

**Annual European Congress of Rheumatology
(EULAR 2018)**

Amsterdam, The Netherlands, 13-16 June 2018

**GUM DISEASE MAY BE A KEY INITIATOR OF RHEUMATOID ARTHRITIS
RELATED AUTOIMMUNITY**

Significantly higher prevalence of gum disease found in individuals at risk of rheumatoid arthritis compared to healthy controls

Amsterdam, The Netherlands, 15 June 2018: The results of a study presented at the Annual European Congress of Rheumatology (EULAR 2018) demonstrates increased levels of gum disease, and disease-causing bacteria, in individuals at risk of rheumatoid arthritis (RA).¹

“It has been shown that RA-associated antibodies, such as anti-citrullinated protein antibodies, are present well before any evidence of joint disease. This suggests they originate from a site outside of the joints,” said Dr Kulveer Mankia of Leeds Institute of Rheumatic and Musculoskeletal Medicine and the Leeds Biomedical Research Centre (study author). “Our study is the first to describe clinical periodontal disease and the relative abundance of periodontal bacteria in these at-risk individuals. Our results support the hypothesis that local inflammation at mucosal surfaces, such as the gums in this case, may provide the primary trigger for the systemic autoimmunity seen in RA.”

Rheumatoid arthritis is a chronic inflammatory disease that affects a person’s joints, causing pain and disability. It can also affect internal organs. Rheumatoid arthritis is more common in older people, but there is also a high prevalence in young adults, adolescents and even children, and it affects women more frequently than men.

The prevalence of gum disease is increased in patients with RA and could be a key initiator of RA-related autoimmunity. This is because autoimmunity in RA is characterised by an antibody response to citrullinated proteins and the oral bacterium *Porphyromonas gingivalis* (*Pg*) is the only human pathogen known to express an enzyme that can generate citrullinated proteins.²

“We welcome these data in presenting concepts that may enhance clinical understanding of the key initiators of rheumatoid arthritis,” said Professor Robert Landewé, Chairperson of the Scientific Programme Committee, EULAR. “This is an essential step towards the ultimate goal of disease prevention.”

In results from the study, dentists diagnosed clinical gum disease in significantly more at-risk individuals than in healthy controls (73% vs. 38%, $p=0.02$). In addition, the percentage of sites with clinical attachment level (CAL) ≥ 2 mm, pocket depth (PD) ≥ 4 mm, bleeding on probing (BOP), periodontal disease (PDD), and active periodontal disease (PDD+BOP), were all significantly greater in the at-risk individuals compared to controls ($p<0.05$). In non-smokers, PDD and active PDD were more prevalent in at-risk individuals compared to controls.¹

DNA was isolated from the subgingival plaque, next to the gums, of each participant and used to measure the levels of three types of bacteria, *Pg*, *Aggregatibacter actinomycetemcomitans* (*Aa*) and *Filifactor Alocis*. Results showed that there was increased abundance of both *Pg* and *Aa* in at-risk individuals. However, in at-risk individuals, only *Pg* was significantly increased at healthy dental sites and was associated with the overall extent of gum disease ($p < 0.001$).¹

The study included 48 at-risk individuals (positive test for anti-citrullinated protein antibodies, musculoskeletal symptoms but no clinical synovitis), 26 patients with RA and 32 healthy controls. The three groups were balanced for age, gender and smoking. At-risk individuals underwent ultrasound assessment to assess for subclinical synovitis; only two (4%) were found to have ultrasound synovitis. Dentists examined six sites per tooth in each participant and a clinical consensus was agreed in each by three dentists.¹

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NOTES TO EDITORS

For further information on this study, or to request an interview with the study lead, please do not hesitate to contact the EULAR Press Office:

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About Rheumatic and Musculoskeletal Diseases

Rheumatic and musculoskeletal diseases (RMDs) are a diverse group of diseases that commonly affect the joints but can affect any organ of the body. There are more than 200 different RMDs, affecting both children and adults. They are usually caused by problems of the immune system, inflammation, infections or gradual deterioration of joints, muscle and bones. Many of these diseases are long term and worsen over time. They are typically painful and limit function. In severe cases, RMDs can result in significant disability, having a major impact on both quality of life and life expectancy.³

About 'Don't Delay, Connect Today!'

'Don't Delay, Connect Today!' is a EULAR initiative that unites the voices of its three pillars, patient (PARE) organisations, scientific member societies and health professional associations - as well as its international network - with the goal of highlighting the importance of early diagnosis and access to treatment. In the European Union alone, over 120 million people are currently living with a rheumatic disease (RMD), with many cases undetected.⁴ The 'Don't Delay, Connect Today!' campaign aims to highlight that early diagnosis of RMDs and access to treatment can prevent further damage, and also reduce the burden on individual life and society as a whole.

About EULAR

The European League against Rheumatism (EULAR) is the European umbrella organisation representing scientific societies, health professional associations and organisations for people with RMDs. EULAR aims to reduce the burden of RMDs on individuals and society and to improve the treatment, prevention and rehabilitation of RMDs. To this end, EULAR fosters excellence in education and research in the field of rheumatology. It promotes the translation of research advances into daily care and fights for the recognition of the needs of people with RMDs by the EU institutions through advocacy action.

To find out more about the activities of EULAR, visit: www.eular.org.

References

¹ Mankia K, Cheng Z, Do T, *et al.* An increased prevalence of periodontal disease, *Porphyromonas gingivalis* and *Aggregatibacter actinomycetemcomitans* in anti-CCP positive individuals at-risk of inflammatory arthritis. EULAR 2018; Amsterdam: Abstract OP0352.

² Potempa J, Mydel P, Koziel J. The case for periodontitis in the pathogenesis of rheumatoid arthritis. *Nat Rev Rheumatol.* 2017;13(10):606-620.

³ van der Heijde D, *et al.* Common language description of the term rheumatic and musculoskeletal diseases (RMDs) for use in communication with the lay public, healthcare providers and other stakeholders endorsed by the European League Against Rheumatism (EULAR) and the American College of Rheumatology (ACR). *Annals of the Rheumatic Diseases.* 2018;doi:10.1136/annrheumdis-2017-212565. [Epub ahead of print].

⁴ EULAR. 10 things you should know about rheumatic diseases fact sheet. Available at: <https://www.eular.org/myUploadData/files/10%20things%20on%20RD.pdf> [Last accessed April 2018].