According to our results, self-reported adherence appears to be a cost and time effective method to care for patients.

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AB1209

A SYSTEMATIC REVIEW ON THE EFFECT OF DMARDS ON FERTILITY IN RHEUMATOID ARTHRITIS

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Background: Patients with rheumatoid arthritis (RA) seem to experience a diminished fertility. Reasons for this lowered fertility are insufficiently defined and probably multifactorial. Although the effect of DMARDs on pregnancy outcomes have been studied, there is a lack of data on the effect of DMARDs on the fertility of patients with RA.

Objectives: To evaluate all studies that concern an effect of DMARDs on the fertility of men and women with RA in a systematic review.

Methods: A search was conducted at 18/10/2019 in three databases including Embase, Pubmed (Medline) and Web Of Science with specific search strings for each database, constructed with the help from a health sciences librarian. We included studies involving women or men diagnosed with RA, of fertile age (18-45years) and on a DMARD therapy, with as outcome a fertility parameter. Systematic reviews, meta-analyses, case reports, case series and animal studies were excluded. Studies not in English or Dutch or written more than 15 years ago were excluded. Article selection was firstly based on title/abstract (double blind, two researchers, LB and IS) and then full text (two researchers, LB and IS). In case consensus could not be reached, a third researcher (DDC) was consulted. The references of included articles were reviewed ("snowballing") to include and minimize the missing articles. A quality check of the included full text papers was performed using the CASP Appraisal Checklists. A chart was made based on outcomes of interest.

Results: After duplicate removal, 9030 articles were found. After title/abstract screening, 82 articles remained. After full text screening, 4 articles could be retained. No additional studies were found through snowballing. Only studies about women could be included, as the evidence found for men was all in papers with exclusion criteria for our systematic review (e.g. case reports). Table 1 summarizes these papers. The included studies investigated the following DMARDs: methotrexate (MTX), certolizumab pegol (CZP), etanercept (ETN) and sulfasalazine (SSZ). No detrimental effects of these DMARDs on fertility, defined as time-to-pregnancy (TTP), anti-Müllerian hormone serum level or presence of a history of infertility, were reported.

Conclusion: This systematic review underlines the knowledge gap on the effect of DMARDs on fertility in human studies. Only 4 studies on women, and no studies on men were found. In the 4 included studies, DMARD treatment, even with MTX in contrast to general belief, had no harmful effect on fertility, probably because disease activity was better controlled with DMARD therapy. However, effects of other RA medication such as NSAIDs were excluded. More research is needed to improve guidance for patients with RA with a child wish.

Table 1. Characteristics of studies included in the systematic review

Authors	Location	Sample	DMARD	Outcome	Method	Design	Result
Akintayo et al. 2018	Nigeria	50 women with RA and 50 women without RA	MTX	Infertility or history of infertility	Interviewer-administered questionnaire	Retrospective study	MTX was associated with a negative history of infertility
Shimada et al. 2019	Japan	25 pregnancies in 19 patients with RA	CZP and ETN	TTP (time to pregnancy)	medical records	Retrospective study	bDMARD treatment shortened the TTP
Brouwer et al. 2013	The Netherlands	72 women with recent-onset RA compared to 509 healthy women	MTX	Level of serum AMH	medical records, serum samples (2 time points)	Retrospective study	AMH levels were not lower with MTX.
Brouwer et al. 2014	The Netherlands	245 women with RA	MTX and SSZ	TTP	Questionnaires and interviews	Prospective cohort study	MTX and SSZ did not prolong TTP

RA = Rheumatoid Arthritis; MTX = Methotrexate; TNFi = Tumor Necrosis Factor inhibitor; CZP = Certolizumab pegol; ETN = Etanercept; SSZ = Sulfasalazine; TTP = Time to Pregnancy; DMARD = Disease Modifying Antirheumatic Drug; AMH = Anti-Müllerian hormone

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AB1210

THE IMPACT OF EXAMINATION STRESS ON AUTOIMMUNE DISEASES AMONG UNIVERSITY STUDENTS

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Background: Stress is a risk factor of various diseases including autoimmune diseases. Autoimmune diseases are one of the leading causes of morbidity in young adults. ⁽¹⁾ Examination stress is a main concern nowadays due to the study style, lack of preparation, doctor- student relationship and family pressure. ⁽²⁾ The previous studies declared that stress may causes neuroendocrinal changes leading to immune dysregulations and cytokines production. ⁽³⁾

Objectives: The aim of study is to scope the light on the importance of stress as a predisposing factor in autoimmune disease flares particularly Examination stress.

