conducted using a RA patient cohort: the Kyoto University Rheumatoid Arthritis Management Alliance (KURAMA) cohort.

Objectives: The purpose of this study is to clarify risk factors related to functional disability in knee joint from a RA cohort.

Methods: A total of 447 female RA patients (mean age; 63.7 years) were recruited in KURAMA cohort. Clinical data included age, disease duration (DD), Steinbrocker stage and class, anti-cyclic citrullinated peptide antibody (anti-CCP), rheumatoid factor (RF), C-reactive protein (CRP), matrix metalloproteinase-3 (MMP-3), Disease Activity Score 28 using CRP (DAS28-CRP), and visual analogue scale for pain (Pain-VAS). Knee function was assessed by the scores of the Japanese Knee Osteoarthritis Measure (JKOM) questionnaire.³ The correlations between the total JKOM score and each factor were evaluated by univariate and multivariate regression analyses.

Results: A total score of JKOM had a median value of 17 points, an interquartile range of 5.5 to 43.5 points. Univariate analyses showed that age, DD, stage, class, anti-CCP titer, CRP, MMP-3, DAS28-CRP, and Pain-VAS were significantly correlated with total JKOM score (table 1). Multivariate regression analysis with JKOM as the objective variable revealed that Pain-VAS ($\beta=0.63$, $p<0.01$), age ($\beta=0.23$, $p<0.01$), and MMP-3 ($\beta=0.16$, $p<0.01$) were extracted as significant factors (table 2).

Abstract AB1335 – Table 1. Pearson's correlation coefficients (r) between each risk factor for knee disability and total JKOM score.

Parameter	r	p
Age	0.32	< 0.01
Disease duration	0.22	< 0.01
Steinbrocker stage	0.24	< 0.01
Steinbrocker class	0.29	< 0.01
Anti-CCP	0.13	0.01
CRP	0.20	< 0.01
MMP-3	0.33	< 0.01
DAS28-CRP	0.54	< 0.01
Pain-VAS	0.66	< 0.01

Parameter	β	p
Age	0.23	< 0.01
MMP-3	0.16	< 0.01
Pain-VAS	0.63	< 0.01

Abstract AB1335 – Table 2. Multivariate regression analyses of risk factors for knee disability and total JKOM scores.

Conclusions: Pain has the most significant influence on knee joint symptoms in RA patients. Serum MMP-3 is closely related to knee joint disability, and attention should be paid to knee joint dysfunction in RA patients with high serum MMP-3.

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AB1336

MUSCULOSKELETAL DISORDERS IN HEMODIALYSIS PATIENTS: DIFFERENT DISEASE CLUSTERING ACCORDING TO AGE AND DIALYSIS VINTAGE

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Background: The number of patients suffering from stage 5 Chronic Kidney Disease is constantly increasing and their life expectancy has improved due to the hemodialysis technique. Musculoskeletal disorders remain a major problem in long term hemodialysis patients. Frequency and severity of these manifestations increase with the length of the dialysis.

Objectives: To identify diseases clustering profiles of musculoskeletal disorders in hemodialysis patients.

Methods: All adult patients in the hemodialysis centre were included in this cross-sectional study. For each patient, we filled a data collection sheet including basic demographic characteristics, musculoskeletal symptoms, biologic parameters and treatments. Musculoskeletal disorders were classified by a rheumatologist into pre-defined diagnostic categories: Osteoarthritis, Fractures, Tendinopathies, Carpal Tunnel Syndrome, Crystal deposition disease and Others. Prevalences were presented and a cluster analysis was performed.

Results: Eighty-nine patients were included (table 1). Mean age was 67.5±12 years. 43.8% were female. Dialysis vintage was 5.7±5.37 years. Musculoskeletal symptoms were reported by 76.4% of the patients. Pain was the most frequent symptom (44.9%). The main disorders were osteoarthritis (53.9%), fracture (27%), tendinopathy (22.5%), carpal tunnel syndrome (18%), and chondrocalcinosis (9%). Musculoskeletal symptoms were significantly related to the dialysis vintage and age ($p=0.044$, $p=0.035$ respectively). All disorders categories were significantly associated with dialysis vintage, particularly increasing after the seventh year of dialysis. Cluster analysis identified three patient profiles: younger with low calcium levels, younger but long dialysis vintage with osteoarthritis and carpal tunnel syndrome, older and long dialysis vintage with fractures (figure 1).

