Objectives: To analyze the incidence and trend of hospital admissions for CVDs in patients with RA in Spain during the period between 1999 and 2015.

Methods: We performed an observational retrospective population study analyzing the Spanish administrative database that includes a Minimum Basic Data Set (MBDS) of hospital admissions of patients with RA 1999-2015. We selected the MBDSs for CVDs, myocardial infarction (MI), ischemic heart disease (IHD), congestive heart failure (CHF), cerebrovascular disease (CeVD) and aortic aneurysm (AA). Cases were identified by the presence in primary and secondary diagnosis of ICD9 codes. The population at risk was estimated through the population census with an estimated prevalence of RA of 0.5% (0.8% women, 0.2% men). Crude and adjusted rates were calculated, and the trend was analyzed using the Generalized Linear Model (GLM) with the year as the analysis variable. SPSS statistical package version 20 (SPSS Inc, Chicago, IL) was used.

Results: 338,343 RA hospital admissions were detected in the period, being 207,597 (61.3%) due to CVDs. Table 1 summarizes the data of the six subgroups of CVDs.

Conclusions: CVDs were the first cause of hospital admissions in Spain in RA patients during the period 1999-2015. Moreover, in that period there was an increasing incidence of hospital admissions due to CVDs in all the studied subgroups, being strikingly higher in men after age-adjusted rates. An annual rate increase is estimated in all the different studied subgroups oscillating between 5 and 9% annual increasing.

	Cardiovascular disease	Myocardial infarction	Ischemic heart disease	Congestive heart failure	Cerebrovascular disease	Aortic aneurysm
Total admissions	207597	12274	37691	31765	18445	2144
Men (%)	71724 (34.5)	6809 (55.4)	19845 (52.6)	9970 (31.4)	6509 (35.3)	1492 (69.6)
Women (%)	135873 (65.5)	5465 (44.6)	17846 (47.4)	21795 (68.6)	11936 (64.7)	652 (30.4)
Mean age (SD)	72.6 (12.1)	72.24 (10.38)	72.38 (10.37)	72.4 (10.3)	72.8 (10.3)	74.52 (9.06)
Deaths (%)	14649 (7.1)	1166 (9.5)	2918 (7.5)	4224 (13.3)	2282 (12.4)	204 (9.5)
Diabetes mellitus (%)	39639 (19.1)	2971 (24.2)	9404 (25)	6681 (21)	3746 (20.3)	258 (12)
Age-adjusted rate	7497.36	440.02	1348.95	1151.25	664.11	322.89
Men	13275.48	1266.00	3685.64	1873.95	1221.71	1425.31
Women	5830.59	237.46	772.92	950.36	516.58	116.13
Age-adjusted rate increase 1999-2015	3795.03 → 9070.71	212.71 → 553.56	600.76 → 1776.24	542.62 → 1739.70	356.13 → 934.61	30.13 → 130.06
Men	6489.91 → 18200.19	598.73 → 1527.08	1704.03 → 4769.61	868.77 → 2889.88	619.66 → 1710.68	115.07 → 437.35
Women	3078.71 → 7093.63	118.21 → 312.01	425.61 → 1032.64	446.93 → 1431.47	276.31 → 721.72	10.10 → 54.83
Annual increase % estimation (CI 95%)	5.68 (1.048-1.046)	5.02 (1.041-1.051)	5.48 (1.044-1.062)	6.81 (1.054-1.082)	6.31 (1.054-1.072)	9.31 (1.076-1.107)
Relative risk men : women	2.28	5.33	4.7	1.97	2.36	12.27

Disclosure of Interest: None declared

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SAT0130

IMPROVEMENT OF NUTRITIONAL CONDITIONS IN PATIENTS WITH RHEUMATOID ARTHRITIS STARTING FIRST DISEASE MODIFYING ANTI-RHEUMATIC DRUGS

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Background: Rheumatoid arthritis (RA) is a chronic inflammatory condition, and has been associated with decreased life expectancy. Although life expectancy has improved in many RA patients recently, the reason for this is not entirely clear.

Objectives: We hypothesized that better disease activity control of RA led to relief from chronic inflammation, which resulted in better nutritional conditions, and contributed to a longer life expectancy. The aim of this analysis was to examine the relationship between RA disease control and the improvement of nutritional conditions.

