16 years old or older. We define the month patients met the above all criteria for the first time in this database as the index month. We excluded patients who were prescribed any DMARDs during the first 12 months from MTX users and those with prescription of any TT during the first 12 months from TT users (i.e., prevalent users). Among the study population, we divided patients into 3 groups according to their age at the index month; young group (16-64), elderly group (65-74), and older elderly group (≥ 75). The observation started from the index month and ended at 36 months later, the last month of the exposure of DMARDs, the month of loss of follow-up, or September 2019, whichever came first. HI was defined by ICD10 code with one prescription of predefined drugs for each infection during hospitalizations. Some of HIs were defined by ICD10 code alone.

Results: In this study, 8269, 6454, 5745 patients with RA were included in the young, elderly, and older elderly groups, respectively. The incidence rate (IR) of HI (/100 patient-years [PY]) [95%CI] was 3.4 [3.1-3.7] in the young group, 5.8 [5.3-6.3] in the elderly group, and 12.0 [11.2-12.8] in the older elderly group. IR rate (IRR) of HI (reference: the young group) was 1.7 [1.5-1.9] in the elderly group and 3.6 [3.2-4.0] in the older elderly group. In the young group, the IRR of HI in TT users vs MTX users was significantly elevated (1.8 [1.5-2.1]), whereas, those of the elderly and the older elderly groups were significantly decreased (IRR 0.8 [0.7-0.9] for elderly; 0.6 [0.5-0.7] for older elderly). Concomitant use of immunosuppressive DMARDs or prednisolone ≥ 10 mg/day with TT became less frequent with aging.

Conclusion: The elderly and older elderly patients had significantly higher risks of HI compared to the young. The risk of HI under the TT compared to MTX was decreased in the elderly patients, probably due to adjusting for treatment by attending physicians.

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FRI0076

RELATIONSHIP BETWEEN DEPRESSION, LEARNED HELPLESSNESS, DISABILITY AND DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Rheumatoid Arthritis (RA) has been associated with depression by up to 46% (1)

Within the universe of manifestations of depression is learned helplessness (LH) LH is defined as an inadequate perception of the disease, generating feelings of defenselessness, loss of self-esteem, pessimism, and negativity. This leads to passivity, surrendering to fate, and thoughts that nothing within their power can change their situation, this condition produces a rapid deterioration which prevents responding adaptively to a traumatic situation, increasing the frequency of anxiety and depression. (2)

Objectives: To assess the relationship between depression, LH, disability and disease activity among patients with RA

Methods: Descriptive observational study included RA patients diagnosed according to ACR / EULAR 2010 randomly recruited between June and September 2019 at University Hospital "Dr. José Eleuterio González" in Monterrey, México.

Beck Depression Inventory (BDI) and Rheumatology Attitude Index (RAI) were applied for measure depression and LH, to measure disability Health Assessment Questionnaire (HAQ-DI) was applied. CDAI and DAS28-PCR scales were used for measure disease activity.

Descriptive analysis was carried out with measures of central tendency and dispersion. Spearman correlation were used for comparisons, according to the distribution of the variables. A $p < 0.05$ was considered statistically significant.

Results: A total of 177 patients were included, demographic and clinic features are presented in table 1. Prevalence of LH was 94.5% (167/177); 60% (100/167) mild levels (9-15) and 33% (67/167) high levels (>15). A significant correlation was found between higher levels of dysfunctionality and BDI and higher levels of LH ($\rho = 0.338$; $p = 0.001$). There was a positive association when measuring CDAI ($\rho = 0.235$; $p = 0.002$) BDI ($\rho = 0.278$ $P < 0.001$) and DAS28-PCR ($\rho = 0.166$; $p = 0.027$) with higher levels of LH. There was no association found between other variables as gender, years of diagnosis of RA, years of study or presence of comorbidities like fibromyalgia or osteoarthritis.

Table 1. Demographic and clinical characteristics of the patients. HAQ-DI Health Assessment Questionnaire RAI Rheumatology attitude index, DAS28-PCR Disease Activity Score CDAI Clinical disease activity index BDI Beck Depression Inventory

Demographics	n = 177
Gender	
Female n, %	165 (93.3%).
Male n, %	12 (6.8%)
Age (mean), SD.	52.16 (12.8)
Years of study (average), SD.	8.3 (3.6)
Years with RA (mean), SD.	8.2 (8.0)
RAI (mean), SD	13.83 (3.9)
HAQ-DI (mean), SD	0.67 (0.77)
CDAI (mean), SD	12.0 (11.4)
DAS28-PCR (mean), SD	2.4 (0.6)
BDI (mean), DE	9.30 (9.7)
LH, n (%)	168/177 (94.5%)
	High levels 108/177 (61%)
	Low levels 60/177 (33%)

Conclusion: In this study the prevalence of LH was high $>90\%$, mainly in mild levels. Dysfunctionality seems to be the factor most associated with the presence of depression and LH.

