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FRI0047 SPECIFICS OF THERAPY FOR RHEUMATOID ARTHRITIS PATIENTS UPON THYROID INVOLVEMENT IN THE AUTOIMMUNE DISEASE

I. Gontar¹, Olga Paramonova², Olga Rusanova¹, Olga Emelianova¹, Irina Zborovskaya¹. ¹Research Institute of Clinical and Experimental Rheumatology them. A.B. Zborovskiy, Volgograd, Russian Federation; ²Volgograd State Medical University, Volgograd, Russian Federation

Background: Apart from joints, the inflammation often involves other organs and tissues including lesions of the thyroid gland at which the disturbance of the gland affects considerably the functioning of cells of the immune system, and the activity of rheumatoid arthritis. Production of autoantibodies to thyroid hormones is assumed to be one of possible mechanisms of thyroid dysfunction.

Objectives: Studying various types of thyroid lesion in rheumatoid arthritis, searching for links between clinical manifestations of rheumatoid arthritis and specifics of thyroid lesion, and the level of antibodies to thyroid hormones.

Methods: The study included patients diagnosed with rheumatoid arthritis verified by ACR/EULAR criteria of 2010, and without any exclusion criteria. Rheumatoid arthritis activity was assessed utilizing DAS 28 Calculator.

The presence of thyroid lesion was evaluated by means of clinical workup, ultrasound examination, and laboratory tests, including measuring the concentration of TTH, free T3, T4, as well as anti-TPO. Antibodies to T3 and T4 (anti-T3 and anti-T4) were measured by enzyme immunoassay, and the findings were shown in absorbance units. The cut-off values of positive and negative findings for anti-T3 (0.098 absorbance units) and anti-T4 (0.093 absorbance units) were calculated by ROC curve analysis utilizing sera from relatively healthy donors (n = 39). The results were shown as an arithmetic mean value ± standard error (M ± m).

Results: 72 patients with rheumatoid arthritis participated in the study. The mean activity of rheumatoid arthritis assessed by DAS 28 Calculator was 3.2 ± 1.4 points. Extra-articular presentations were detected in 20 patients, 5 of whom showed clinical manifestations of thyroid lesion. All five patients were marked by low TTH and a high activity of rheumatoid arthritis (4.8 ± 1.9 points of DAS28). In 73 patients antibodies to T3 were detected (0.128 ± 0.047 absorbance units). Apart from the thyroid gland, no clear association between these antibodies and lesions of other organs or systems were noted. A statistically significant tendency for an increase in X-ray stage linked to increased antibodies to T4 was noted ($p = 0.034$; ANOVA); an inverse relation was noted for antibodies to T3 ($p = 0.034$; ANOVA). The association with DAS 28 for antibodies to T4 ($r = 0.525$; $p = 0.031$) and for antibodies to T3 ($r = -0.391$ $p = 0.040$) was also inverse and statistically significant. Besides, another statistically significant correlation was revealed between the value of DAS 28 and TTH concentration ($r = -0.330$ $p = 0.046$).

Conclusion: The available findings demonstrate that a high activity of rheumatoid arthritis is associated with hypothyroidism development, despite the tendency for increased count of antibodies to T4 which is typical of rheumatoid arthritis. The possibility to modify the activity of rheumatoid arthritis by correcting thyroid dysfunction is very important both for developing a strategy of managing drug-resistant cases of rheumatoid arthritis, and for the management of this condition in general.

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FRI0048

SARCOPENIA AND SARCOPENIC OBESITY ARE ASSOCIATED TO GLUCOCORTICOID USE AND CLINICAL AND SEROLOGICAL MARKERS IN RHEUMATOID ARTHRITIS

Iris Paola Guzmán-Guzmán¹, Oscar Zaragoza-García¹, José Eduardo Navarro-Zarza², Mónica Ramírez³, Isela Parra-Rojas¹. ¹Universidad Autónoma de Guerrero, Facultad de Ciencias Químico Biológicas, Chilpancingo, Guerrero, Mexico; ²Hospital General de Chilpancingo, Departamento de Reumatología y Medicina Interna., Chilpancingo, Guerrero, Mexico; ³Consejo Nacional de Ciencia y Tecnología., Universidad Autónoma de Guerrero, Chilpancingo, Guerrero, Mexico

Background: Sarcopenia play an important role in the quality of life, morbidity and mortality of the patients, especially in who suffer chronic disease. In rheumatoid arthritis (RA) sarcopenia risk is higher due to joint dysfunction, pharmacological therapy and chronic inflammation¹; these conditions may induce changes in body composition such as an increase in visceral fat associated to reduced muscle mass. Recently emerge the concept of sarcopenic obesity, however the association to clinic characteristics and pharmacotherapy in RA has not been established.

