POS0581

PERIODONTAL DISEASE IN RHEUMATOID ARTHRITIS: RESULTS FROM A COHORT AT TREATMENT WITH BIOLOGICAL, CLASSICAL AND TARGETED SYNTHETIC DMARDS

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Background: Periodontal disease (PD) has been widely studied in the pathogenesis of rheumatoid arthritis (RA). As well, its relationship with severity and disease activity, has also been investigated with ambiguous results. It has been suggested that the improvement of oral health could enhance disease activity scores.¹ PD prevalence worldwide stands around 60% in older adults (>65 years) and its frequency increases with aging.²

Objectives: To assess oral health in RA patients and to identify predictors of PD in this population.

Methods: Patients diagnosed of RA at treatment with biological, classical or targeted synthetic disease modifying anti-rheumatic drugs (b/cs/tsDMARDs) in the aforementioned hospital during 2020 performed a dental review with a specialized periodontal odontologist. Oral health patterns were given for all patients, following criteria of American Academy of Periodontology, and reevaluation of disease activity was made 2 months later.

Clinical, demographic and treatment data were collected from participants. Univariable logistic regression was performed to identify predictors of PD. Variables with $p < 0.20$ were selected for multivariable analysis.

Stata 15.1 was used to perform statistical analysis.

Results: 81 patients were recruited. 82.72% were female. Mean age was 56.17 years (SD 14.15) and mean time since diagnosis was 15.58 years (SD 8.17). 25% were current or past smokers. 21 patients had comorbidities (arterial hypertension the most frequent). 66.67% were rheumatoid factor (RF) positive and 72.73% anti-citrullinated peptide autoantibody (ACPA) positive. Median erythrocyte sedimentation rate (ESR) was 12 mm (IQR 6;23) and mean C-reactive protein (CRP) was 0.48 mg/dl (SD 1.18). Mean disease activity score (DAS28-VSG) at the testing time was 2.62 (SD 1.21) and after 2 months was 2.39 (SD 0.97). 96.30% of patients were at treatment with csDMARDs, 64.20% with glucocorticoids, 96.30% with bDMARDs and 6 patients with tsDMARDs.

Univariable analysis identified higher age, at least one autoantibody positive and ESR/CRP as potential predictors of medium/severe PD ($p < 0.20$). Multivariable testing including these variables pointed out higher age, lower ESR and at least one autoantibody positive (OR 1.09 [CI95% 1.04-1.14] $p = 0.001$, OR 0.18 [CI95% 0.04-0.95] $p = 0.044$ and OR 0.94 [CI95% 0.88-1.00] $p = 0.042$, respectively) as predictors of medium or severe PD (≥ 3 mm interdental clinical attachment loss). Univariable analysis identified higher age, the presence of any comorbidity and anti tumour-necrosis factor alpha treatment (anti-TNF) as potential predictors of severe PD ($p < 0.20$). Multivariable testing including these variables pointed out higher age (OR 1.15 [CI95% 1.02-1.30] $p = 0.026$) as predictor of severe PD (≥ 5 mm interdental clinical attachment loss).

Conclusion: Periodontal disease is still an extended health problem among the entire population. Its prevalence in RA is increased, therefore higher age and RF or ACPA positive are risk factors for developing severe PD. This analysis might suggest that an aggressive management of PD could implement better responses in DAS28. Also anti-TNF treatment could delimit a "penumbra" group of patients at risk of developing severe PD, where intensive manage could modify the final outcome.

REFERENCES:

- [1] C O Bingham, M Moni. Periodontal disease and rheumatoid arthritis: the evidence accumulates for complex pathobiologic interactions. *Curr Opin Rheumatol.* 2013;25(3):345-353.
- [2] P Carvajal. Periodontal disease as a public health problem: the challenge for primary health care. *Rev Clin Periodontol.* 2016;9(2):177-183.

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POS0582

RHEUMATOID ARTHRITIS AND ORAL MICROBIOME: PREDICTORS OF DISTURBANCES AND ITS IMPLICATIONS. RESULTS FROM A COHORT AT TREATMENT WITH cs/b/tsDMARD

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Background: Oral microbiome (OM) seems to be significant in the pathogenesis of some immune-mediated diseases, such as rheumatoid arthritis (RA), psoriasis or inflammatory bowel disease.¹ Some microorganisms, as *Porphyromonas gingivalis* have been related with the production of autoantibodies. Also it has been suggested that composition of OM could change RA disease course, being more difficult-to-treat and having higher disease activity scores.²

Objectives: To identify which variables could predict the appearance of altered OM and its implications in clinical practice.