Rheumatologist should consider the high levels of LH, to assess patients in order to obtain a better outcome.

Table 2. Correlation between learned helplessness and clinical variables LH Learned Helplessness HAQ-DI Health Assessment Questionnaire RAI Rheumatology Attitude Index DAS28-PCR Disease Activity Score CDAI Clinical Disease Activity Index BDI Beck Depression Inventory

	ρ	p
LH -HAQ-DI	0.338	<0.001
LH-CDAI	0.235	0.002
LH-DAS28PCR	0.166	0.027
LH-BDI	0.278	<0.001

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FRI0077

THE PREVALENCE OF DEPRESSION AND ANXIETY IN PATIENTS WITH RHEUMATOID AND PSORIATIC ARTHRITIS AND ITS CONTRIBUTORY FACTORS

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Background: Rheumatoid Arthritis (RA) and Psoriatic arthritis (PsA) are both chronic, progressive inflammatory arthritis that can cause significant disability and morbidity. Depression in RA has been associated with higher levels of disease activity, pain, fatigue, work disability, lower treatment compliance and increased suicidal risk and mortality [1]. PsA patients suffer from psoriasis and joint involvement; hence have greater odds of depression by 2.1 times compared with RA [2].

Objectives: To compare the prevalence rates of depression and anxiety and its associated factors between RA and PsA patients in Hospital Putrajaya.

Methods: A cross sectional survey using the Hospital Anxiety and Depression Scale (HADS) questionnaire were distributed to 300 patients who attended rheumatology outpatient clinic from February – April 2019. The HADS was categorized into 3 groups based on their scores 0-7 (Normal); 8-10 (Borderline); and 11-21 (Abnormal). Data on patient demographics and components of disease assessment scores were recorded. Disease activity was assessed using DAS 28-CRP for all patients. Additional evaluation using Bath Ankylosing Spondylitis Disease Activity Score (BASDAI) and body surface area (BSA) were done for PsA patients. P value of < 0.05 was taken as significant.

Results: In total, 205 RA and 73 PsA patients were eligible for analysis. Majority of the patients were female, Malay and married for both groups. The mean age group for RA and PsA were 56.2 ± 11.9 years and 51.0 ± 14.6 years. The mean duration of disease for RA were 8 ± 10 years; while for PsA were 6 ± 11 years. The prevalence rates of depression and anxiety for RA were 8.3% and 13.7%; and PsA were 9.6% and 17.8% respectively. Borderline scores for depression occurred in 16.1% of RA patients and 12.3% for PsA. Twenty percent of RA patients (n=41) and twenty-four percent of PsA patients (n=18) scored borderline for anxiety. The significant positive correlations with depression and anxiety in RA include high disease activity scores ($r = 0.27$; $r = 0.31$), number of tender joints ($r = 0.26$; $r = 0.24$) and pain ($r = 0.29$; $r = 0.27$). Higher number of swollen joints significantly correlated with depression ($r = 0.16$) but not with anxiety. RA patients with Ischaemic Heart Disease (IHD) $\pm$ heart failure have higher depression scores ($p < 0.05$). As for PsA group, high BASDAI score (anxiety: $r = 0.34$, depression: $r = 0.26$) and psoriasis involving head and neck region ($p < 0.05$) were significant associated factors. Age was inversely correlated with anxiety in the PsA group.

Conclusion: There is higher prevalence of anxiety in both RA and PsA as compared to depression. Higher disease activity scores were associated with depression and anxiety in both RA and PsA with axial involvement.

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FRI0078

SERUM IRISIN LEVEL IN RHEUMATOID ARTHRITIS PATIENTS: ITS RELATIONSHIP TO DISEASE ACTIVITY AND CARDIOVASCULAR MANIFESTATIONS

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Background: Active Rheumatoid Arthritis (RA) is associated with considerable changes in body composition, lipids, adipokines and insulin sensitivity. RA is an independent risk factor for CVD. The mechanisms leading to synovial inflammation are similar to those found in unstable atherosclerotic plaque. Irisin is a metabolic hormone and a novel adipomyokine related to insulin resistance and endothelial functions (1).

Objectives: To investigate the relationship between serum irisin levels, disease activity and cardiovascular risk in RA patients, and to test its performance in predicting subclinical atherosclerosis in RA patients.

Methods: 60 RA patients fulfilling the 2010 ACR/EULAR RA Classification Criteria and 30 healthy controls were recruited for serological testing of irisin levels. BMI was calculated. Waist/hip ratio was measured. RA disease activity was assessed by DAS28-ESR. Disability was assessed by HAQ-DI in its Arabic version. Serum ESR, CRP, glycated hemoglobin (HbA1c), lipid profile (serum level of cholesterol, triglyceride, HDL, LDL and cholesterol/ LDL ratio), insulin levels were measured in all patients and controls. Homeostasis Model Assessment of Insulin Resistance (HOMA-IR) was used to calculate insulin resistance.