Methods: A three-year (2017-2019) cross-sectional prospective study conducted on 1365 students who presented to the Alexandria University rheumatology clinic during examinations. Clinical assessments, routine investigations, activity markers, activity indices, stress and anxiety questionnaires and perceived stress scale (PSS) were applied to all patients during consecutive visits.

Results: Through 5800 visits in three years during examination sessions, patients age ranged from (17 -25) years with 76% females and 24% males. They grouped into SLE (31.35%), Rheumatoid arthritis (RA) (37.28%), Fibromyalgia (13.91%), FMF (2.63%), Ankylosing Spondylitis (1.75%), Psoriatic arthritis (0.73%), systemic sclerosis (0.58%), and undifferentiated connective tissue (11.73%). According to SLE patients, 43.92% were newly diagnosed whilst 54.16% of previously diagnosed SLE presented with Flare in particular lupus nephritis (56.33%), arthritis (43.22%), hematological (49.76%) and serositis (21.36%). Interestingly, RA patients who newly diagnosed were 35.16% of total RA patients while 42.42% of previously diagnosed RA patients presented with moderate and high DAS-28 due to noncompliance with treatment in (64.37%) of patients, (11.53% on biological, 88.47% on conventional treatment). In addition, (49.36%) of FMF presented in recent attacks. It was also found that Arthralgia, bone aches and sleep deprivation are the main complaints. Concerning, A High perceived stress scale (PSS) was associated with High DAS28 and SLEDI-2K scores. ($r_s = 0.723, 0.865$) ($P < 0.001$)

Conclusion: Examination stress is one of triggering factor for autoimmune disease flares. It is associated with high disease activities and ruthless outcomes.

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AB1211

IMMUNE-RELATED ADVERSE EVENTS IN PATIENTS RECEIVING PD-1/PD-L1 INHIBITORS: PRELIMINARY RESULTS FROM A PROSPECTIVE COHORT STUDY

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Background: Recent introduction of immune checkpoint inhibitors (ICIs) revolutionized oncological guidelines. Immune-related adverse events (irAEs) may occur in as many as 85% of patients (10% with toxicity grade 3/4), but detailed epidemiology of irAEs is still lacking, mostly because of data collection and analysis vary widely.

Objectives: The purpose of our study is to establish a prospective cohort of patients treated with PD-1/PD-L1 inhibitors in order to determine incidence, risk factors and characteristics of irAEs in a real-world setting.

Methods: We conducted a prospective cohort study enrolling patients receiving anti-PD-1/PD-L1 agents for the treatment of metastatic or locally advanced non-small cell lung cancer, renal cell carcinoma, squamous cell carcinoma of the head and neck, Hodgkin lymphoma. Detailed recommendations have been implemented for cases fulfilling criteria for suspected irAEs, including procedures for evaluation and diagnosis, specific treatments and rules for drug discontinuation. IrAEs have been defined and graded according to Common Terminology Criteria for Adverse Events vs 5.0. Management strategies have been adapted by a multidisciplinary panel, basing on the oncological guidelines, which represent the current best clinical practice. AEs screening, physical examination, ECG and clinical laboratory evaluation have been performed at baseline visit and follow up (4, 8, 12 weeks).

Results: Fifty-two patients have been enrolled from Jan 2019 to Dec 2020. Characteristics are reported in the Table below. Twelve patients developed irAEs (23%), 6 treated with nivolumab, 4 with pembrolizumab, 1 with atezolizumab and 1 with durvalumab. Mild-to-moderate (G1-G2) irAEs were hepatitis, hypothyroidism, III-V-VII cranial nerve palsy, polymyalgia-like syndrome, skin psoriasis and type-1 diabetes mellitus. Severe cases (G3) of bullous dermatitis, Lichen Planus, interstitial pneumonia and myositis occurred. One patient developed three different irAEs. Median time of onset was 4.5 weeks. IrAEs were successfully treated according to established guideline, but 4 patients stopped anti-neoplastic therapy due to irAEs and 11 for disease progression. Five patients died.

Conclusion: Cancer patients receiving PD-1/PD-L1 agents are being prospectively followed. Preliminary results confirm that 1/4 patients may develop irAEs. Innovative tools are required in order to manage irAEs, prevent potential relapse and avoid useless interruption of therapy. Further research needs to get insights into pathophysiological mechanisms and risk factors.

