psychosocial health, but it is not clear what components of OA disease severity are related to depression onset in these patients.

Objectives: The aim was to determine the components of OA disease severity that contribute to depression onset among individuals with radiographic knee OA.

Methods: Eligible participants ($n=1,652$) were from the Osteoarthritis Initiative with radiographic disease (Kellgren-Lawrence [K-L] grade 2, 3, or 4), complete baseline covariate data, and were below the screening threshold for probable depression (Centre for Epidemiological Studies Depression [CES-D] Scale ≤ 16). OA disease severity was assessed at baseline and three annual follow-up visits using minimum joint space width (millimetres), 20-metre gait speed (metres per second), and pain subscale of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). OA disease severity predictors were evaluated as a moving average at each time point then categorised in quintiles. Joint space width and gait speed categories were inverted so that increasing quintile corresponded to greater disease severity. Depression onset was assessed at four annual follow-up visits using the CES-D. Potential confounders included time-invariant and time-varying measures: demographics, lifestyle factors, socioeconomic status, Charlson comorbidity index, K-L grade, and WOMAC functional disability and joint stiffness; and CES-D score, body mass index, analgesic use, and knee injuries, respectively. Marginal structural models that account for time-dependent confounding and selective attrition modelled the association between each time-varying disease severity predictor and depression onset.

Results: There was a non-linear probability (figure 1) for onset of depression by disease severity quintiles for the three predictors. Moreover, the risk of depression was greatest in the highest severity quintiles and reached statistical significance for all three predictors. Odd ratios comparing highest to lowest severity quintiles in order of increasing magnitude were 1.80 (95% confidence interval [CI]: 1.00, 3.24) for gait speed, 2.10 (95% CI: 1.17, 3.75) for joint space width, and 2.21 (95% CI: 1.14, 4.30) for pain.

Conclusions: Findings demonstrate that the presence of greater structural disease severity and pain and decreased physical performance increases the risk of depression onset among individuals with radiographic knee OA. Thus, it is necessary to also intervene on OA disease severity when treating depression to effectively manage these patients. A combined treatment strategy consisting of two interventions delivered in parallel to simultaneously treat each condition may be the most effective form of medical care for OA patients who have comorbid depression.

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OP0004 COGNITIVE IMPAIRMENT IN RHEUMATOID ARTHRITIS PATIENTS: A CASE-CONTROL STUDY

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Background: Rheumatoid arthritis (RA) is the most common autoimmune inflammatory arthritis in adults.¹ Extra-articular manifestations of RA can occur in about 40% of patients, either in the beginning or during the course of their disease.² Recent studies have suggested that RA may have an important relation in the

development of cognitive and neurological dysfunction.³ However, the bond between RA and the brain is still uncertain.

Objectives: The purpose of this study was to assess the frequency and the clinical predictors of cognitive impairment in rheumatoid arthritis (RA) patients.

Methods: A cross-sectional and case-control study was performed including consecutive RA patients seen in a rheumatology outpatient clinic of referral tertiary hospital. The control group included 100 healthy subjects. We registered clinical and demographic data including age, sex, level of education, time of disease, time of diagnosis, drugs in use, cardiovascular risk factors and other comorbidities. Functional capacity was assessed using the Health Assessment Questionnaire (HAQ). Neurological appraisal was made with standardised questionnaires: Mini-Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA) and the Hospital Anxiety and Depression (HAD). Analysis of the data was performed using chi-square and t-tests and a multivariate analysis (SPSS 22.0). Significance level was set as <0.05 .

Results: We included 102 patients (88 were female) with a mean age of 57.4 (± 10.7) years; among these patients, 92 (90.2%) used corticosteroids, 66 (64.7%) methotrexate, 5 (4.9%) sulfasalazine, 43 (42.1%) leflunomide, 18 (17.6%) chloroquine and 25 (24.5%) biologic therapy. The mean age of RA diagnosis was 42.9 (± 12.7) years. In both univariate and multivariate analysis, compared to the control group, patients with RA presented significant lower MMSE (22.5 ± 4.0) and MoCA (17.1 ± 4.5) scores ($p < 0.05$). Adjusting for level of education, just 31 and 25 patients presented normal MMSE and MoCA scores ($p < 0.01$), respectively. Cognitive decline was associated with higher HAQ scores (functional outcome due to RA) and prolonged time of disease ($p < 0.05$). No correlation was found between sex, disease-modifying antirheumatic drugs, rheumatoid factor, C-reactive protein levels and the neurological impairment. The mean HAD score was 17.2 (± 8.2) and anxiety and depression were more prevalent in RA patients than in control group ($p < 0.01$).

Conclusions: Patients with rheumatoid arthritis may present with cognitive decline and dementia as extra-articular manifestations of the disease. Neurological impairment is usually disregarded and might be under-diagnosed in RA patients. Future studies are necessary in order to better understand the relationship between RA and the Brain.

REFERENCES:

- [1] Helmick CG, Felson DT, Lawrence RC, Gabriel S, Hirsch R, Kwoh CK, et al. Estimates of the prevalence of arthritis and other rheumatic conditions in the United States: part I. *Arthritis Rheum* 2008;58:15–25.
- [2] Pincus T, Callahan LF, Sale WG, Brooks AL, Payne LE, Vaughn WK. Severe functional declines, work disability, and increased mortality in seventy-five rheumatoid arthritis patients studied over nine years. *Arthritis Rheum* 1984;27:864–72.
- [3] Gimeno D, Marmot MG, Singh-Manoux A. Inflammatory markers and cognitive function in middle-aged adults: The Whitehall II study. *Psychoneuroendocrinology* 2008;33:1322–34.

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Shaping the future in systemic sclerosis

OP0005 PATTERNS OF 31 NEW AUTOANTIBODIES AGAINST G PROTEIN-COUPLED RECEPTORS AND GROWTH FACTORS IN SYSTEMIC SCLEROSIS CAN BE DESCRIBED BY LATENT FACTORS

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Background: Systemic sclerosis (SSc) is a rare autoimmune multisystemic disease with a significant disease burden and impact on life quality and survival. Disease specific, diagnostic and prognostic antibodies (ab) are known such as Scl70 and centromere (ACA) ab¹ or recently endothelin or angiotensin receptors.² Functional ab can bind G protein-coupled receptors (GPCR) regulating immune function and were reported in the pathogenesis of various inflammatory and non-inflammatory diseases.³

Objectives: We analysed 31 ab against GPCRs and growth factors in a retrospective cohort of 71 SSc patients compared to 196 sera from healthy controls (HC). Ab levels were related to disease manifestations such as sex, age, SSc phenotype in order to hypothesise functional ab and new pathogenic targets in SSc.