Objectives: to evaluate the myocardial functionality by STE in recent onset RA and PsA patients and its associations with clinical features.

Methods: STE was used to assess the myocardial functionality in patients with very early RA (n=41) (2010 EULAR/ACR criteria) and PsA (n=35) (CASPAR criteria) without traditional CV risk factors, and 58 matched healthy controls (HC). Global longitudinal and circumferential strain (GLS and GCS) were estimated.

Results: RA patients exhibited impaired GLS ($-18.13 \pm 1.36\%$) and GCS ($-20.15 \pm 1.34\%$) compared to HC ($-23.25 \pm 1.80\%$, $p < 0.001$ and $-24.50 \pm 0.70\%$, $p < 0.001$; respectively), GLS being also altered in PsA ($-21.57 \pm 2.59\%$, $p = 0.020$ vs HC). No differences in LV mass index, posterior wall thickness, LV DD, E/A index or EF were found among groups (all $p > 0.050$). DAS28 was correlated to GLS ($r = 0.908$, $p < 0.001$) and GCS ($r = 0.868$, $p < 0.001$) in RA. These findings were further confirmed by multivariate regression analyses adjusted for age, gender, BMI, CRP, ESR, SBP, DBP and duration of the symptoms, DAS28 being the only independent predictor of GLS ($p < 0.001$) and GCS ($p = 0.002$). Principal Component Analyses retrieved equivalent results. Although GCS was not significantly different in PsA compared to HC, a positive correlation with DAS28 ($r = 0.438$, $p = 0.008$) was observed. Consequently, GLS and GCS were impaired in PsA patients with high disease activity (DAS28 > 2.9) compared to HC (GLS: $p = 0.066$ and GCS: $p = 0.007$).

Conclusions: a subclinical myocardial dysfunction can be observed in IJD patients with preserved LV function and without traditional CV risk factors. The subclinical impairment of the myocardial function was found to be a very early event in IJD. Disease activity was the main predictor of myocardial strain impairment. Strain imaging by STE may detect early myocardial dysfunction in IJD.

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SAT0140

RISK OF VENOUS THROMBOEMBOLISM IN RHEUMATOID ARTHRITIS PATIENTS TREATED WITH BIOLOGIC AND NON-BIOLOGIC DMARDS

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Background: Individuals with rheumatoid arthritis (RA) have an increased risk of venous thromboembolism (VTE), including pulmonary embolism (PE) and deep vein thrombosis (DVT), compared with non-RA populations based on several recent studies^{1,2}. However, information is sparse on the risk of VTE among patients receiving treatment with specific disease-modifying antirheumatic drugs (DMARDs) or categories of therapies.

Objectives: To estimate the incidence of VTE among patients receiving routine clinical care for RA, specifically during treatment with conventional (c) and biologic (b) DMARDs.

Methods: Incidence rates were estimated in a retrospective cohort study of patients with RA (defined as at least two International Classification of Disease, Ninth Revision, Clinical Modification [ICD-9-CM] Diagnostic codes) enrolled in US health insurance plans between October 1, 2010 to September 30, 2015 and participating in the Innovation in Medical Evidence Development and Surveillance (IMEDS) program. These data are formatted into the U.S. Food and Drug Administration's Sentinel Common Data Model and Sentinel's publicly available standardized analysis tools were used to estimate the incidence rates of VTE following initiation of cDMARDs or bDMARDs. Patients were required to be new users of the study drug class, with no evidence of use in the 365 days preceding initiation and were not allowed to re-enter the cohort. Patients were required to demonstrate continuous use of the study drug class to be considered at risk for VTE. VTE was defined based on ICD-9-CM codes, but patients diagnosed in outpatient settings were also required to have evidence of oral anticoagulant dispensing within 31 days of the event. PE and DVT ICD-9-CM codes were also disaggregated to produce separate incidence rates.

Results: During treatment with cDMARDs (i.e., methotrexate or leflunomide) or bDMARDs (i.e., abatacept, adalimumab, certolizumab pegol, etanercept, golimumab, infliximab, rituximab, and tocilizumab), patients experienced VTE at a crude incidence rate of 1.49 (95% CI 1.30, 1.71) per 100 person-years (PY) and 0.98 (95% CI 0.83, 1.14) per 100 PY, respectively. For each study drug class, age was an important risk factor for VTE, with increasing age associated with higher rates of VTE; for example, during treatment with bDMARDs incidence rate (IR)_{18-49 years}=0.69, IR_{50-59 years}=0.65, IR_{60-64 years}=0.94, and IR_{65+ years}=2.11 per 100 PY (figure 1). Men also had higher incidence rates of VTE than women. In the analyses of PE and DVT, DVT incidence rates were higher than PE incidence rates, and similar incidence rate trends overall and across age strata for cDMARD and bDMARD cohorts were noted.