Methods: We analyzed data obtained from 111 patients with RA (male 44, female 67) who were referred to our hospital and received first disease modifying anti-rheumatic drugs (DMARD) in 2016 and 2017, retrospectively. The patient data were obtained retrospectively from medical records for a 6-month period starting at the date DMARDs were initiated. We chose serum albumin (Alb), total lymphocyte count (TLC), and hemoglobin (Hb) concentration, as the indicators of the nutritional condition. Furthermore, D-values and nutrition index 40 (N.I.40), indicators of anastomotic leakage after gastrointestinal surgery were also analyzed. Comparisons between the two groups were performed using Mann-Whitney U test. Comparisons between the parameters at different time points were performed using Wilcoxon signed-rank test. The association among the ordered European League Against Rheumatism (EULAR) response rate and the magnitude of improvement in the nutritional condition were analyzed by using the Jonckheere-Terpstra test. Data on each patient's age and duration of RA were calculated as median (IQR_{1/4-3/4}) values.

Results: The patient age was 64.0 (54.0-74.5) years, and the duration of RA was 3.0 (1.0-7.0) months. Oral prednisolone (PSL) was used in 51 patients. Other drugs administered to patients over the 6-month period included: methotrexate (63 patients), iguratimod (42 patients), bucillamine (29 patients), sulfasalazine (25 patients), tacrolimus (6 patients), and bDMARD (13 patients). The level of C-reactive protein (CRP) and the disease activity score for 28 joints based on erythrocyte sedimentation rate (DAS28-ESR) before and 6 months after the initiation of DMARD treatment improved from 0.50 (0.12-1.7) mg/dL to 0.10 (0.010-0.20), $p < 0.001$, and from 4.62 (3.51-5.52) to 2.52 (1.53-3.13), $p < 0.001$, respectively. The EULAR good response was achieved in 59 patients, and moderate response was

achieved in 31 patients. Serum Alb level, Hb concentration, D-value, and N.I.40 showed significant improvement 6 months after the starting of DMARD [3.9 (3.6-4.3) vs 4.2 (4.0-4.5) mg/dL, $p < 0.001$; 12.5 (11.7-13.4) vs 12.6 (11.8-13.6) g/dL, $p = 0.0164$; 0.155 (-0.47-0.91) vs -0.26 (-0.72-0.18), $p < 0.001$; 47.2 (41.8-51.1) vs 49.8 (46.1-52.2), $p < 0.001$, respectively]. Furthermore, we found a significant trend towards improvement of serum Alb level, Hb concentration, D-value, and N.I. 40 in patients with a better EULAR response (p value for trend = 0.0124, 0.033, 0.0057, and 0.0040, respectively).

Conclusions: There was a statistically significant trend towards better nutritional improvement in patients with a better EULAR response. Control of RA may contribute not only to joint deterioration prevention, but may also help to improve the nutritional condition of patients.

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SAT0131

THE ROLE OF ULTRASOUND FOR THE ASSESSMENT OF PATIENTS WITH ACTIVE RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) a chronic systemic connective tissue disease, one of the main symptoms is inflammation that is mainly present in hands and feet. The evaluation and follow-up of disease activity relies on composite indexes with clinical outcomes. However, many studies have shown there are differences between disease activity measured by clinical examination and ultrasound findings (1).

Objectives: The aim of this study was to evaluate the utility of ultrasound in patients with RA stratified as moderate or severe disease activity based on DAS28.

Methods: We performed across-sectional study including patients with RA; patients were followed-up under T2T standards and a multidisciplinary approach. Clinical follow-up was designed by the authors according to DAS28 as follows: every 3-5 weeks (DAS28 >5.1), every 7-9 weeks (DAS28 ≥3.1 and ≤5.1), and every 11-13 weeks (DAS28 <3.1). Additionally the patient was evaluated by a rheumatologist expert in ultrasound; US studies were carried out with a Esaote MyLab Seven® US equipment (Biomedica, Genoa, Italy) equipped with a 10-18 MHz linear transducer; PD was adjusted according to the following parameters: frequency, 8.0, PRF, 0.500, wall filter 3, gain between 50 and 70. The rheumatologist reported erosions, synovitis, osteophytes and power Doppler; we defined as active disease when patients had synovitis or positive power Doppler. We calculated means, and standard deviations for continuous variables and categorical variables were presented as rates. We performed a bivariate analysis using Pearson's Chi².

Results: 272 patients meet the inclusion criteria; most of patients were woman 87%, mean age were 57 years ± 11, mean DAS was 4.45 ± 1.1, 70% of patients were in moderate disease activity (MDA), and 30% in severe disease activity (SDA), 81% of patients were receiving conventional DMARDs therapy and 19% biological therapy. Regarding the findings of the ultrasound, the most prevalent elementary lesions in hands and feet were erosions, 75% and 6% see table 1. Active disease was found in 66% (11% of patients had only synovitis and 55% had synovitis plus Doppler) see table 2. Thus, in patients where we assumed that had MDA or SDA, by ultrasound we found that 34% did not have disease activity. We did not find statistical association between ultrasound and age, sex or type of pharmacological therapy.