Carotid intimal medial thickness (C-IMT), an indicator of atherosclerosis, was measured by carotid doppler ultrasonography. Echocardiography was performed to assess cardiac abnormalities. Our RA patients were classified twice; first, according to cardiovascular abnormalities and second, according to cut-off values of DAS28.

Results: Serum irisin levels were significantly lower in RA patients (9.84 ± 10.56 ng/ml compared to controls (20.48 ± 13.82) ng/ml ($p < 0.001$). BMI values were significantly higher in all patients than controls ($P = 0.035$), while waist/hip ratio in female patients only were significantly higher ($P = 0.007$). We found a negative correlation between serum irisin and DAS28-ESR ($r = -0.455$, P -value 0.005) & HAQ-DI ($r = -0.309$, P -value 0.016). There was a negative correlation between serum irisin level and parameters of cardiovascular risk including anthropometric measurements (BMI and waist/hip ratio), HOMA-IR ($r = -0.371$, $p = 0.009$) and C-IMT ($r = -0.511$, $p < 0.001$). No correlation could be detected between irisin and lipid profile. The frequency of cardiovascular (CV) involvement in RA patients was 45% (27 patients) (11.6 % with echocardiographic abnormalities and 40% having increased C-IMT). Patients with CV involvement showed lower serum irisin level, increased disease activity assessed by DAS28 and increased disease disability assessed by HAQ-DI with statistically significant difference ($P < 0.001$, $P < 0.05$ and $P < 0.001$ respectively). Classifying the patients based on cut-off values of DAS28 into 3 groups (low disease activity, moderate and high disease activity), we found a statistically significant difference between the irisin levels of the 3 groups, being lowest among highly active patients ($P = 0.014$). c-IMT values were significantly higher in highly active patients ($P = 0.04$). Assessing the biomarker's performance as an independent indicator of subclinical atherosclerosis in RA patients using ROC curve, it showed an excellent ability (AUC 0.8, $P < 0.001$). As regarding its ability to differentiate patients with high disease activity, it showed a very good performance (AUC 0.73, $P < 0.001$).

Conclusion: In RA patients, serum irisin level was significantly lower and perform better than traditional yardsticks in identifying disease activity. It may act as an independent indicator of subclinical atherosclerosis in RA patients. Serum irisin level may be responsible for increased cardiovascular risk in those patients.

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FRI0079

CHARACTERISTICS OF DIFFICULT-TO-TREAT RHEUMATOID ARTHRITIS

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Background: Despite remarkable progress in therapy, not a few patients with rheumatoid arthritis (RA) have not achieved treatment target. Various factors can be ascribed to difficult-to-treat RA, however, little is known about their characteristics.

Objectives: To clarify characteristics of patients with difficult-to-treat RA in real-world.

Methods: We reviewed all consecutive RA patients in Keio University Hospital between 2016 and 2017 and collected medical information. We defined patients in moderate disease activity and high disease activity according to disease activity score for 28 joints (DAS28) at the last visit despite more than one year treatment for RA as difficult-to-treat RA and analyzed their clinical characteristics.

Results: A total of 1693 patients with RA were enrolled in the analysis. The mean age at the last visit was 64 years old, female was 83%, and the mean disease duration was 11.9 years. Rheumatoid factor and anti-cyclic citrullinated peptide were positive for 76% and 75% of the patients, respectively. The current treatment were conventional synthetic disease modifying anti-rheumatic drugs in 73%, biologic agents or janus kinase (JAK) inhibitors in 57%, and glucocorticoids in 13%. Disease activity according to DAS28 was remission in 65%, low disease activity in 21%, and moderate/high disease activity in 14%, which was defined as difficult-to-treat RA. Characteristics of difficult-to-treat RA were the mean age of 70 years old, female of 89%, and the mean disease duration of 14.8 years. The current treatments were conventional synthetic disease modifying anti-rheumatic drugs alone in 40.7%, biologic agents or JAK inhibitors in 55.8%, and glucocorticoids in 29.0%. The causes of difficult-to-treat RA were unresponsiveness to several biologic agents and/or JAK inhibitors in 22.9%, comorbidities in 33.8%, and personal reasons in 39.8% (costs in 35.9%, low adherence in 4.3%, concerns about possible adverse reaction of drugs in 54.3% and high patient global assessment in 5.4%). Patient characteristics were significantly different between the causes; age at RA onset (51 vs 61 vs 51 years, $p < 0.001$), current age (65 vs 77 vs 66 years, $p < 0.001$), estimated glomerular