Table 1: Multivariable Logistic Regression Examining Associations between RA Baseline Characteristics and History of Transient Joint Episodes Prior to RA diagnosis*

Variable	N=133	
	OR	95% CI
Age (years)	0.997	0.966, 1.029
Female	3.303	1.165, 9.366
Household annual income (>\$50,000 CAD)	2.539	1.063, 6.063
Rheumatic disease comorbidity index	1.347	0.994, 1.825
Osteoarthritis	3.102	0.996, 9.658
Back/spine symptoms	2.974	1.145, 7.723
Seropositivity (RF or ACPA positive)	3.641	1.343, 9.873
CDAI	0.949	0.912, 0.988

*Non-significant variables: current smoker, MD global assessment. 21 patients excluded from multivariable analysis due to missing data.

MD medical doctor, RF rheumatoid factor, ACPA anti-citrullinated protein antibodies, CDAI Clinical Disease Activity Index

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FRI0066 ASSESSMENT OF LUNG INVOLVEMENT IN RHEUMATOID ARTHRITIS IN A NORTH AFRICAN COUNTRY

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Background: Rheumatoid arthritis (RA) is a common inflammatory disease developing within joints but extra-articular organs such as the lung could be involved.

Objectives: To determine the frequency and the characteristics of lung involvement in RA Tunisian patients.

Methods: A retrospective study including patients with RA fulfilling ACR/EULAR 2010 criteria was conducted in a department of rheumatology in the north of Tunisia between 2014 and 2017. Pulmonary involvement was evaluated based on chest clinical symptoms, combined results from chest-X-ray, computed tomography of the chest and pulmonary functional tests. Patients with pulmonary involvement not directly related to RA were excluded from this study (emphysema, neoplasm, infection...)

Results: Sixty five patients with RA were collected. The mean age was 56 years $\pm$ 12.8 years. The mean age of disease onset was 46.4 $\pm$ 13.8 years ranging from 17 to 75 years. The mean disease duration was a 9.6 $\pm$ 10.1 year. A total of 13 patients (20%) were noted to have clinical chest symptoms. It was dyspnea (9 cases (13.8%)), chest pain (2 cases (3%)), dry cough (5 cases (7.7%)) and expectoration (3 cases (4.4%)). Eight patients (12.3%) had crackles in pulmonary auscultation. Mean time

to pulmonary involvement onset was 2.5 years [1-4 years]. Chest-X-ray was available in all patients and showed abnormalities in 24 cases (37%). Chest computed tomography was practiced in 24 patients (36.9%). It revealed pulmonary abnormalities in 18 patients (75% of those scanned). Chest computed tomography revealed abnormalities in 3 patients (4.6%) who hadn't respiratory complaints. Pulmonary functional tests was performed in 26 patients (40%) and revealed abnormalities in 3 cases (obstructive signs in 2 cases and association of obstructive and restrictive signs in 1 case).

The overall frequency of lung involvement based on different lung investigations was 27.6% (18 patients). Parenchyma was the most frequent site of pulmonary involvement: interstitial lung disease was found in 7 cases (38.8%); it was a usual interstitial pneumonia in 5 patients (27.7%) and nonspecific interstitial pneumonia in 2 cases (11.1%). Bronchiectasis was found in 5 cases (27.7%), rheumatoid nodule in 4 cases (22.2%) and pleural disease in 2 cases (11.1%).

Conclusion: Lung involvement is frequent in RA Tunisian patients and the interstitial lung disease represented the most encountered pulmonary manifestation.

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FRI0067 ANXIETY AND DEPRESSION IN A PREGNANCY AND RHEUMATIC DISEASES CLINIC

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Background: Preconceptional psychologic evaluation allows the identification of risks factors for perinatal disorders. Anxiety (13.4%) and depression (41.5%) has been reported in rheumatic diseases¹. Hospital Anxiety and Depression Scale (HADS) is used to evaluate anxiety and depression in patients with chronic diseases².

Objectives: To describe the frequency of anxiety and depression disorders among preconceptional patients in a Pregnancy and Rheumatic Diseases Clinic.