Figure 1 Incidence of VTE among patients with RA treated with cDMARDs and bDMARDs, overall and by age. (Data displayed as incidence rates with 95% confidence intervals.)

Conclusions: Venous thromboembolism is an important clinical concern among patients with RA and incidence rates vary by age and sex during routine clinical treatment with DMARDs.

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SAT0141

TRENDS IN THE INCIDENCE OF LYMPHOMAS AND LEUKEMIAS IN PATIENTS WITH RHEUMATOID ARTHRITIS IN SPAIN: AN OBSERVATIONAL COHORT STUDY OF HOSPITAL DISCHARGES FROM 1999 TO 2015 (TREND-AR STUDY)

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Background: Oncohematological diseases have an increased incidence in Rheumatoid Arthritis (RA) patients. However, their trend in RA in Spain is unknown

Objectives: To analyze the incidence and trend of hospital admissions for lymphomas and leukemias in RA patients in Spain from 1999–2015

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 RA patients from 1999–2015. We selected MBDSs for lymphomas and leukemias. Cases were identified by the presence in primary/secondary diagnosis of ICD9 codes. The population at risk was estimated with a prevalence of RA of 0.5% (0.8% women and 0.2% men). Crude and adjusted rates were calculated, and the trend was analyzed using the Generalized Linear Model with the year as the analysis variable. SPSS version 20 (Chicago, IL) was used

Results: 338.343 RA hospital admissions were detected, being 3561 (1.1%) lymphomas (61.5% women, 38.5% men) and 1664 (0.5%) leukemias (52.3% women,

47.7% men). Mean age 68.94(SD 11.38) in lymphomas and 71.46(SD 11.24) in leukemias. Age-adjusted rate during the period for lymphoma was 152.19/10⁵ inhab/year (92.05 women and 240.14 men). Lymphoma age-adjusted rate increased from 52.46/10⁵ inhab/year in 1999 to 187.57 in 2015, both women (from 42.74 to 142.95) and men (from 280.77 to 326.63). An annual increase in lymphoma rate of 6.9% is estimated (RRI 1.069; CI 95% 1.054–1.085). Age-adjusted rate during the period for leukemia was 90.87/10⁵ inhab/year (37.09 women and 144.65 men). Leukemia age-adjusted rate increased from 18.86/10⁵ inhab/year in 1999 to 94.05 in 2015, both women (13.80 in 1999 to 65.93 in 2015) and men (38.70 in 1999 to 204.84 in 2015). An annual increase in leukemia rate of 8.2% is estimated (RRI 1.083; CI 95% 1.069–1.097).

Conclusions: In Spain from 1999–2015 lymphoma and leukemia hospital admissions in RA patients increased, with an estimation of 6.9% and 8.2% annual increase respectively.

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SAT0142

PULMONARY HYPERTENSION AMONG HISPANIC PATIENTS WITH RHEUMATOID ARTHRITIS: A CASE-CONTROL STUDY

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Background: Rheumatoid arthritis (RA) is a chronic, systemic, inflammatory, multifactorial disease that mainly affects synovial joints. Pulmonary artery hypertension (PAH) can appear as a complication of connective tissue diseases. It is possible that pulmonary artery systolic pressure (PASP) in RA may be elevated due to interstitial lung disease, pulmonary vasculitis, pulmonary veno-occlusive disease, or cardiac disease (1). Although right heart catheterization is the gold standard, Doppler echocardiography has proved to be a reliable non-invasive method for detecting PAH (2).

Objectives: To determine the prevalence of PAH in RA patients and compare it to matched controls.

Methods: A case-control study with RA patients aged 40 to 75 years that fulfilled the 2010 ACR/EULAR criteria and matching controls were included. Exclusion criteria: poor acoustic window, absence of tricuspid regurgitation (TR), prior atherosclerotic cardiovascular (CV) disease and overlap syndromes. Patients were matched using age, sex and comorbidities. Transthoracic echocardiogram was performed by a board-certified cardiologist. PASP was calculated using the Bernoulli equation: TR velocity² × 4 + right atrial pressure according to ASE's guidelines. We used Denton's definition of PAH on Doppler echocardiography as an estimated PASP ≥ 30 mmHg (3).

