morbidity. In patients with RA it has been established a high prevalence of comorbidities and their risk factors (1).

Objectives: The aim of this study was to evaluate the prevalence of comorbidities in Colombian patients with RA enrolled in an educational multidisciplinary program and possible correlation with disease activity

Methods: We performed a cross-sectional study; we included patients with confirmed diagnosis of rheumatoid arthritis in a specialized RA center. We collected sociodemographic data, and markers of disease activity DAS28. We collected data regarding the history of comorbidities such as hypertension, dyslipidemia, osteoporosis, type 2 diabetes mellitus, hypothyroidism, malignancies, among others. We performed a descriptive analysis, variables with a normal distribution were described using mean and standard deviation (SD), and non-normal distributed variables were described using median and interquartile range. Categorical variables were presented as rates. We evaluated the relationship between disease activity and comorbidities.

Results: We included 251 patients; mean age was 59 ± 9.8 years old, with a high proportion of women 93%; median disease duration was 15 years RIQ (8-20); in this study, 145 (65%) of patients were in remission; 35 (11%) had low, 44 (20%) moderate and 10 (4%) high disease activity. Regarding pharmacological therapy, 55% were receiving conventional DMARDs. The prevalence of comorbidities was 85%, the most common were high blood pressure 25% followed by hypothyroidism 12% and diabetes 10%, 0.7% of patients had malignancies such as thyroid cancer or breast cancer, 1.29% of patients had renal comorbidities. Among comorbidities related to RA 30% had osteoporosis and 20% arthrosis. We did not find a statistical association between DAS28 and comorbidities.

Conclusion: As other studies have shown, there is a high prevalence of comorbidities among RA patients, mainly high blood pressure. Due to the above, it is relevant to evaluate the risks factors of patients with RA, especially cardiovascular risks. We consider that a multidisciplinary program represents an opportunity not only to educate patients about healthy life styles and the management of RA, but also other diseases in order to increase the empowering of the health status in these poly pathological patients(2).

References:

- [1] Gullick NJ, Scott DL. Co-morbidities in established rheumatoid arthritis. Best practice & research Clinical rheumatology. 2011;25(4):469-83.
- [2] Galarza-Delgado DA, Azpiri-Lopez JR, Colunga-Pedraza IJ, Cardenas-de la Garza JA, Vera-Pineda R, Wah-Suarez M, et al. Prevalence of comorbidities in Mexican mestizo patients with rheumatoid arthritis. Rheumatology international. 2017;37(9):1507-11.

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AB1297-HPR BONE AND MINERAL METABOLISM IN SPONDYLOARTHRITIS

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Background: Spondyloarthritis is the term for a group of inflammatory chronic diseases primarily affecting the axial skeleton, as well as the peripheral joints. Regarding bone metabolism in these patients, several studies have reported higher levels of inflammatory activity (BASDAI, BASMI, ESR and CRP) in patients with osteoporosis compared to those without this disease, although no correlations were found.

Objectives: To describe clinical, serological and biological characteristics, as well as bone and mineral metabolism, according to analytical and densitometric criteria in a patient cohort with spondyloarthritis.

Methods: Observational, descriptive and cross-sectional study. A retrospective review was conducted of a database of patients with spondyloarthritis treated during outpatient visits at the Rheumatology Department of Hospital General Universitario de Ciudad Real between June 2018 and June 2019. Variables are described using measures of frequency and of central tendency and dispersion.

Results: Cohort of 115 patients (64 men and 51 women). Average age 45.97 years (± 13.41 SD). Ankylosing spondylitis in 54 patients, psoriatic arthropathy in 24, spondyloarthropathy associated with inflammatory bowel disease in 8, undifferentiated spondyloarthritis in 18 and other types of spondyloarthritis in 11. Regarding treatment, 40.88% of patients received disease-modifying drugs

(methotrexate, sulfasalazine, etc.) and 43.4% received biologic drugs (86% anti-TNF alpha, 12% anti-IL-17 and 2% anti-IL-12/23). Moreover, 53.04% had received corticosteroids during some phase of their disease. Vitamin D levels were 23.81 (± 10.5 SD) and 77.4% of patients had a vitamin D deficiency/insufficiency. Of the total cohort, 34.78% presented osteopenia and 3.58% osteoporosis (T-Score and Z-Score).

Conclusion: In this study, patients with spondyloarthritis show high percentages of osteopenia and osteoporosis, undiagnosed until this time, along with vitamin D deficiency. This data suggests higher prevalences of these metabolic bone diseases. Osteoporosis prevention is essential due to the risk of developing early fractures resulting from increased bone fragility.