Methods: An observational, cross-sectional, and descriptive study was conducted in the Rheumatology Consultation of Hospital Universitario "Dr. José Eleuterio González" in Monterrey, Mexico. We included 100 women aged between 18 and 39 years in the preconceptional stage of the Pregnancy and Rheumatic Diseases Clinic. HADS, which is divided in two subscales, one for anxiety and one for depression, indicating a disorder when a score ≥ 11 was applied. To evaluate Rheumatoid Arthritis (RA) a Disease Activity Score (DAS28) was used, for Systemic Lupus Erythematosus (SLE) a Systemic Lupus Erythematosus Disease Activity index (SLEDAI) was performed, and others (Sjögren's syndrome, dermatomyositis and fibromyalgia) were evaluated with the Global Quality of Life (GQL). To analyze differences among groups, Gamma coefficient was used. It was considered a statistically significant $p < 0.05$.

Results: One hundred women in childbearing age were included, with a mean age of 34.48 (SD 18.33) years. RA was diagnosed in 48%, SLE in 37%, and others in 15%. We found a mean HADS total score of 11.73 (7.29), in the anxiety subscale 6.94 (4.027), and depression subscale 4.79 (4.026). A significant correlation between SLE and a high HADS score was observed (Table 1).

Conclusion: In order to have a safe pregnancy, an early intervention to assess the psychiatric status is required in patients with rheumatic diseases.

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Table 2. Disease activity: DAS28 score, GQL score and anxiety and depression

	Anxiety			Depression			HADS total score (P)
	Without	With	P	Without	With	P	
	n (%)	n (%)		n (%)	n (%)		
DAS-28 index (N=48)	31 (64.4)	17 (35.4)	0.36	34 (70.8)	14 (29.2)	0.20	0.06
SLEDAI index (N=37)	22 (59.5)	15 (40.5)	0.79	29 (78.4)	2 (21.6)	0.42	0.05
GQL index (N=15)	7 (46.7)	8 (53.3)	0.50	13 (86.7)	2 (13.3)	0.25	0.74

Disease Activity Score 28-joint counts (DAS-28) >5.1 High activity; Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) >8 High activity; Global Quality Index (GQL) >8 high activity. HADS total score ≥ 11 .

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FRI0068

SAFETY OF THE ZOSTER RECOMBINANT ADJUVANTED VACCINE IN RHEUMATOID ARTHRITIS PATIENTS: A SINGLE CENTER'S EXPERIENCE WITH 300 PATIENTS

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Background: Patients with rheumatoid arthritis (RA) and other systemic rheumatic diseases (SRD) are at increased risk of developing Herpes Zoster (HZ) due to the diseases/or medications used to treat them such as corticosteroids methotrexate, biologic disease modifying agents, and JAK inhibitors. Released in 2018, the Zoster Recombinant Adjuvanted (ZRA) is a new vaccine with >90% efficacy and can be used in patients taking immunosuppressive therapy as compared to the live Zoster vaccine¹. There has been a concern about whether the potency of the adjuvant could trigger flares of the underlying SRD, and whether there will be more side effects in this population.

Objectives: Our goal was to study the impact of the new ZRA vaccine in RA and other SRD patients and to measure the risk of flare and incidence of side effects.

Methods: We performed a retrospective chart review from 2/1/2018 to 1/20/2019, on patients with RA and SRD seen at the BWH who had received the ZRA vaccine. Co-variables of interest were collected. A flare was defined as occurring within 12 weeks of the vaccine administration by either: 1) documentation of RA flare in the rheumatologist office notes, telephone encounter or patient portal communication, or 2) new prednisone prescription or an increase in dose of existing prednisone prescription. Vaccine side effects were defined as muscle soreness at the injection site, redness, mild swelling, fatigue, fevers, myalgias, headaches, nausea, and abdominal pain.

Results: 300 patients who received the new ZRA vaccine between 2/1/2018 to 1/20/2019 were identified. Mean follow up was 12.5 weeks ranging from 1-40 weeks following administration. Patient characteristics are identified in **Table 1**.

