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AB0713

PERIODONTAL DISEASES AND ITS ASSOCIATION WITH ANKYLOSING SPONDYLITIS/SPA: A SYSTEMATIC REVIEW

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Background: A close association between periodontal disease and Ankylosing spondylitis (AS) has long been speculated. Both diseases are characterized by dysregulation of the host inflammatory response, leading to further destruction of soft and hard connective tissue with there being evidence of increased levels of TNF- α and various interleukins in both patients of AS and periodontitis.

Objectives: The aim of this systematic review was to appraise the available literature exploring the relationship between AS and periodontal disease.

Methods: We searched Medline & Embase databases (from their inception till October 2019) using appropriate combinations of following search items with limits '(English, Human)'; Ankylosing spondylitis, spondyloarthritis, spondyloarthropathies, spondyloarthritis, spinal disease, musculoskeletal disease, Rheumatic disease AND periodontitis, periodontal disease, periodontoses, parodontoses, chronic periodontitis, gum disease, gingivitis, oral health, dental health, plaque index, bleeding on probing, probing pocket depth, clinical attachment loss. This search was supplemented by the manual search of bibliographies of articles selected and conferences proceedings of EULAR. Only be reviews, observational study of cross-sectional, cohort or case control type on adult patients with AS were selected. Data was extracted from a predesigned proforma. A close association between periodontal disease and Ankylosing spondylitis (AS) has long been speculated. Both diseases are characterized by dysregulation of the host inflammatory response, leading to further destruction of soft and hard connective tissue with there being evidence of increased levels of TNF- α and various interleukins in both patients of AS and periodontitis.

Results: A total number of 984 articles were identified and 12 were selected for detailed appraisal (Figure 1, PRISMA flow chart). They were all case control studies. The prevalence of periodontitis ranged from 38% to 88% in patients with AS whereas in the control group from 26% to 71 % in controls. Out of 12 studies, two showed significant changes in Plaque Index (PI), two studies showed altered Pocket Probing Depth (PPD), three showed significant increased in Clinical Attachment Loss (CAL) and increased Bleeding On Probing (BOP) was seen in 2 studies. In 7 studies, periodontitis was seen in a significant number of patients with AS ($P < 0.05$). All studies reported that the prevalence of periodontal disease in AS patients was higher as compared to non-AS patients.

Conclusion: Our systematic review found an association between AS and periodontal disease. Patients with AS show higher prevalence of periodontitis and a poor oral hygiene as compared to healthy controls. At practice level, this systematic review underscores the need for a collaboration between dentists and rheumatologist.

PRISMA 2009 Flow Diagram

Disclosure of Interests: None declared

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AB0714

THE ROLE OF AGE, DURATION OF THE DISEASE AND CUMULATIVE GLUCOCORTICOID DOSE IN THE FORMATION OF DISORDERS OF THE STRUCTURAL AND FUNCTIONAL STATE OF BONE TISSUE IN MEN WITH ANKYLOSING SPONDYLITIS

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Background: In recent years, it is becoming increasingly clear that osteoporosis (OP) holds the important place among complications of ankylosing spondylitis (AS). The frequency of emergence of OP, according to the data of last investigations, ranges from 18.7 to 62%, osteopenic syndrome – from 50 to 92%. It is known that decrease of bone mineral density (BMD) in patients with AS is caused not only by the action of traditional risk factors (age, sex, genetic predisposition, low body mass, and others) but also by the action of factors associated with the disease itself such as: duration of AS, activity of the inflammatory process, administration of glucocorticoids (GC), deficiency of Vitamin D, low physical activity of patients and so on. However, until now there are no clear data about the role of each of them in the formation of disorders of bone metabolism in men with AS. In the Ukrainian population of patients with AS such investigations have not been conducted.

Objectives: To investigate the role of age, duration of disease and cumulative glucocorticoid dose in the formation of disorders of bone mineral density (BMD) in men with AS.

Methods: The investigation of 108 men with AS at the age of 40.74 ± 0.87 years and 25 normal control subjects of the same age and sex has been carried out. The diagnosis of AS was established on the basis of modified New York criteria. BMD of the lumbar spine and femoral neck was determined by dual-energy X-ray absorptiometry on the apparatus 'Hologic Discovery Wi' (S / N 87227). The diagnosis of osteoporosis in men over 50 years was considered in case of decrease of BMD by T-score ≤ -2.5 SD, osteopenia corresponded to T-score from -1 to -2.5 SD, for men under the age of 50, the Z-score was used, and its decrease ≤ -2.0 SD and more indicated the significant loss of bone mass.

