D ADHERENCE TO THERAPY IN RHEUMATIC PATIENTS TREATED WITH SUBCUTANEOUS BIOLOGICS

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Background: Patients' adherence to treatments is undoubtedly a fundamental part of a successful therapeutic strategy, even for rheumatic patients. In fact, the lack of adherence to treatment should be considered in all cases of "supposed" inefficacy of therapy prescribed.

Objectives: We aimed to evaluate the adherence to treatment in a series of rheumatic patients from a single Centre (Catania, Sicily, Italy).

Methods: We recruited 85 consecutive patients (M/F: 25/60; mean age 52.713.5 years) affected by chronic inflammatory arthropathies treated with subcutaneous biologics. All patients completed the 5-item version of Compliance Questionnaire for Rheumatology (CQR 5)¹ and the Morisky Medication Adherence Scales (MMAS-8)², in order to estimate their adherence to therapy. Moreover, all patients completed the Patient Global Assessment (PGA), the Visual Analogue Scale (VAS) for articular pain, and the Health Assessment Questionnaire (HAQ), in order to estimate their personal judgments on the effectiveness of therapies. Finally, the eventual presence of adverse events were reported.

Results: Considering MMAS-8, 7/85 (8.2%) patients were low adherent to treatment (score <6), and 27/85 (31.8%) presented medium-grade adherence (score 6-7). Interestingly, the CQR 5 failed to precisely identify these patients. Adherence to therapy was not related to age, gender, education level, articular disease, adverse events, association with DMARDS. Notably, the use of etanercept (originator or biosimilar) was significant more frequent in low-adherent patients (5/7 vs. 19/78; p=0.017). Finally, a trend to higher mean levels of PGA (57.1 vs. 37.6; p=0.06), VAS (68.6 vs. 42.6; p=0.06), and HAQ (1.3 vs. 0.7; p=0.052) was reported in low-adherent patients.

Conclusion: Our preliminary study confirmed that the low adherence to therapy (better identified with MMAS-8) is a relevant issue in the management of rheumatic patients treated with biologics. Moreover, low-