We identified a 3.00% (n=9) incidence of flare following the first dose and 2.86% (n=4) incidence following the second dose. One patient flared after both the first and second dose. All the flares were mild, self-limited, responded to treatment with low dose glucocorticoids, and did not warrant a change in immunosuppressive therapy. 15.3% (n=46) patients experienced side effects such as soreness at the injection site, fever, stomach ache, and flu like symptoms. Of the patients who experienced side effects, 15.4% (n=40) occurred after the first dose and 8.59% (n=11) occurred following the second dose. Five patients experienced side effects from both. All side effects were regarded as mild and did not necessitate an emergency room visit. No cases of Zoster were reported.

Total N	300
Mean Age	67.5 (± 11.1)
Females	232 (77.3%)
Seropositive	111 (53.6%)
Received 2nd Vaccine	140 (46.7%)
Medications	
MTX (mean dose=17.1mg/week)	118 (39.3%)
Prednisone (mean dose=4.69 mg/day)	81 (27.0%)
Tofacitinib	44 (14.7%)

TNF inhibitors *	91 (30.3%)
Other biologic therapy **	47 (15.7%)
Other immunosuppressants***	37 (12.3%)

Diagnosis

RA	207 (69.0%)
Psoriatic Arthritis	21 (7.00%)
Vasculitis	12 (4.00%)
SLE	11 (3.67%)
CTD/MCTD	7 (2.33%)
Other ****	42 (14.0%)

* Adalimumab, Certolizumab pegol, Etanercept, Golimumab, Infliximab

** Abatacept, Tocilizumab, Rituximab, Sarilumab

*** Azathioprine, Cyclophosphamide, Mycophenolic acid, Leflunomide

**** Other includes: Gout, Scleroderma, Sjogren's, Ankylosing spondylitis, Dermatomyositis

Conclusion: In our experience with 300 patients who received the new ZRA (207 RA and 93 SRD) in 2018-2019, the incidence of disease flares was $\leq 3\%$ and of side effects was 15% which is reassuring. Both flares and side effects were mild, self-limited, and did not require a change in DMARD therapy. No cases of Zoster were reported. Larger formal studies with longer term follow up are required to confirm our findings.

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FRI0069

FREQUENCY OF EYE INVOLVEMENT IN INFLAMMATORY ARTHRITIS AND CONNECTIVE TISSUE DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Rheumatoid arthritis commonly presents with extraarticular manifestations. Along with other connective tissue diseases, these manifestations may include eye involvement.

Objectives: The purpose of our work was to determine the prevalence and type of eye involvement in rheumatoid arthritis and other connective tissue diseases through a meta-analysis and literature review.

Methods: A systematic review of the literature was performed using Medline, Web of Science, and the Cochrane library from their inception until January 7, 2019. Conjunctivitis, keratoconjunctivitis sicca, xerophthalmia, uveitis, eye hemorrhage, optic neuritis, papilledema, orbital disease, retinal artery/vein occlusion, macular edema, retinitis, chorioretinitis, scleritis, iridocyclitis, choroid hemorrhage, blindness and amaurosis fugax were searched for prevalence in patients with rheumatoid arthritis, systemic lupus erythematosus, antiphospholipid syndrome, dermatomyositis, polymyositis, systemic sclerosis, Sjogren's syndrome, undifferentiated connective tissue disease, giant cell arteritis, granulomatosis polyangiitis (GPA); formerly Wegener's granulomatosis, systemic vasculitis, and sarcoidosis.

Results: 3394 studies were identified and 65 included. The prevalence of eye involvement was 18% in rheumatoid arthritis, 31% in systemic lupus erythematosus, 35% in antiphospholipid syndrome, 27% in giant cell arteritis, 26% in GPA and 27% in sarcoidosis. The most common manifestations was dry eyes (keratoconjunctivitis sicca) in most diseases analyzed with a frequency approaching 90% in Sjogren's syndrome. Anterior and posterior uveitis were the most common OC in sarcoidosis occurring in 16 [3-28]% and 6 [3-9]% of patients respectively.

Conclusion: Eye involvement is present in approximately one fifth of rheumatoid arthritis patients, and one quarter to one third of patients with other rheumatic diseases.