association between periodontal disease and ankylosing spondylitis are still relatively limited.

Objectives: The current systematic review and meta-analysis was conducted with the aims to identify all published studies that investigated the risk of ankylosing spondylitis among patients with periodontal disease versus individuals without periodontal disease and summarize their results together to better characterize this relationship.

Methods: Two investigators independently searched for published studies indexed in MEDLINE and EMBASE database from inception to October 2018 using the search strategy that included the terms for periodontal disease and ankylosing spondylitis. The inclusion criteria are as follows: (1) Case-control or cohort studies that compared the risk of ankylosing spondylitis between patients with periodontal disease versus individuals without periodontal disease (2) Individuals without periodontal disease were used as comparators in cohort studies while individuals without ankylosing spondylitis were used as controls in case-control studies and (3) Effect estimates and 95% confidence intervals (CI) of the association of interest were reported. Point estimates and standard errors from each study were extracted and combined together using the random effect, generic inverse variance technique of DerSimonian and Laird.

Results: Of 554 retrieved articles, a total of 7 case-control studies with 41,575 participants met the eligibility criteria and were included into the meta-analysis. The risk of ankylosing spondylitis among patients with periodontal disease was significantly higher than individuals without periodontal disease with the pooled odds ratio of 2.16 (95% CI, 1.48–3.16). The statistical heterogeneity was low with an I^2 of 45%. The forest plot of this meta-analysis is shown as figure 1. Funnel plot was created for evaluation of publication bias. The plot was relatively symmetric which did not suggest the presence of publication bias in favor of studies with positive results.

Conclusion: A significantly increased risk of ankylosing spondylitis among patients with periodontal disease was demonstrated in this study. This observation may provide more understanding of the pathogenesis of this chronic inflammatory arthritis.

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Figure 1. Forest plot of the meta-analysis on the association between periodontal disease and risk of ankylosing spondylitis

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.540

AB0733

AN EYE FOR THE HEART: ARE RETINAL VASCULAR PARAMETERS ASSOCIATED WITH CARDIOVASCULAR DISEASE IN ANKYLOSING SPONDYLITIS?

Rianne van Bentum¹, Milad Baniaamam², Buket Kinaci³, Aleid van de Kreeke³, Merve Kocyigit¹, Erik Serné⁴, Michael Nurmohamed^{1,2}, Frank Verbraak³, Irene van der Horst-Bruinsma¹. ¹Amsterdam Rheumatology and immunology Center, location Amsterdam University Medical Center, VUmc., Amsterdam, Netherlands; ²Amsterdam Rheumatology and immunology Center, location Reade, Amsterdam, Netherlands; ³Amsterdam University Medical Center, location VUmc, Ophthalmology, Amsterdam, Netherlands; ⁴Amsterdam University Medical Center, location VUmc, Internal medicine, Amsterdam, Netherlands

Background: Chronic systemic inflammation in patients with ankylosing spondylitis (AS) contributes to the development of cardiovascular disease (CVD). Microvascular changes are thought to precede clinically overt CVD and its early recognition could improve timely treatment. The microvasculature of the retina and fingertips are easily accessible for non-invasive visualization. Furthermore, previous studies have shown an association between CVD and respectively retinal morphology and digital microvascular function (fingertips), in patients without rheumatic diseases. The retinal

and digital vasculature could provide a unique opportunity to recognize early signs of CVD in AS patients.

Objectives: To investigate whether retinal vascular parameters and digital microvascular function in AS patients are associated with the 10 year CVD risk.