Objectives: We investigated the prevalence of sarcopenia and sarcopenic obesity, as well as the relationship with glucocorticoids (GCs) use and clinic characteristic of RA patients from southern Mexico.

Methods: We carried out a cross-sectional study in 223 RA patients (89% women, mean age 44 years), all diagnosed according to ACR/EULAR 2010 criteria. The body composition was examined using a bioimpedance method (body weight, muscle mass, body fat, etc.). Abdominal

obesity was defined by WHO criteria and the hand grip strength was evaluated by dynamometry. Sarcopenia was defined according to The European Working Group on Sarcopenia in Older People, as Skeletal Muscle Mass Index less than 5.45 kg/m² in women and less than 7.26 kg/m² in men, while sarcopenic obesity was defined by the presence of sarcopenia more abdominal obesity. The GCs use and dosage (prednisone and methylprednisolone) were analyzed reviewing the clinical records. Anti-cyclic citrullinated peptides (anti-CCP) antibodies, rheumatoid factor (RF) levels, high sensitivity C reactive protein (hsCRP), erythrocyte sedimentation rate (ESR) were determinate. The morning stiffness, clinic activity of disease (DAS28-ESR score) and disability index functional (HAQ-DI) were measurement.

Results: In this study 86% of the population had sarcopenia and 44% sarcopenic obesity. The 62.8% under GCs therapy. The prednisone dosage was positively associated to sarcopenia (>5 mg/day; OR=4.3, p=0.003) and sarcopenic obesity (OR=3.2, p=0.06). The intramuscular pulse of methylprednisolone (40 mg/kg) was associated to sarcopenic obesity phenotype (OR=2.61, p=0.09). Regarding the clinical and serological markers in RA, high disease activity (DAS28-ESR score) was associated to sarcopenia (OR=6.6, p=0.01) and sarcopenic obesity (OR=6.3, p=0.02). The morning stiffness (p=0.03), RF (p=0.05), anti-CCP positive (p=0.03) and HAQ-DI score (p=0.04) were too associated, mainly to sarcopenic obesity.

Conclusion: Sarcopenia and sarcopenic obesity are associated to GCs dosage and with serological and disease activity markers in RA patients from southern Mexico. So that is needed promote monitoring and management of sarcopenia and sarcopenic obesity in RA patients.

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FRI0049 COGNITIVE IMPAIRMENT AND RHEUMATOID ARTHRITIS IN MOROCCAN PATIENTS

Azzouzi Hamida, Fadoua Chennouf, Eddarami Jalila, Ichchou Linda, Mohammed VI University Hospital, Mohammed I University, Rheumatology department, Oujda, Morocco

Background: Cognition in rheumatoid arthritis is regaining interest in publications lately. A recent experimental study(1), have shown that low grade chronic periodontal infection by *Porphyromonas gingivalis* result in the development of neuropathology that is consistent with that of Alzheimer dementia in adult mice. This same pathogen has been linked previously in many studies to the development of RA. These findings are raising existing doubt about an association between cognitive impairment and RA.

Objectives: Our study aims to assess cognitive impairment in RA patients in remission state.

Methods: It is a cross-sectional study realized at the rheumatology department of our University hospital. Our established RA patients regularly followed were asked to fulfill the Arabic version of the mini mental state examination (A-MMSE)(2) twice (initially and 15 days later) and the Patient Health Questionnaire (PHQ-9)(3) test for depression. Patients with neurological history (stroke, chronic infection and hematoma) have been excluded. Data about demographic, clinical (body mass index, Disease Activity Score of 28 joints, Health Assessment Questionnaire, modified total sharp score), biological (C-Reactive Protein, blood cell count, Anti-Citrullinated Peptide Antibodies, thyrotropin, vitamin B12, folic acid) characteristics was recorded. A-MMSE under 24 after adjustment for the level of education as recommended was considered abnormal. A cut-off of 10 of the PHQ-9 was considered as suggestive of depression. A descriptive study and regressions were done by SPSS.20 software and p<0.05 was taken as significant.

