Background: Rheumatic musculoskeletal disorders (RMSDs) are a common cause of long term pain and physical disability. In developed countries, RMSDs are a major cause of absence from work and thus have a big financial burden on the country economic status. Several studies have been published the incidence and prevalence of RMSDs in different world countries and found to be widely variable. Estimation of the extend of the problem of RMSDs in developing world, especially in rural economies will help better understanding of the risk factors that contribute to the initiation and progression of these diseases and help the health care authorities to provide proper health program services in these areas to reduce the physical and financial burden of RMSDs (Bagher et al., 2011; Majumdar et al., 2015 and Usenbo, et al., 2015).

Objectives: To estimate the prevalence rate of RMSDs in a rural population in Upper Egypt.

Methods: A cross-sectional based study was carried out and included 3988 subjects of population (2013 females and 1975 males). Mean age of patients was (46.89±15.25yrs). They proceeded 4 phases of World Health Organization/International League of Associations for Rheumatology community-oriented program for control of rheumatic diseases survey questionnaire WHO-ILAR Community Oriented Program for screening of rheumatic diseases. Modified Health Assessment Questionnaire (HAQ) was used to assess the disability severity. Individuals suspected to have any rheumatic diseases were subjected to full clinical examination, laboratory and radiological investigations to reach a final diagnosis. They were classified according to appropriate criteria of diagnosis of diseases.

Results: A prevalence rate of RMSDs was 16.22%, more prevalence in females (10.38% vs. 5.84% for males, P=0.000). The mean age of patients with RRMSDs were older (46.89±15.25 yrs) than healthy individuals (29.56±18.95 yrs) (P=0.0001) and with increasing age (≥45≤ 55 yrs). The identified RMSDs were OA (8.5%), Soft tissue rheumatism (STR) (6.57%), spinal disorders (SD) (6.47%), fibromyalgia (FM) (0.60%), RA (0.30%), arthralgia (0.18%), SPAs (0.15%), Gout(0.6%), Pseudogout (0.08%), SLE (0.5%), JIA(0.03) and MCTD (0.03%). The prevalence rates for the majority of RRMSDs were higher in females and with increasing age. About two thirds of the patients had grade II disability.

Conclusion: The prevalence rate of RMSDs in a rural population ≥15years in Upper Egypt has been estimated to be 16.22%. The most prevalent RMSDs are OA, STR and SD causing the greatest burden of the disease. The predictive risk of RMSDs has to be assessed in future studies.

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AB1228

COMPARATIVE ANALYSIS OF COMORBID PATHOLOGY IN PATIENTS WITH RHEUMATOID ARTHRITIS AND ANKYLOSING SPONDYLITIS

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Background: Interest in comorbid conditions in rheumatoid arthritis (RA) and ankylosing spondylitis (AS) is due to their influence on the course and prognosis of the disease itself, the quality of life of patients and the choice of treatment tactics.

Objectives: To compare the frequency and structure of comorbid pathology in patients with RA and AS.

Methods: 130 cases of patients with RA (95 women, 35 men, average age 47±6.6 years) and 86 with AS (27 women and 59 men, average age 44 ±7.4 years) were analyzed. The effect of concomitant pathology on the long-term prognosis was evaluated using the Charlson comorbidity index.

Results: Patients with RA had a combined pathology in 93.0% (122) cases, of which 24.5% (30) – one, 28.6% (35) – two, 46.7% (57) – three or more concomitant diseases. Concomitant diseases in AS patients were registered in 83.7% (72) of cases, including one in 36% (31), two in 14% (12), and three or more in 33.7% (29). The Charlson index from 1 to 2 points was determined in 78.5% (102) of RA patients and in 77.9% (69) of patients with AS (p=0.067). Values from 3 to 4 points had 19.2% (25) and 20.9% (18) of patients, respectively (p=0.064). The Charlson index of more than 5 points was registered in 2.3% (3) patients with RA and 1.2% (1) patients with AS.

The leading place in the structure of comorbidity in the group of patients with RA was occupied by diseases of the digestive system, which was observed in 79.2% (103) of patients. In the second place in the same group were registered cardiovascular diseases (CVD) – in 48.5% (63) patients, the most common arterial hypertension

– in 36.9% (48). 27.6% (36) of patients had chronic pyelonephritis in combination with urolithiasis. Osteoporosis was detected in 20.0% (26) of RA patients.

In the group of patients with AS, diseases of the digestive system were also most frequently registered – in 76.7% (66) of patients. CVD was observed in 41.9 % (36) patients, of which 39.5% (34) had hypertension. Kidney diseases were registered in 9.3% (8) of patients. Osteoporosis was detected in 32.5% (28) of patients with AS.

Comparative analysis of the structure and frequency of diseases of the digestive system in RA and AS revealed no significant differences. CVD was registered more often in RA than in AS (48.5% vs 41.8%, p=0.037). There were significant differences in the frequency of hypertension in the study groups of patients: hypertension was observed more often in patients with AS in 39.5% of cases, while in RA only in 36.9% (p=0.041), which is probably due to long-term use of medium and high doses of NSAIDs as "basic therapy" for AS. Kidney diseases were more common in RA than in AS (27% vs 9.3%, p=0.022). Osteoporosis, in contrast, was most frequently detected in patients with AS than in RA patients (32.2% vs 20%, p=0.047).