Results: A decrease of BMD at the level of the lumbar spine and femur neck was found in 61 (56.5%) patients, of these 29 (27.7%) had osteoporosis, 31 (29.5%) had osteopenia. In the control group, decrease of BMD was detected in 6 (24%) patients, of these osteoporosis was diagnosed in 1 (4%), and osteopenia was diagnosed in 5 (20%) patients. In the age group of below 35 years, 18 (64.3%) patients had a decrease in BMD, 35 (56.5%) patients – in the 36-55 age group, and 8 (53.3%) patients – over the age of 45. The index of BMD also did not differ significantly between the groups. As for the duration of the disease, the

largest proportion of 33 (75%) patients with decreased BMD was found in the group of patients with duration of the disease from 5 to 10 years. In the group of patients with duration of the disease up to 5 years, patients with decrease in the Z-score were 11 (55%), and in the group with duration of the disease more than 10 years - 17 (41.6%) patients. Decrease of BMD was associated with *cumulative glucocorticoid dose*. In particular, in the group of patients with a *cumulative* dose of glucocorticoids less than 12.6g Z-score at the level of the lumbar spine was -0.98 ± 0.17 SD, in the group with a *cumulative* dose of GC 12.6-21.6g Z-score was equal to -0.43 ± 0.40 SD, and in the group with *cumulative* glucocorticoid dose - above 21.6g the Z-score was -1.69 ± 0.30 SD. As the glucocorticoid dose increased, the proportion of patients with decreased BMD increased. In the group of patients with the highest dose of GC there were 67.7% such patients, while in the group with the lowest dose - only 30 (57.6%). Significant correlation ($r = -0.24$) was established between Z-score of the lumbar spine and the total dose of GC.

Conclusion: In 61 (56.5%) patients with AS decreased BMD at the level of the lumbar spine and neck of the femur is revealed. Decrease of BMD in patients with AS does not depend on the age and duration of the disease, but is associated with the *cumulative* dose of GC.

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AB0715

POSSIBLE METHODS OF EARLY DIAGNOSIS OF RENAL ALTERATION IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: kidney damage is one of the extraarticular manifestations and complications of ankylosing spondylitis (AS). Due to some disadvantages of traditional renal function parameters, the search for new markers is actively conducted [1].

Objectives: to evaluate urinary excretion of liver type of fatty acid binding protein (L-FABP), which is expressed in cells of proximal tubules, heart type of fatty acid binding protein (H-FABP), which is expressed in cells of distal tubules [2], and trefoil factor-3 (TFF-3), which is expressed in cells of the proximal and distal tubules and collecting duct [3], in patients with AS.

Methods: urine samples of 50 patients (37 males, 13 females) were evaluated. Patient inclusion criteria were a diagnosis of AS according to the New York modified criteria (1984) and ASAS 2009 (The Assessment of SpondyloArthritis international Society, 2009) for axial spondyloarthritis and age 18 and over. Median age of patients was 39 [34;56] years, duration of joint syndrome - 10 [7;18] years, glomerular filtration rate (GFR) - 105 [83;119] ml/min/1.73 m². Patients received nonsteroidal anti-inflammatory drugs (NSAIDs), and tumor necrosis factor alpha inhibitors (TNFα inhibitors). L-FABP, H-FABP, TFF-3 levels were measured by enzyme-linked immunosorbent assay. Urinary excretion was expressed as nanograms per milliliter of urinary creatinine. The results were compared with the results of the control group.

Results: the values of L-FABP in patients with AS without chronic kidney disease (CKD) exceeded the values in the control group: 0.05 [0.01;0.09] ng/mmol creatinine compared to 0.03 [0.00;0.06] ng/mmol, ($p=0.04$). L-FABP was detected in only 6 patients, all of them were with CKD. Its level was up to 601.50 ng/mmol. H-FABP level was undetectable in the control group. The level of TFF-3 in patients without CKD was higher than in the control group: 53.42 [20.84;105.71] and 23.31 [1.97;62.90] ng/mmol respectively, ($p=0.02$). A correlation with disease activity (BASDAI and ASDAS) was found for TFF-3 ($r_s=0.33$, $p<0.05$). This marker in patients receiving NSAIDs is higher compared with TNFα inhibitors: 89.51 [39.82;118.91] and 32.61 [13.51;88.23] ng/mmol respectively, ($p=0.04$). L-FABP and TFF-3 correlated with each other ($r_s=0.6$, $p<0.05$). The level of FABPs and TFF-3 did not depend on sex, age, GFR and AS duration.