Abstract AB1336 – Table 1

Population characteristics	
N	89
Age (years±SD)	67.5±12.6
Sex ratio (M/F)	49/39
Age at the start of hemodialysis year(±SD)	61.5±14.6
Dialysis vintage (years±SD)	5.7±5.37
Diagnostic nephropathy	
Diabetes	27 (30.3%)
Hypertension	26 (29.2%)
Chronic glomerulonephritis	13 (14.6%)
Polycystic kidney disease	10 (11.2%)
Chronic interstitial nephropathy	7 (7.9%)
Others	6 (6.7%)

Abstract AB1336 – Figure 1

Conclusions: The prevalence of the musculoskeletal manifestations is high (76.4%) in the hemodialysis population. Musculoskeletal disorders seem to cluster differently according to age and dialysis vintage.

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AB1337 CELIAC DISEASE AND RISK OF SARCOIDOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Several epidemiologic studies have demonstrated that patients with celiac disease may be at an increased risk of developing sarcoidosis. However, the data on this risk remain inconsistent.

Objectives: To compare the risk of developing sarcoidosis between patients with celiac disease and individuals without celiac disease.

Methods: A literature review was performed using MEDLINE and EMBASE database from inception to December 2017. Studies that compared the risk of sarcoidosis among patients with celiac disease versus those without celiac disease were included. The inclusion criteria were as follows: ¹ case-control, cross-sectional or cohort studies that investigated the risk of sarcoidosis among patients with celiac disease compared with individuals without celiac disease and ² odds ratios (OR), relative risks (RR), hazard ratios (HR) or standardised incidence ratios (SIR) with 95% confidence intervals (CI) or sufficient raw data to calculate these ratios were provided. Study eligibility was independently determined by 3 investigators. Differences in the determination of study eligibility were resolved by mutual consensus. Pooled odds ratio (OR) and 95% confidence interval (CI) were calculated using a random-effect, generic inverse variance method of DerSimonian and Laird.

Results: Of 375 retrieved studies, 4 studies (2 case-control studies and 2 cohort studies) with 6 93 639 participants met our eligibility criteria and were included in analysis. We found a higher risk of sarcoidosis among patients with celiac disease compared with individuals without celiac disease with the pooled OR of 7.16 (95% CI, 1.48–34.56). The statistical heterogeneity of this study was high ($I^2=95\%$). Funnel plot was relatively symmetric and did not suggest the presence of publication bias in favour of positive studies.

Abstract AB1337 – Figure 1. Forest plot of this meta-analysis

Conclusions: This systematic review and meta-analysis found a significantly higher risk of sarcoidosis among patients with celiac disease.

Disclosure of Interest: None declared

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AB1338 COHORT OF PARAGUAYAN PATIENTS WITH EARLY ONSET ARTHRITIS

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Background: The PANLAR-EOA (early-onset-arthritis) project includes panamericanrheumatologists to determine regional characteristics of patients with early onset arthritis.

Objectives: To describe the cohort of Paraguayan patients included in PANLAR-EOA project.

Methods: Longitudinal, prospective, multicentric study. Patients were included according to the PANLAR-EOA project and registered in REPANARC (www.panlareoa.org) database. At baseline and annual visits, a large number of demographic, clinical and analytical variables were recorded. Quantitative variables were characterised by their means and standard deviations, while the qualitative

variables were characterised according to the percentage of patients. The comparison of epidemiological and clinical variables was performed using the chi-squared test and the Wilcoxon test respectively for qualitative and quantitative variables, respectively.