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Characteristics	N = 52
Age [years, median (range)]	67 (31-92)
Gender (F/M)	17/35
Cancer type	
Melanoma	12
Renal cell carcinoma	9
Non-small-cell lung carcinoma	29
Hodgkin lymphoma	1
Head-neck cancer	1
Agents	
Nivolumab	24
Pembrolizumab	16
Atezolizumab	8
Durvalumab	4
irAEs	12 pts (23%)*
G1	4
G2	6
G3	4
G4	0
Drug discontinuation due to irAEs	20 (39%)
due to disease progression	11
death	5

*one patient had more than one event

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AB1212

PREVALENCE OF CAROTID SUBCLINICAL ATHEROSCLEROSIS IN PATIENTS WITH PSORIATIC ARTHRITIS VS RHEUMATOID ARTHRITIS: A CASE CONTROL STUDY

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Background: Rheumatic diseases such as Psoriatic Arthritis (PsA) and Rheumatoid Arthritis (RA) are associated with increased morbidity and mortality, mainly due to cardiovascular causes. Cardiovascular outcomes in patients with PsA and RA cannot be completely explained by traditional cardiovascular risk factors, suggesting that the systemic inflammation that characterizes these diseases may have an important role on accelerated atherosclerosis.¹

Objectives: To compare carotid intima-media thickness (cIMT) and asymptomatic carotid plaque (CP) prevalence, between patients with PsA, RA and controls.

Methods: Cross-sectional observational study. Seventy patients, aged 35-75 years, with PsA and RA who fulfilled the CASPAR and ACR/EULAR 2010 classification criteria, respectively, who were active on a cardio-rheuma preventive clinic were recruited, matched with 70 healthy controls. All groups underwent a noninvasive examination using B-mode ultrasonography of the right and left common carotid artery. CP was defined as a focal narrowing ≥ 0.5 mm of the surrounding lumen or cIMT ≥ 1.2 mm; hyperplasia of the carotid intima was defined as cIMT ≥ 0.9 mm to 1.1 mm. Descriptive data were analyzed by continuous and categorical variables. Continuous variables with normal distribution are shown as mean $\pm$ standard deviation (SD), and non-normal distribution as median and quartiles (25q-75q). ANOVA, Kruskal Wallis, χ^2 and Mann-Whitney U were used to compare data. A p value ≤ 0.05 was considered statistically significant. Statistical analysis was done using SPSS version 24 (IBM Corp., Armonk, NY, USA).

Results: Clinical and demographic characteristics are shown in Table 1. The global prevalence of carotid atherosclerosis was 25.7% and 38.6% in RA and PsA respectively, and 27.1% in controls ($p=0.170$). Intimal hyperplasia was found in 20%, 12.9% and 0% in RA, PsA and controls ($p=0.001$), respectively (Table 2).

Table 1. Clinical and demographic characteristics

	RA n=70	PsA n=70	Controls n=70	P value
Gender				
Male	9 (12.9%)	31 (44.4%)	11 (15.7%)	<0.001
Female	61 (87.1%)	39 (55.7%)	59 (84.3%)	
Age, years	54.51 $\pm$ 9.657	53.1 $\pm$ 10.87	53.54 $\pm$ 7.48	NS
Body Mass Index, BMI, kg/m ²	28.99 (25.95-32.34)	29.04 (26.23-31.92)	27.44 (24.98-30.95)	NS
Comorbidities				
Diabetes Mellitus	11 (15.7%)	14 (20%)	8 (11.4%)	NS
Hypertension	24 (34.3%)	27 (38.6%)	15 (21.4%)	NS
Dyslipidemia	19 (27.1%)	30 (42.9%)	18 (25.7%)	NS
Active smoker	7 (10%)	16 (22.9%)	15 (21.4%)	NS
Disease duration				
Duration, years	8.45 (3.34-15.88)	5 (2.75-8)	-	0.005
Statins	9 (12.9%)	12 (17.1%)	10 (14.3%)	NS

Table 2. Ultrasonographic characteristics

	RA n=70	PsA n=70	Controls n=70	P value
Right CIMT, mm	0.8 (0.6-1.1)	0.6 (0.5-0.9)	0.6 (0.5-0.8)	<0.001
Left CIMT, mm	0.8 (0.6-0.9)	0.6 (0.5-0.7)	0.6 (0.5-1.2)	0.002
Any Hyperplasia	14 (20%)	9 (12.9%)	0	0.001
Right intimal hyperplasia	7 (10%)	5 (7.1%)	0	0.021
Left intimal hyperplasia	13 (18.6%)	2 (2.9%)	0	<0.001
Any plaque	18 (25.7%)	27 (38.6%)	19 (27.1%)	NS

Conclusion: This study shows the high prevalence of asymptomatic atherosclerosis in RA and PsA compared to general population. Even though it was shown a higher prevalence of CP in PsA, subclinical atherosclerosis in RA patients may have an increased clinical significance. The presence of carotid plaque between groups was not statistically significant. We observed increased prevalence of carotid intimal hyperplasia in RA and PsA compared with age-matched controls. We emphasize the value of ultrasonography in the detection of early atherosclerosis lesions.

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