Conclusion: Despite differences in the pathogenesis of RA and AS, the long-term prognosis, determined by both rheumatic disease and comorbidities, did not differ significantly. Concomitant pathology is an important component that determines the management of patients.

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AB1229

SAFETY OF BIOSIMILAR ETANERCEPT IN THE TREATMENT OF RHEUMATIC DISEASES: DATA FROM THE MEXICAN ADVERSE EVENTS REGISTRY (BIOBADAMEX)

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Background: Access to biosimilar drugs in Mexico started on 2014. Although biosimilar drugs safety has proved comparability to originator drugs on trials, information about its safety on real-life data is limited.

Objectives: To compare safety in terms of adverse events of biosimilar etanercept (BET) to originator etanercept (OEt) using information from the Mexican Adverse Events Registry (BIOBADAMEX).

Methods: BIOBADAMEX is a Mexican cohort that collects the information of biologic and biosimilar drugs used in patients with rheumatic diseases in public and private practice since 2016. Patients enrolled are followed-up yearly. For this study we included patients from 18 to 65 years old who were or are currently in treatment with OEt or BET and analyzed the frequency of adverse events (AE), the severity and the outcome of these. Baseline time was considered at enrolment to the cohort. We used logistic regression to analyze univariable and multivariable associations.

Results: At the time of analysis a total of 119 have received treatment with OEt, 38 with BET. Mean follow up time was 1.35 years. Rheumatoid arthritis (RA) was the most common disease for all the groups followed by ankylosing spondylitis (AS) and psoriatic arthritis (PsA). Both groups had similar baseline characteristics (Table 1). AE occurred in 4 (3.4%) patients with OEt and in 6 (15.8%) with BET (OR 0.2, 95% CI 0.04-0.7). The most frequent AE in OEt group was allergic reaction, (2(2.5%) of patients), and infections were the most frequent AE in BET group (2 (5.3%)). Of patients with BET, 2(5.3%) had severe AE compared to none in the OEt (p=0.012). In the multivariable adjusted analysis comparing development of AE vs no AE including BET, comorbidities and glucocorticoids, we found that use of BET (OR 4.6, 95%CI 1.1-19.5) and presence of comorbidities (OR 4.6, 95%CI 1.01-20.5), were associated with AE. Use of glucocorticoids was not significantly associated.

Table 1. Baseline characteristics

	Originator etanercept (n=119)	Biosimilar Etanercept (n=38)	Univariable Analysis ^a OR(95%CI)
Sex (female), n(%)	98 (82.4)	27 (71.0)	1.9 (0.8-4.4)
Age, median (IQR)	53.6 (45-61)	51.3 (43-58)	1.0 (0.9-1.0)
Body Mass Index, median (IQR)	27.5 (23.4-32.5)	26.7 (24-29)	1.0 (0.9-1.1)
Diagnosis, n(%)			
Rheumatoid arthritis	98 (82.4)	26 (68)	1
Ankylosing spondylitis	13 (10.9)	9 (24.0)	0.3 (0.1-0.9)
Psoriatic arthritis	8 (6.9)	3 (8.0)	0.7 (0.1-2.8)
Comorbidities, n(%)	41 (34.5)	14 (40.0)	0.3 (0.3-1.5)

Table 1. Baseline characteristics

	Originator etanercept (n=119)	Biosimilar Etanercept (n=38)	Univariable Analysis ^a OR(95%CI)
Use of previous biologic, n(%):	95 (79.8)	16 (42.1)	5.4 (2.5-11.9)
Use of steroids, n(%):	45 (37.8)	22 (57.8)	0.4 (0.2-0.9)
Use of DMARD, n(%):	94 (78.9)	35 (92.1)	0.3 (0.1-1.1)
Adverse events ^b , n(%):	4 (3.4)	6 (15.8)	0.2 (0.04-0.7)
Infections ^b , n(%):	1 (0.8)	2 (5.3)	0.15 (0.1-1.7)
Allergic reactions ^b , n(%):	3 (2.5)	1 (2.6)	0.9 (0.1-9.5)
Severe ^b , n(%):	0 (0)	2 (5.3)	p=0.012 ^c

^aUnivariable logistic regression analysis. ^bCumulative at time of analyses. ^cChi-square test.

Conclusion: This preliminary study showed that AE with BEt were more frequent as well as more severe compared to AE presented with OEt in patients with rheumatic diseases using BIOBADAMEX data. Our study suggests that use of BEt and comorbidities are associated with the development of AE. Follow up and inclusion of more participants is going on and will allow us to perform further analyses.