Results: 136 patients with early onset arthritis were included, out of which 88 completed the 12 months follow up and 58 the 24 months one. In these, 86% were female with a median age of 43.9±13.2 years. The most frequent race was mestiza in 80.1%. According to GRAFFAR index, middle class was the predominant social stratum (9.8±3.1). The average number of years of schooling was 12.8±3.8. Polyarticular onset was registered in 61% patients. During follow-up, 43.1% had positive rheumatoid factor and 56.5% positive anti-CCP. The diagnostic delay was 3.9±3.0 months. Initially, 63.2% (86/136) were diagnosed with rheumatoid arthritis (RA) and 36.8% (50/136) with undifferentiated arthritis (UA). The most frequent treatment was methotrexate (85.3%, 90.9%, and 89.3% at baseline, 1 and 2 years of follow-up respectively). During follow-up, a significant diagnostic change was observed in patients with UA ($p=0.004$, $OR=2.9$ [95%CI, 1.4–6.5]). The variables associated with RA diagnosis were presence of anti-CCP ($p=0.000$, $OR=15.8$ [95%CI, 5.4–51.1]), rheumatoid factor ($p=0.000$, $OR=9.2$ [95%CI, 3.4–27.0]), smoking ($p=0.032$, $OR=8.8$ [95%CI, 1.1–404.7]), high body mass index ($p=0.041$, $OR=1.94$ [95%CI, 0.2–4.1]) and high activity measured by the DAS28 index ($p=0.01$). After one year of follow-up there was a significant decrease in disease activity according to DAS 28 ($p=2.2e-09$ [95% CI, -1.5, -0.9]), SDAI ($p=1.2e-11$ [95% CI, 18.2, -11.2]) and HAQ ($p=7.2e-08$ [95% CI, -0.7, -0.4]). Similar results were found at the 2nd year of follow-up, DAS28 ($p=8.8e-06$ [95% CI, -1.6, -0.7]), SDAI ($p=2.1e-07$ [95% CI, -20.0, -10.3]) and HAQ ($p=3.4e-08$ [95% CI, -0.9, -0.5]).

Conclusions: In this cohort of early onset arthritis, diagnostic delay was lower than that observed in other series and the rate of change from diagnosis of UA to RA was statistically significant during the first year of follow-up. A good control of the inflammatory activity of the disease was observed, with a significant improvement of all the variables analysed during its evolution.

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AB1339 ASSOCIATION OF ANTI-THYROID ANTIBODIES AND MUSCULOSKELETAL PAIN IN PATIENTS WITH AUTOIMMUNE THYROIDITIS

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Background: Autoimmune thyroiditis is closely associated with autoimmune diseases and can exhibit musculoskeletal pain as a clinical manifestation; the exact pathogenic mechanism of coexistence with other autoimmune disorders has not been clearly defined. There are very few studies that describe the association of anti-thyroid antibodies and musculoskeletal pain in patients with controlled autoimmune thyroiditis without rheumatologic disease

Objectives: To Determine the association of anti-thyroid antibodies and musculoskeletal pain in euthyroid patients with autoimmune thyroiditis who doesn't meet any criteria of a rheumatic disease

Methods: Fifty consecutive euthyroid (TSH test in a range of 0.34–5.6 µU/mL and Ft4 0.54–1.64 ng/dL) patients with a diagnosis of autoimmune thyroiditis (positive anti peroxidase antibodies [TPOAb] ≥ 10 IU/mL and/or anti thyroglobulin antibodies [TGAb] ≥ 5 IU/mL), who attended the endocrinology clinic in an one-year period were included. At the moment of enrollment the patients didn't meet any classification criteria of a rheumatic disease. The presence of musculoskeletal pain was assessed using the survey "Program of modified community orientation for rheumatic diseases" (COPCORD) phase II, validated for the Mexican population, and used as a tool to determine the prevalence of rheumatic and musculoskeletal diseases [6]. COPCORD questionnaire consists of several sections such as number of affected joints, anatomic sites and pain severity measured by Visual Analogue Scale (VAS) with values ranged from 0 to 10. Descriptive statistical analyses were performed using the mean, range and standard deviation of variables. Correlations of statistical significance between groups were carried out using Spearman's rank correlation. P values < 0.05 were considered to be significant.

Results: 26 patients were TPOAb positive (830.76 IU/mL ± 1169.33 IU/mL); 41 patients were TGAb positive (257.126 IU/mL ± 629.344 IU/mL). There was a positive correlation between the presence of TPOAb with the number of affected joints (Spearman $r=0.9618$, $p=0.00001$) and with pain intensity (Spearman $r=0.9552$, $p=0.00001$). Similarly, there was a positive relationship between TgAb with the number of joints affected ($r=0.07800$, $p=0.00001$) and with pain intensity ($r=0.7268$, $p=0.00001$).