Conclusion: L-FABP and TFF-3 may be of interest for diagnosis pre-clinical renal alteration, including those associated with the NSAIDs toxicity, in patients with AS. L-FABP and H-FABP may be useful in determining stages and levels of tubular injury

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AB0716

SEX DIFFERENCES IN CLINICAL PHENOTYPE AND RADIOGRAPHIC DISEASE PROGRESSION IN AXIAL SPONDYLOARTHRITIS: RESULTS FROM THE GERMAN SPONDYLOARTHRITIS INCEPTION COHORT

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Background: It is presumed that the phenotype of the axial spondyloarthritis (axSpA) may differ in females and males; the published data are controversial.

Objectives: To explore the sex differences in disease features and radiographic progression in axSpA.

Methods: A total of 210 patients with axSpA (115 with radiographic and 95 with non-radiographic axSpA) were selected for analysis. Spinal radiographs were scored by two readers in a random order according to the modified Stoke Ankylosing Spondylitis Spinal Score (mSASSS). Pelvic radiographs were scored according to the grading system of the modified New York criteria; a sacroiliitis sum score was calculated as a sum of the grades for both sacroiliac joints. Mann-Whitney and Fisher exact tests were performed for group comparisons. A multivariable regression analysis was performed to analyze the influence of gender on radiographic progression.

Results: Males ($n=107$; 51%) were significantly younger at disease onset (34.8 ± 10.3 vs. 31.5 ± 11.2 years, $p=0.008$) and at diagnosis (37.5 ± 10.2 vs. 34.1 ± 11.2 years, $p=0.006$); symptom duration at baseline was similar (4.1 ± 2.6 vs. 4.3 ± 2.8 years, $p=0.66$). Females were less often HLA-B27 positive (74 (72.5%) vs. 92 (86.0%), $p=0.02$), had higher baseline disease activity (BASDAI 4.3 ± 2.2 vs. 3.7 ± 2.0 ; $p=0.05$), but lower baseline C-reactive protein level (7.1 ± 10.9 vs. 12.3 ± 18.2 mg/l, $p=0.08$), and similar time-averaged ASDAS (2.5 ± 0.8 vs. 2.4 ± 1.0 ; $p=0.385$). Males more frequently had definite radiographic sacroiliitis (70.1% vs. 38.8%; $p<0.001$), higher sacroiliitis sum score (4.9 ± 1.9 vs. 3.2 ± 1.8 , $p<0.001$), and higher mean mSASSS (6.1 ± 10.7 vs. 2.4 ± 4.0 ; $p=0.100$) at baseline. Other variables were comparable between the groups. There was a trend for a higher radiographic progression in males in all explored outcomes, statistically significant only for the formation/progression of syndesmophytes (23 (21.5%) vs. 10 (9.7%), $p=0.023$), with no differences in the radiographic progression of sacroiliitis. In a multivariate logistic regression analysis, similar odds for spinal radiographic progression, new syndesmophyte formation and radiographic progression of sacroiliitis by ≥ 1 grade were seen - **Table 1**.

Conclusion: There was a trend for male patients to have more radiographic damage at the baseline and more progression after two years, as reflected by the percentage of patients with new syndesmophytes.

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Table 1. Association of sex with radiographic progression in spine and sacroiliac joints after 2 years of follow-up.

Parameter, n (%) or mean±SD	Female (n=103)	Male (n=107)	P
Spinal radiographic progression			
mSASSS change	0.46 ± 1.63	1.00 ± 2.85	0.25
Progression of mSASSS by ≥ 2 points	10 (9.7)	20 (18.7)	0.08
New syndesmophytes or progression of syndesmophytes	10 (9.7)	23 (21.5)	0.02
Progression of radiographic sacroiliitis			
Change of the sacroiliitis sum score	0.14 ± 0.94	0.13 ± 0.73	0.58
Progression of sacroiliitis by at least 1 grade in opinion of both readers	17 (16.5)	9 (8.4)	0.09

mSASSS - modified Stoke Ankylosing Spondylitis Spine Score;

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