

Over Half Of People With Rheumatoid Arthritis Have Periodontitis

ScienceDaily (June 12, 2009) — Over half (56%) of people with rheumatoid arthritis (RA) also have periodontitis (a chronic inflammatory disease of the gum and surrounding ligaments and bones that hold the teeth in place), displaying fewer teeth than healthy matched controls, high prevalence of oral sites presenting dental plaque and advanced attachment loss (the extent of periodontal support that has been destroyed around a tooth) (chi square $p < 0.05$), according to the results of a new study presented June 12 at EULAR 2009, the Annual Congress of the European League Against Rheumatism in Copenhagen, Denmark.

In addition, these patients were found to have significantly higher RA disease activity and anti-CCP (cyclic citrullinated peptide) antibody levels than others with RA who did not exhibit periodontitis ($r = 0.84$, $p < 0.05$; $r = 0.78$, $p < 0.05$).

The study also showed that, after six months of anti-TNF therapy (prescribed to control RA inflammation and destruction), a statistically significant improvement in periodontal status was seen in 20 (80%) of the 25 participants (mean age 41.5 ± 3.7 years; mean disease duration 7.2 ± 4.8 years), suggesting that the biological therapy may also be able to modulate the inflammatory process in the periodontium (the tissues investing and supporting the teeth, including the cementum, periodontal ligament, alveolar bone, and gingival / gums).

Dr Codrina Ancuta of the Grigore T Popa University of Medicine and Pharmacy, Rehabilitation Hospital, Iasi, Romania, who led the study, said: "There is a growing body of evidence to demonstrate an association between periodontal disease and systemic conditions involving inflammatory rheumatic disease (especially RA), cardiovascular disease and diabetes. However, further cross-disciplinary research among rheumatologists and periodontologists is required to fully understand the underlying mechanisms that link RA and periodontitis, and to explore how patients can be managed more holistically using treatments such as anti-TNFs and some lifestyle approaches that may simultaneously address both conditions."

The prospective observational study compared 25 consecutive RA patients receiving anti-TNFs with 25 systemically healthy individuals matched for age, gender and periodontal status at baseline and six months, assessing both groups for periodontal status (visible plaque scores, marginal bleeding scores, attachment loss, number of present teeth), and the RA patient group in terms of RA parameters (erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), anti-CCP antibodies, disease activity and disability scores). Statistical analysis was conducted in SPSS-14 (a statistical analysis computer programme) $p < 0.05$.

Moderate to Severe Periodontitis may be a Risk Factor for Developing RA in Non-Smokers

A second study presented at EULAR 2009 showed that, although smoking is an established risk factor for both RA and periodontitis, non-smoking individuals with moderate to severe periodontitis may also be at a greater

risk for the development of RA. Those with RA who had moderate to severe periodontitis also developed significantly higher Anti-Citrullinated Peptide Antibody (ACPA) levels than those with no-mild periodontitis.

The retrospective study identified 45 RA patients based on their hospital discharge diagnostic codes from a cohort of 6,661 participants of the Atherosclerosis Risk in Communities (ARIC) study, from whom serum was obtained at the time of a detailed periodontal assessment during the period 1996-1998. RA participant sera were assessed for ACPA and rheumatoid factor (RF) positivity using ELISA (enzyme-linked immunosorbent assay). Participants were classified as having incident RA (n=33) if their first hospital discharge code occurred after periodontitis classification.

The hazard ratio (HR) of developing RA in subjects with moderate to severe periodontitis (n=27) was found to be 2.6 (95% CI=1.0-6.4, p=0.04), compared to those with no / mild periodontitis (n=6). Among lifetime non-smokers who developed RA, the Hazard Ratio was 8.8 (95% CI=1.1-68.9, p=0.04). Periodontitis severity was not shown to be independently associated with RA incidence among current and former smokers. ACPA levels were significantly higher in participants with moderate to severe periodontitis than in those with no / mild periodontitis (222.5 Units vs. 8.4 Units, p=0.04). These findings indicate that periodontitis may be a risk factor both for the development of RA, and for the development of more severe ACPA-positive disease.

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European League Against Rheumatism (2009, June 12). Over Half Of People With Rheumatoid Arthritis Have

Periodontitis. *ScienceDaily*. Retrieved September 20, 2012, from <http://www.sciencedaily.com/releases/2009/06/090612115429.htm>

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