Results: A total of 80 patients were recruited, with an average age of 55.9 ± 8.5 years. Women were predominant (86.3%) in this population with an illiteracy rate of 66.3%. Our patients were ACPA positive in 93.8% of the cases, with mean disease duration of 11.4±8.65 years. They were receiving cDMARDs in 96.3%. Their average DAS28CRP was 2.19 ± 0.92, and their mean HAQ was 1.14±0.89. Five patients had thyroid disease and were receiving treatment, 20% of the population had anemia but with correct vitamin B dosage (essentially iron deficiency). The A-MMSE was abnormal in 57% at the first time, and in 38.8% of

the cases at the second try fifteen days later, while 27.5% of the patients had a PHQ9>10. The fields of altered A-MMSE were: attention and calculation (46.3%), copying (53.8%), orientation (38.8%), recall (25%) and language (41.3%).The immediate recall part was little concerned. No association was found for low MMSE in regressions with age, gender, menopause, BMI, disease parameters (HAQ, DAS, CRP, ACPA, mTSS) or other possible influencing factors (uric acid, creatinine clearance). An elevated PHQ was not correlated to A-MMSE in our patients (P=0.22). Only their level of education was significantly related to A-MMSE (p<0.0001).

Conclusion: It is certainly true that the interpretation and evaluation of cognitive functions is a difficult task, especially in an illiterate and disabled patient. However, in our study A-MMSE results were low even after test repetition, and in a state of disease remission. Although these results underscore the high frequency of cognitive impairment in RA patients, we estimate that further studies are eligible to confirm causality.

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FRI0050 CARDIOVASCULAR RISK IN THE RHEUMATOID ARTHRITIS PATIENTS OF THE GULF CORPORATION COUNCIL-GCC: WHAT CONTRIBUTE TO THE CAROTID INTIMA MEDIA THICKNESS

Suad Hannawi¹, Haifa Hannawi², Issa Al Salmi³. ¹Ministry of Health and Prevention, Rheumatology, Dubai, United Arab Emirates; ²Ministry of Health and Prevention, Dubai, United Arab Emirates; ³The Royal Hospital, Muscat, Oman

Background: Rheumatoid arthritis (RA) is a common inflammatory joints disease that occurs in 1-3% of population. RA patients are at higher risk of cardiovascular disease (CVD). This accelerated atherosclerosis can't be fully explained by the traditional CVD risk factors. The CVD risk factors had never been investigated in the RA patients of Gulf Corporation Council (GCC).

Objectives: For the first time, this study assesses the CVD as manifested by carotid intima media thickness (cIMT) and the CVD risk factors (traditional and non-traditional) in RA GCC-population.

Methods: 216 RA (179 (83%) F and 37 (17%) M) GCC patients, who were free of atherosclerosis (CVD & Cerebrovascular diseases) included over 5 years (2013-2018). Diabetic, hypertensive, gout, renal and thyroid patients, pregnant, current smokers and those with history of smoking, and patients on diuretics medications were excluded. cMIT ultrasound (US) measurements were obtained using a real-time US scanner equipped with a 7.5-MHz linear probe. Blood tests (full blood counts, liver function, renal profile, and inflammatory markers), demography details, and body mass index (BMI) had been obtained within the same week of the cIMT scan. The correlation between cIMT and other variables were calculated using simple linear and multivariate regression analysis.

Results: The mean cIMT was 0.58 ± 0.11 mm (Min 0.28, Max 0.98). The mean age was 48 ± 13 years (48 ±12 yrs for females, 50±16 yrs for males, p= 0.279).

univariate regression analysis showed a positive linear relationship between cIMT and age of the participants (p=0.001, CI: 0.00, 0.01), hemoglobin (Hb) (p=0.006, CI: 0.004, 0.023), hematocrit (p=0.006, CI: 0.001, 0.008), mean cell volume (MCV) (p=0.027, 0.000, 0.004), mean cell hemoglobin (p=0.04, CI: 0.000, 0.009), platelet (p= 0.000, CI: -0.001, -0.000), monocytes (p= 0.02, CI: 0.001, 0.018), eosinophils (p= 0.011, CI: 0.002, 0.018), erythrocyte sedimentation rate (ESR) (p=0.04, CI: 0.000, 0.001), creatinine (p=0.002, CI: .000, 0.002), uric acid (p=0.002, CI: 0.0001, 0.0004), triglycerides (p=0.033, CI: 0.002, 0.044), low density lipoprotein (LDL) (p=0.002, CI: 0.010, 0.045), C-reactive protein (p= 0.000, CI: 0.001, 0.002), ferritin (p=0.000, CI: 0.000, 0.001), body weight (Kg) (p=0.018, CI: 0.000, 0.002), body mass index (Kg/Ht²) (p=0.026, 0.000,