Results: A total of 76 RA patients and 52 matched controls were included. Demographic and clinical characteristics of both groups are shown on table 1. As shown on table 2, the mean PASP was higher RA patients (27.14 ± 6.34 mmHg) than controls (24.68 ± 5.44 mmHg) ($P=0.024$). PASP ≥ 30 mmHg prevalence was significantly higher in RA patients (34.2% vs 11.5%; $P=0.004$).

Table 1 Demographic characteristics

	RA (n = 76)	Control (n = 52)	P
Women, n (%)	74 (97.4)	46 (88.5)	0.041
Age, mean ± SD	55.71 ± 8.84	53.86 ± 6.14	0.195
BMI, mean ± SD	29.11 ± 5.42	28.31 ± 4.37	0.343
Hypertension, n (%)	26 (34.2)	12 (23.1)	0.176
Type 2 Diabetes mellitus, n (%)	8 (10.5)	7 (13.5)	0.612
Active smoking, n (%)	6 (7.9)	6 (11.5)	0.487

Table 2 Echocardiographic findings

	RA (n = 76)	Control (n = 52)	P
TR Vmax (m/s), mean ± SD	2.27 ± 0.32	2.18 ± 0.33	0.157
PASP (mmHg), mean ± SD	27.14 ± 6.34	24.68 ± 5.44	0.024
PASP ≥ 30 mmHg, n (%)	26 (34.2%)	6 (11.5%)	0.004

TR Vmax – Tricuspid regurgitation maximum velocity. **Conclusions:** Elevated PASP, suggesting PAH, was more prevalent on RA patients than controls. A higher number of CV events that cannot be explained by traditional risk factors have been reported in RA patients; and it is possible that the elevation in the PASP could contribute to the problem. Prospective studies are needed to evaluate the role of elevated PASP in morbidity and mortality of RA patients.

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SAT0143

THE ARREST OF BONE MINERAL DENSITY LOSS AT THE LUMBAR SPINE AND HIP IN PATIENTS WITH ACTIVE RHEUMATOID ARTHRITIS DURING RITUXIMAB THERAPY

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Background: One of the well-known characteristics of rheumatoid arthritis (RA) is generalized bone loss.^{1–2} Although rituximab is a frequently prescribed biologic disease-modifying anti-rheumatic drug (bDMARD) for the treatment of RA, data regarding changes in bone mineral density (BMD) in RA patients during rituximab therapy are limited.

Objectives: To study the extent of BMD loss at lumbar spine and hip in patients with active rheumatoid arthritis treated with rituximab.

Methods: Consecutive RA patients with an active disease status (DAS28 > 3.2) starting rituximab treatment were enrolled in a prospective cohort study. BMD of the lumbar spine and hip was measured before treatment and after one year using dual energy X-ray absorptiometry (DXA) to assess BMD changes. Clinical response was defined using the European League Against Rheumatism (EULAR) response criteria.

Results: A total of 43 subjects (18.6% men) with mean age of 53.6 (SD 10.7) years were included in the study. Median disease duration was 9.5 (IQR 0.7–40.2) years and baseline mean DAS28 was 5.6 (SD 1.3). In responders, the DAS28 decreased with 1.97 points (SD 0.78) 95% CI 1.67 – 2.28 $p < 0.001$; and in non-responders, the DAS28 decreased with 0.01 points (SD 0.67) 95% CI -0.35 – 0.37 $p = 0.945$. All changes in BMD were not statistically significant (table 1).

Table 1 BMD change after one year categorized by EULAR response

	Mean (SD) baseline BMD	Mean (SD) follow-up BMD	Mean change	% change
LS total (n=43)	1.015 (0.182)	1.011 (0.186)	-0.004	-0.4
LS responders (n=27)	1.026 (0.169)	1.017 (0.182)	-0.009	-1.0
LS non-responders (n=16)	0.997 (0.206)	1.001 (0.198)	0.004	+0.7
Hip total (n=43)	0.845 (0.144)	0.849 (0.143)	0.003	+0.5
Hip Responders (n=27)	0.836 (0.126)	0.838 (0.129)	0.003	+0.3
Hip Non-responders (n=16)	0.862 (0.174)	0.867 (0.166)	0.005	+0.8

BMD is presented in g/cm²; BMD; bone mineral density; LS, lumbar spine.

Conclusions: The findings of this study indicate that patients with active RA treated with rituximab have arrest of bone loss at both the lumbar spine and hip. Moreover, these results suggest that rituximab has bone-saving abilities even in the absence of clinical response.

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