VARIABLE	PRESENT		ABSENT	
	n	%	n	%
HANDS				
SYNOVITIS	181	67	91	33
POWER	152	56	120	44
DOPPLER				
EROSIONS	204	75	68	25
OSTEO	108	40	164	60
PHYTES				

FEET

SYNOVITIS	9	4	263	96
POWER DOPPLER	5	2	267	98
EROSIONS	16	6	256	94
OSTEOPHYTES	19	7	253	7

Conclusions: In RA patients with moderate or severe disease activity ultrasonography can complement the clinical evaluation, since there are a third of patients without disease activity according to ultrasound findings; where by there is a need

for further research in order to identify the reasons of non-active disease activity in patients classified clinically as in moderate or severe disease activity.

REFERENCE:

- [1] Jeka S, Dura M, Zuchowski P, Zwierko B, Wojciechowski R. The role of ultrasonography in monitoring long-standing rheumatoid arthritis: a pilot study. *Reumatologia* 2017;55(4):177-82.

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SAT0132

COMORBIDITIES AFFECT THE RETENTION RATE BUT NOT THE CLINICAL RESPONSE IN A COHORT OF RHEUMATOID ARTHRITIS PATIENTS TREATED WITH TUMOR NECROSIS FACTOR INHIBITORS.

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Background: Rheumatoid arthritis (RA) is frequently complicated by other comorbid diseases that may drive therapeutic strategy or interfere with achieving clinical response.

Objectives: To retrospectively evaluate the impact of comorbidities on treatment choice, 12-month clinical response, and 24-month retention rate in a cohort of RA patients treated with a first-line subcutaneous tumor necrosis factor alpha inhibitor (TNFi).

Methods: Study population was extracted from a local registry which included all RA patients receiving adalimumab (ADA) or etanercept (ETN) as first-line biologic drug between January 2001 and December 2013. The prevalence of common RA comorbidities was computed and the study population was stratified according to Rheumatic Disease Comorbidity Index (RDCl) RDCl=0 vs RDCl≥1 for evaluating the role of comorbidities on the choice between ETN and ADA; the prescription of concomitant methotrexate (MTX); and the impact of comorbidities on 1-year Disease Activity Score 28 (DAS28-ESR) remission and EULAR good-moderate response rates. The 24-month retention rate was computed by the Kaplan-Meier method and a Cox proportional hazard model was developed to examine the role of RDCl and other baseline factors as predictors of TNFi persistence.

Results: 310 RA patients (153 ADA and 157 ETN) were included (female 82.1%, mean±standard deviation (SD) age 53.6±13.1 years, mean disease duration 11.6±9.2 years, mean baseline DAS 28.5±1.21, RF positivity 76.4%, mean HAQ 1.39±0.56). 41.2% of patients had at least one comorbidity (overall mean RDCl 0.73) and the prevalence of conditions is reported in table 1. The proportion of patients with RDCl≥1 was similar in the subgroup receiving or not concomitant MTX (55.1% versus 44.8%, respectively; p=0.57) and similar (p=0.22) in patients treated with ADA (44.8%) or ETN (37.8%). No individual comorbidity was associated with the prescription of MTX or the choice between the two TNFis. No difference was found in the rates of both EULAR good-moderate response (61.3% vs 53.7%, p=0.175) and DAS28-ESR remission (31.4% vs 27.2%, p=0.463) according to baseline RDCl score. On the other hand, elevated RDCl is a predictor of biologic drug discontinuation (Hazard Ratio [HR] 1.17, confidence interval [95% CI] 1.00-1.37; p=0.04), whereas treatment with ETN (HR 0.50, 95% CI 0.35-0.71; p<0.001) and concomitant MTX (HR 0.57, 95% CI 0.40-0.81; p=0.002) were both associated with a lower risk of TNFi withdrawal.

COMORBIDITY	PREVALENCE (n=310)
Osteoporosis (no fractures)	24.5%
Hypertension	20.3%
Depression	11.8%
Cardiovascular disease	10.6%
Lung disease	7.9%
Fibromyalgia	7.6%
Autoimmune Thyroid disease	5.8%
Dyslipidemia	5.5%
Gastrointestinal disorders	5.1%
Diabetes	3.3%
Osteoporotic fractures	2.4%
Neurological disorders	1.8%
History of malignancy	0.3%

Conclusions: in our real-life experience, the baseline presence of comorbidity seemed to not influence the prescription of concomitant MTX and to not drive the choice between ADA and ETN. Comorbidities did not affect 1-year clinical response, but were associated with a higher risk of TNFi discontinuation over a 2-

year follow-up period. The use of ETN and concomitant treatment with MTX were both strong predictors of drug persistence.