References:

- [1] Pray C, Feroz NI, Nigil Haroon N. Bone Mineral Density and Fracture Risk in Ankylosing Spondylitis: A Meta-Analysis. Calcif Tissue Int. 2017 Aug;101(2):182-192.
- [2] Zhang M et al. The association between ankylosing spondylitis and the risk of any, hip, or vertebral fracture: A meta-analysis. Medicine (Baltimore). 2017 Dec; 96(50): e8458.
- [3] Erten S, Kucuksahin O, Sahin A, Altunoglu A, Akyol M, Koca C. Decreased plasma vitamin D levels in patients with undifferentiated spondyloarthritis and ankylosing spondylitis. Intern Med. 2013;52(3):339-44
- [4] Mermerci B, Pekin Dogan Y, Sivas F, Bodur H, Ozoran K. The relation between osteoporosis and vitamin D levels and disease activity in ankylosing spondylitis. Rheumatol Int 2010;30:375-381.
- [5] Arends S, Spoorenberg A, Bruyn W, Houtman PM, Leijnsma MK, Kallenberg CGM, Brouwer E, van der Veece. The relation between bone mineral density, bone turnover markers, and vitamin D status in ankylosing spondylitis patients with active disease: a cross-sectional analysis. Osteoporos Int 2011;22:1431-1439.
- [6] Lange U, Teichmann J, Strunk J, Iler-Ladner U, Schmidt KL. Association of 1.25 vitamin D2 deficiency, disease activity and low bone mass in ankylosing spondylitis.

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AB1298-HPR RHEUMA-VOR: A PROOF-OF-CONCEPT NETWORK STUDY FOR THE IMPROVEMENT OF RHEUMATOLOGICAL HEALTH CARE THROUGH COORDINATED COOPERATION

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Background: Rheumatoid arthritis (RA), psoriasis arthritis (PsA) and spondyloarthritis (SpA) are the most common chronic inflammatory rheumatic diseases. For all three diseases, the so-called "window of opportunity" [1,2,4] has been identified as the decisive factor affecting the outcome.

Objectives: The aim of the prospective study is to improve the early diagnosis of RA, PsA and SpA and thus positively impact the quality of care for patients with the support of coordinating centers.

Methods: Primary care providers are given access to screening questionnaires to document potential early cases of RA, PsA, and SpA, based on characteristic symptoms. These are evaluated by multidisciplinary teams at the regional coordinating centers. If they fulfill the criteria for referral, patients get an appointment at a cooperating rheumatology specialist within weeks. If a rheumatic disease is diagnosed, physicians and patients receive questionnaires about sociodemographic, physiological and psychological parameters.

In order to increase the quality of referrals, a 15-minute rheumatological consultation at the ACURA Rheumatology Center was implemented for all patients from Rhineland-Palatinate whose suspected diagnosis was confirmed by the coordination centre. In course of this, the Rheuma-VOR Screening-App will also be developed and optimized. The cooperating partners and additional information are already published [5].

Results: Preliminary data (31 Dec 2019) are presented. In Rhineland-Palatinate, Saarland and Lower Saxony, 4942 suspected diagnoses of 1526 different referring physicians have now been reported. A total of 2578 patients were referred by the three coordination centres to one of the 49 participating rheumatological specialists. 1004 patients were diagnosed with one of the three diseases. About 306 patients have already taken the follow-up appointment after one year.

In course of a screening consultation 736 patients have been screened to date. The patients have to wait in average about 42 days from the suspected diagnosis to the rejected or confirmed rheumatological diagnosis.

Conclusion: Although the average waiting time for all three diseases is currently almost twice as long as the 23.9 days in the Rhineland-Palatinate predecessor project ADAPThera which just focuses on RA, the current results are very positive compared to the national average [3]. The aim is to further increase the screening quality and screening numbers, especially in the 1-year follow-up. Current data will be presented at the conference.

References:

- [1] Boehncke WH, Menter A (2013) Burden of disease: psoriasis and psoriatic arthritis. *Am J Clin Dermatol* 14:377-388
- [2] Claudepierre P (2014) Spondyloarthritis: a window of opportunity? *Joint Bone Spine* 81:197-199
- [3] Lauter A, Triantafyllidis K, Leif R et al. (2019) ADAPThera—Statewide cross-sectoral care network for patients with early rheumatoid arthritis shows sustained remission in standard care. *Z Rheumatol*. 78 (7): 660–669
- [4] O'dell JR (2002) Treating rheumatoid arthritis early: a window of opportunity? *Arthritis Rheum* 46:283-285
- [5] Schwarting A (2018) From ADAPThera to Rheuma-VOR: Concept of Coordinated Cooperation to Improve the Quality of Rheumatology Care Akt Rheumatol 43 (05): 406-409

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AB1299-HPR THE RHEUMA-VOR APP: OPTIMIZING THE EARLY DIAGNOSIS OF RHEUMATIC DISEASES

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Background: The proof-of-concept network study "Rheuma-VOR" aims to improve the quality of rheumatological care through coordinated cooperation. In particular, rheumatic diseases should be diagnosed as early as possible and treated quickly in a targeted manner [3]. Smartphone apps have a potential to improve the management of chronic diseases. For example, they can be used to provide health information, or to offer self-monitoring and self-screening options [1, 2].

Objectives: The Rheuma-VOR Screening-App study examines whether a smartphone-based app can increase the detection rate of the three most common chronic inflammatory rheumatic diseases: rheumatoid arthritis, psoriatic arthritis and spondylarthritis.