Methods: Patients were recruited if they were diagnosed of RA and were at active treatment (biological, classical or targeted synthetic disease modifying anti-rheumatic drugs [b/cs/tsDMARDs]). Patients performed a dental review with a specialized odontologist that made an OM test (semiquantitative PCR), and oral health standards were instructed (following criteria of American Academy of Periodontology). Recruitment was made during 2020 in the Clinical University Hospital in Santiago de Compostela, Spain. Disease activity reevaluation was made 2 months later.

Treatment, demographic and clinical data were collected from participants.

Univariable logistic and linear regression were performed to identify predictors of OM. Variables with $p < 0.20$ were selected for multivariable analysis.

Stata 15.1 was used to perform statistical analysis.

Results: 47 patients were selected of whom 40 were female. Mean age was 55.43 years (SD 14.42). 30.77% were current or ex-smokers. Mean time since RA diagnosis was 14.89 years (SD 8.47). 63.83% were anti-citrullinated peptide autoantibody (ACPA) positive and 70.21% were rheumatoid factor (RF) positive, letting only 6 patients double negative. 46.81% had moderate/severe periodontal disease (PD). 32.61% of patients had any comorbidity. Mean DAS28 at the OM test was 2.67 (SD 1.28) and after 2 months 2.37 (SD 1.03). Mean C-reactive protein (CRP) was 0.64 mg/dl (SD 1.48) and median erythrocyte sedimentation rate (ESR) was 13 mm (IQR 7;27). All patients were under glucocorticoid treatment, 46 with bDMARD, 1 with tsDMARD and 46 with csDMARD. *Treponema denticola* was detected in 44.68% of patients, *P. gingivalis* in 29.79%, *Actinomyces* spp in 8.51%, *Tanarella forsythia* in 36.17% and *Prevotella intermedia* in 25.53%. Only 15 patients were full-negative for OM test.

Univariable analysis identified RF positive, double autoantibody positive (RF and ACPA) and moderate/severe PD as potential predictors of the presence of at least one oral microorganism ($p < 0.20$). Multivariable testing pointed out moderate/severe PD as predictor of the presence of at least one oral microorganism (OR 22.91 [CI95% 2.38-220.4] $p = 0.007$).

Univariable analysis identified higher age, presence of any comorbidity, RF positive, higher CRP, treatment with anti-tumour necrosis alpha (aTNF) and moderate/severe PD as potential predictors of the presence of multiple species in OM ($p < 0.20$). Multivariable testing pointed out moderate/severe PD as predictor of the presence of multiple species in OM (B 0.39 [95%CI 0.19-0.58] $p = 0.000$).

Conclusion: Oral microbiome is closely related with periodontal disease, added to our results, a relationship between OM and disease activity has been exposed. In this analysis the role of OM and autoantibody profile is manifest, as being double positive or RF positive is associated with the presence of altered OM. Also patients with high acute-phase reactants, active disease and under aTNF treatment could delineate a specific RA population under risk of altered OM, where intensive strategies for changing oral microbiome could have any repercussion in the disease course.

REFERENCES:

- [1] Chen, B., Zhao, Y., Li, S. *et al.* Variations in oral microbiome profiles in rheumatoid arthritis and osteoarthritis with potential biomarkers for arthritis screening. *Sci Rep* 8, 17126 (2018).
- [2] R Bodkhe, B Balakrishnan, V Taneja. The role of microbiome in rheumatoid arthritis treatment. *Ther Adv Musculoskelet Dis.* 2019;11:1759720.

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POS0583

ENGINEERED GLOVE TO EVALUATE THE SPEED OF THE HANDS' MOVEMENTS IN RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is a long-term, progressive, and disabling autoimmune disease¹. The disease activity can be quantified by the Disease Activity Score 28-joint count – C reactive protein (DAS28crp)²; the evaluation of disability function (DF) is actually mainly performed only by subjective Patient Reported Outcomes (PROs) like Health Assessment Questionnaire (HAQ)³; to investigate the functional aspects of RA hands it is usually used the grip strength (GS)⁴. However, in the scientific literature no tool, which objectively evaluates movement speed, has been reported. The Hand Test System (HTS, ETT) is an engineered glove (RAGLOVE), nowadays applied for neuroscience studies to evaluate hand motility⁵