Methods: Cross-sectional study in AS patients (diagnosis according to modified New York criteria) between 50-75 years without a history of diabetes mellitus or cerebrovascular disease. Consecutive patients were recruited consecutively from the Rheumatology outpatient clinic of the Amsterdam UMC, location VUmc and Reade. Patient characteristics, CVD (risk factors), disease duration/activity (ASDAS), C-reactive protein and lipid profile were assessed. The digital microvascular function (the reactive hyperemia index, RHI) was tested through endo Peripharm Arterial Tone measurement at the finger tips (EndoPAT). Retinal vascular parameters were assessed through fundus photography, and identified with Singapore I Vessel Assessment (SIVA) software: central retinal artery and vein equivalent (CRAE, CRVE), arteriovenous ratio (AVR), curvature tortuosity arterioles and venules (cTORTa, cTORTv), fractal dimension of arteries and venules (FrDiA, FrDiV). SIVA parameters were reported as continuous values. The Framingham risk score (FRS) was calculated and classified based on the 10 years CVD risk (low risk <10%, intermediate risk 10-20%, high risk >20%). Linear regression analyses were used to determine the association between the FRS categories and retinal parameters or digital microvascular function (RHI), correcting for age and disease duration.

Results: Fifty-three AS patients were included (age 60±6 years, 55% female, 74% HLA-B27 positive, disease duration 35 years ±13, ASDAS 2.3±1.0). Fifty-five% was currently treated with NSAIDs and 47% with a TNF inhibitor. Based on the FRS, 36% had a high risk of CVD in the next 10 years, 42% an intermediate and 12% a low risk. In multivariable analyses, patients with an intermediate and high risk of CVD (FRS) had a significantly lower diameter of the central retinal artery (CRAE; $p < 0.01$ for both risk groups) and arteriovenous ratio (AVR; only for high risk; $p = 0.03$) as compared with patients with a low risk. There was no association between the RHI and the cardiovascular risk.

Conclusion: This study suggests an association between the 10 years CVD risk and the morphology of the retinal arterial vessels in older AS patients (≥50 years). This is in accordance with some other studies reporting on atherosclerosis in the general population. No association was found between CVD risk and microvascular function in the fingertips. In conclusion, the measurement of retinal vascular parameters might be a new technique to detect early stages of atherosclerosis in AS.

Disclosure of Interests: Rianne van Bentum: None declared, Milad Baniaamam: None declared, Buket Kinaci: None declared, Aleid van de Kreeke: None declared, Merve Kocyigit: None declared, Erik Serné: None declared, Michael Nurmohamed: Grant/research support from: AbbVie, Bristol-Myers Squibb, Celgene, Eli Lilly, Janssen, Menarini, MSD, Mundipharma, Pfizer, Roche, Sanofi and UCB, Consultant for: AbbVie, Bristol-Myers Squibb, Celgene, Eli Lilly, Janssen, Menarini, MSD, Mundipharma, Pfizer, Roche, Sanofi and UCB, Speakers bureau: AbbVie, Bristol-Myers Squibb, Celgene, Eli Lilly, Janssen, Menarini, MSD, Mundipharma, Pfizer, Roche, Sanofi and UCB, Frank Verbraak: None declared, Irene van der Horst-Bruinsma: Grant/research support from: MSD, Pfizer, AbbVie, Consultant for: AbbVie, UCB, MSD, Novartis, Speakers bureau: BMS, AbbVie, Pfizer, MSD

DOI: 10.1136/annrheumdis-2019-eular.852

AB0734

CHANGES IN HEIGHT AND BODY MASS INDEX OVER TIME IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS, TREATED WITH TUMOR NECROSIS FACTOR-A INHIBITORS

Elizaveta Vasilenko¹, Olga Nikolaeva¹, Anna Dadalova¹, Ekaterina Gaydukova², V Mazurov¹, Inna Gaydukova¹. ¹North-Western State Medical University named after I.I. Mechnikov, Department of Therapy, Rheumatology, Examination of Temporary Disability and Quality of Medical Care named after E.E. Eichwald, St. Petersburg, Russian Federation; ²ITMO University, St. Petersburg, Russian Federation

Background: Monitoring of height and body mass index (BMI) is an important for patients with axial spondyloarthritis (axSpA). Reduction of height not only reflects spine remodeling, but affects various indexes, such as BMI (fig.1). However, BMI calculations assume that the adult patient's height is a constant. Therefore these calculations may be inaccurate in patients whose height is susceptible to decrease.