REFERENCE:

1. England BR, Sayles H, Mikuls TR, et al. Validation of the rheumatic disease-comorbidity index. *Arthritis Care Res* 2015;67(6):865-72.

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SAT0133

PREVALENCE OF TYPE 2 DIABETES AND EVALUATION OF PATIENT CHARACTERISTICS AMONG PATIENTS WITH AND WITHOUT RA FROM COMMUNITY RHEUMATOLOGY CLINICS

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Background: RA and type 2 diabetes (T2D) have common core pathophysiologic pathways, such as insulin resistance and increased glycated end products related to endothelial dysfunction, which may portend cardiovascular disease.¹ Currently there is limited real-world evidence of T2D prevalence among patients (pts) with RA.

Objectives: To estimate the prevalence of T2D and insulin resistance among pts with RA vs control (osteoarthritis [OA] pts). To evaluate characteristics among RA pts with/without T2D.

Methods: A retrospective study was conducted on a subset of the JointMan database (an electronic medical record of >6000 pts from >10 providers). At each visit, diagnosis, medications, test results, co-morbidities and demographic data were collected. Pts aged ≥18 years with ≥2 diagnoses of RA or satisfying ACR criteria from 1 Jan 2009 to 30 Nov 2017 were included with a control group (pts with ≥2 OA diagnoses in the same period). Pts were considered to have T2D if they had a diagnosis code, diabetic medications prescription, HbA1c ≥6.5%, random glucose test ≥200 mg/dL or prior report of T2D. Between-group prevalence was compared using a chi-squared test and characteristics of pts with/without T2D were compared using Fisher's exact, chi-squared and Mann-Whitney tests.

Results: Data were analysed from 4181, 1157 and 1626 pts in RA-only, OA-only and dual (RA plus OA) cohorts, respectively. The RA-only cohort was younger and had a lower proportion of white pts compared with other cohorts (Table). T2D prevalence was significantly higher in the dual cohort (24.3%, n=395) vs RA-only (16.2%, n=676; p<0.001) and OA-only cohorts (10.5%, n=121; p<0.001). T2D prevalence was significantly higher in the RA-only vs OA-only cohorts (p<0.001). Sicca and Sjögren's syndromes were more prevalent co-morbidities in pts with RA only with vs without T2D (16.3 vs 13.0%; p=0.023) and a similar trend was observed for thyroid disorder (6.4 vs 3.7%; p=0.001).

Table 1. Pt Characteristics by Cohort

	RA only (n=4181)		OA only (n=1157)		Dual (RA plus OA) (n=1626)	
	With T2D (n=676)	No T2D (n=3505)	With T2D (n=121)	No T2D (n=1036)	With T2D (n=395)	No T2D (n=1231)
Age (years), mean (SD)	59.6 (13.5)	59.6 (14.8)	68.6 (9.8)	65.4 (11.4)	64.7 (10.5)	64.5 (11.1)
Female, n (%)	504 (74.6)	2643 (75.4)	83 (68.8)	761 (73.5)	294 (74.4)	943 (76.6)
Race, n (%)						
American Indian or Alaska Native	29 (4.3)	71 (2.0)	6 (5.0)	9 (0.9)	12 (3.0)	27 (2.2)
White	521 (77.1)	2579 (73.6)	105 (86.8)	921 (88.9)	363 (91.9)	1127 (91.6)
Co-morbidities, n (%)						
Sicca/Sjögren's syndromes	110 (16.3)	456 (13.0)	20 (16.5)	117 (11.3)	92 (23.3)	356 (28.9)
Thyroid disorders	43 (6.4)	128 (3.7)	3 (2.5)	65 (6.3)	27 (6.8)	68 (5.5)
Charlson Comorbidity Index, mean (SD)	1.02 (0.15)	1.01 (0.18)	1.05 (0.34)	1.01 (0.12)	1.01 (0.14)	1 (0.09)

Conclusions: A higher prevalence of T2D was observed in pts with RA compared with controls. In addition, co-morbidities of Sjögren's syndrome and thyroid disorder were higher in T2D pts with RA but not for dual RA plus OA.

REFERENCE:

1. de Groot L, et al. *Arthritis Res Ther* 2011;13:R205.