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AB1230 PERIPHERAL ARTERY DISEASE AND JOINT PAIN IN TYPE 2 DIABETES PATIENTS, FROM ASSOCIATION TO CAUSATION

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Background: Type 2 diabetes mellitus (T2DM) and arthritis are considered two separate conditions. However, inflammation and metabolic changes play a major role in diabetes co-morbidity (1). The pathogenesis of the joint pain and stiffness in diabetes patients is not fully understood. Diabetic osteoarthropathy (neuropathic arthropathy) considers a quite rare condition (0.1–0.4% of diabetic patients), involving destructive, lytic joint changes (2). Interestingly, over 52% of diabetic patients have joint diseases, compare to only 27% without diabetes; and people with arthritis have over 60% higher risk of diabetes development (3).

Objectives: The purpose of the study was to determine the association between the lesions of low extremity arteries (LEA) and the prevalence of arthritis (joint pain and stiffness) among patients with type 2 diabetes.

Methods: This is the pilot analysis of the musculoskeletal data obtained from the prospective cohort study of patients with diabetes complications 2013-2016 (179 consecutive T2DM pts undergoing transfemoral amputation (TFA) due to gangrene of lower limb (4,5), and 199 patients experienced balloon angioplasty (BA) of the LEA (without gangrenes). The computer tomography angiography was performed, along with clinical, laboratory and instrumental examination. Functional class of joint lesions (hip, knee or foot) was obtained based on self-service and (un)professional activity.

Results: All observed patients had diabetic neuropathy. The affected extremity in all the patients undergoing TFA had critical arterial ischemia along with foot gangrene, knee/hip pain, stiffness and rigidity. The second extremity also had stenoses of popliteal, anterior or posterior tibial arteries and the severity of stenoses was positively correlated with the severity of muscle and joints pain ($r=0.771$, $p<0.001$).

Among 199 patients without gangrene of lower limb, BA was done on superficial femoral artery 46 (23.1%) patients, popliteal in 44 (22.1%), posterior tibial 54 (27.1%), arterial tibial 41 (20.6), and peroneal artery 14 (7%). At least 1 large and 1 small joint was affected per person. The correlation between the prevalence of joint pain/stiffness and peripheral artery stenosis of the same lower extremity in patients without gangrene was significant $r=0.632$, indicating a large positive relationship (approximately 39.9% of the total variance). A linear regression analysis was conducted to evaluate the association between the severity of artery lesions and the severity of joint functional class, $F(1, 198) = 57.82$, $p<0.001$, $t = 7.91$, $p < 0.001$. The 95% confidence interval for the slope was 0.71 to 1.29, which did not include the value of zero.

Conclusion: The results show that the more severe the peripheral artery stenosis was the more prevalent joint lesions are and worsen the function class. However, more studies are needed.

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AB1231 2019 LUPUS CLASSIFICATION CRITERIA SCORE PREDICTS FUTURE LUPUS HOSPITAL ADMISSION

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Background: There are several validated tools to quantitate lupus disease activity, end-organ damage and overall fragility. An algorithm to predict the hospitalization risk in lupus patients was proposed by Li et al¹. That algorithm was able to effectively screen patients at increased risk of hospitalization using EHR information only. Recently, the new 2019 Lupus classification criteria score has been noted to accurately predict 10 year mortality².

Objectives: To test the above 2 algorithms with potential to predict lupus related hospital admissions.

First, we attempted to validate the existing algorithm from the index study of Li et al to predict lupus hospitalization.

Second, we tested the 2019 lupus clinical classification score for its ability to predict hospitalizations.

Methods: A retrospective chart review was performed using EHR data collected from 2013 to 2018 at University of Kentucky (UK) Medical Center. Inclusion criteria were 18 years or older at first outpatient rheumatology appointment at UK, at least 3 outpatient rheumatology visits at UK, and ICD 9/10 code for Lupus. A total of 217 patients met inclusion criteria. Variables similar to the index study were extracted from patients' first outpatient rheumatology visit at UK. Additionally, 2019 Lupus Classification Criteria score was calculated. Patients who were subsequently hospitalized, manual chart review was done to determine if the hospitalization was attributable to lupus or not.

Results: Table 1 shows differences between the variables predicting hospitalization in patients in this study (UK) and the Ohio State University (OSU) cohort from whom the admission predicting algorithm was derived¹. All the risk factors that were found to predict lupus hospitalization in the index study, failed to achieve a statistical significance in our validation study.

Table 1. Differences in the variables predicting hospitalization between Index and Validation Cohort

Variables predicting Lupus Hospitalization	Index Study (Ohio State), % of patients (n=226)	Validation Study (University of Kentucky) % of patients; (n=217)
African American	33%	18%
Creatinine > 1.2	17%	7%
Hemoglobin < 11g/dl	79%	18%
Platelets < 180 / uL	75%	22%
High Risk immunosuppression	35%	9.2%
Missed appointment	27%	25%

There was more success predicting lupus hospitalization using the 2019 lupus classification criteria score (CCS) (Figure 1). A CCS ≥ 19 predicted higher risk of lupus related hospitalization vs CCS < 19 over the ensuing 2 years ($p=0.05$).