Methods: Based on the multi-stage Delphi Procedure, a minimal list of questions for detection and differentiation between the three diseases was defined. The app for iOS and Android is in use since October 2018 during the screening consultation at the Division of Rheumatology and Clinical Immunology and at the ACURA Center of Rheumatology Rhineland-Palatinate. An additional validation will be performed with a non-preselected cohort based on the data of the Rheuma Bus Tour 2019.

Results: The Delphi Procedure identified 17 questions, including four laboratory parameters. They have been deployed in German as a smartphone app. The questions are read to the patient and can be answered with "YES", "NO", or "I DO NOT KNOW". Answering the questions takes approximately four minutes. The suspected diagnoses are based on a cumulative score. Some diagnoses are excluded or confirmed already after a few questions.

To date (31 Dec 2019), the app has been used on 466 patients. The sensitivity is 0.91, while the specificity is 0.25. The positive predictive value and the negative predictive values are 0.60 and 0.32, respectively. The false positive value is 0.33 and the false negative value 0.05.

Conclusion: The Rheuma-VOR App helps doctors and patients to invalidate or to confirm the suspicion of a possible rheumatic disease. Data from the cohort is currently analyzed to increase the screen's specificity. The additional validation, based on a non-preselected cohort collected during the Rheuma Bus Tour 2019, is in progress. A final validation concept is currently being developed.

In 2020, a section with the most important information about the aforementioned three diseases will be added. The section will include definition, etiology, prognosis, symptoms, therapeutic principles, medication and case studies.

Current data will be presented at the conference

References:

- [1] Kuijpers W, Groen WG, Aaronson NK et al. (2013) A systematic review of web-based interventions for patient empowerment and physical activity in chronic diseases: relevance for cancer survivors. *Journal of medical Internet research* 15:e37
- [2] Payne HE, Lister C, West JH et al. (2015) Behavioral functionality of mobile apps in health interventions: a systematic review of the literature. *JMIR mHealth and uHealth* 3:e20
- [3] Schwarting A (2018) From ADAPThera to Rheuma-VOR: Concept of Coordinated Cooperation to Improve the Quality of Rheumatology Care Akt Rheumatol 43 (05): 406-409

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AB1300-HPR MALNUTRITION SCREENING AND ASSESSMENT TOOLS IN RHEUMATIC DISEASES

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Background: Inflammatory disorders have been associated with an increased risk of malnutrition, defined as an abnormal physiologic condition caused by an insufficient, unbalanced or excessive intake of nutrients due to exacerbated metabolic states.¹

Mini Nutritional Assessment (MNA) and Nutritional Risk Screening Tool 2002 (NRS-2002) have been used to evaluate nutritional status in patients with rheumatic diseases.

Objectives: Compare MNA and NRS-2002 as tools for nutritional screening in rheumatic patients.

Methods: 152 patients with rheumatic diseases were evaluated in a Rheumatology center of México. Anthropometrical measurements were performed using Bioelectrical Impedance Analysis (BIA) TANITA. MNA and NRS-2002 were applied at the same date.

MNA is comprised of a dietary questionnaire, subjective and objective global assessment and anthropometrical measurements, classified as adequate (MNA 24-30), risk for malnutrition (MNA 17–23.5) and malnutrition (MNA<17).

NRS-2002 consists of nutritional and severity disease score and an age adjustment for patients >70 years (+1); classified as normal (0-3) and risk of malnutrition/established malnutrition (3 or more).

For statistical analysis the SPSS v24 was used. A $p < 0.05$ was considered statistically significant.

Results: A total of 152 patients with different rheumatic diseases were included, Table 1. The results according to each tool are represented in **Graphic 1**. A significant difference was found by the Chi-Square-test when comparing both tools, ($p < 0.004$).

Table 1. Socio-demographic characteristics of rheumatic patients

DISEASES, n (%)	
Rheumatoid Arthritis	70 (46.1)
Systemic Lupus Erythematosus	19 (12.5)
Osteoarthritis	18 (11.8)
Sjögren's Syndrome	5 (3.3)
Fibromyalgia	4 (2.6)
Ankylosing Spondylitis	2 (1.3)
Systemic Sclerosis	6 (3.9)
Others	27 (17.8)
SOCIO-DEMOGRAPHICS	
Age, mean years (SD)	51.98 (13.56)
BMI, mean (SD)	28.14 (5.8)
Brachial Circumference, cm, (SD)	32.57 (4.19)
Calf Circumference, cm, (SD)	37.08 (4.17)

A subanalysis in 70 Rheumatoid Arthritis patients was done with a mean age of 50.94 years (SD±12.11) and a mean BMI 28.53 kg/m² (SD 5.48). The results according to each tool are represented in Table 2. When NRS-2002 was reclassified in 3 parameters (normal <2, risk of malnutrition 2 and malnutrition 3 or more), a significant difference persisted ($p < 0.05$) with a low correlation (.43).