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Periodontitis prevalence and severity in German patients with Rheumatoid Arthritis

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Authors:
Ihssan Khalili, Prof. Dr. Thomas Hoffmann, PD. DR. Barbara Noack,
TU Dresden, Medical Faculty Carl Gustav Carus, Department of Periodontics, Dresden, Germany
Prof. Dr. Martin Aringer,
TU Dresden, Medical Faculty Carl Gustav Carus, Department of Rheumatology, Dresden, Germany

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Introduction

Although periodontitis (P) and rheumatoid arthritis (RA) show several pathopysiological similarities, it is not yet suggested that there is a causal relationship between both of them. In the last years, possible associations between both diseases have been in the focus of scientific interest.
Several observational studies have shown a high prevalence of P in RA subjects compared to general population. Mercado FB (2000) has reported that the prevalence of advanced form of P was 62.5% among RA subjects. Other studies indicated that patients with RA have more moderate to severe forms of P and that RA patients are 2.27 times more at risk of developing moderate to severe P than non-RA patients (Mercado FB 2001).
Moreover it has been demonstrated that 3.9% of patients referred for management of P had self-reported RA compared to 1% prevalence reported in the normal population. The presence of periodontitis in subjects with RA has been associated with more active disease manifested by higher acute phase responses and a higher number of tender and/or swollen joints.
Although most of studies have presented an evidence supporting relation between P and RA, the strength of the estimated relation is varied. Most of studies have shown inconsistency in their setting, design and methods. The case of P and RA has been described in deferent way among the published studies.

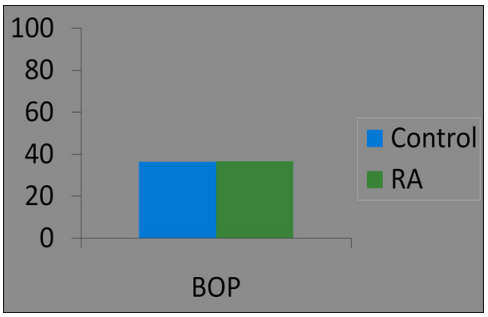
Objectives

The strength of the association between P and RA have been studied in different population with inconsistence results. Therefore, the aim of the study was to evaluate the prevalence and severity of P in patients with RA as compared to healthy individuals in a German population.

Material and Methods

The study included 68 RA patients and 126 healthy individuals, for a total of 194 subjects. RA patients were recruited from the clinic of Rheumatology, TU Dresden. Healthy subjects were obtained from the Institute of Clinical Metabolic Research of the Medical Faculty of the TU Dresden. They were part of study for risk assessment in impaired glucose tolerance (IGT) for atherosclerosis and diabetes, comprising a total of 1139 subjects. We requested the approximate first 300 participants who were not overt diabetics as well as suffered not from other chronic diseases including RA. From these randomly selected subjects, 126 subjects agreed to participate in our additional periodontal examination.
A comprehensive full-mouth clinical periodontal examination included probing depth (PD), clinical attachment level (CAL), plaque index (PI) and bleeding index (BOP). Patients were asked to answer questions on smoking status and systemic diseases related to P in a written questionnaire.
The presence of P was defined according to (Page and Eke, 2007). It has been devided into two categories: (1) moderate periodontitis when two or more interproximal sites with >4 mm clinical attachment loss (CAL), not on the same tooth, or two or more interproximal sites with probing depths (PD) >5 mm, not on the same tooth, and (2) severe periodontitis when two or more interproximal sites with CAL ≥6 mm, not on the same tooth, and one or more interproximal sites with PD ≥5 mm).
All patients with RA satisfied American College of Rheumatology (ACR) classification criteria.
Means ± SD of the clinical and immunologic parameters were calculated. The Pearson correlation coefficient test was used to analyze the correlation between the presence of RA and the severity of periodontitis.

Results



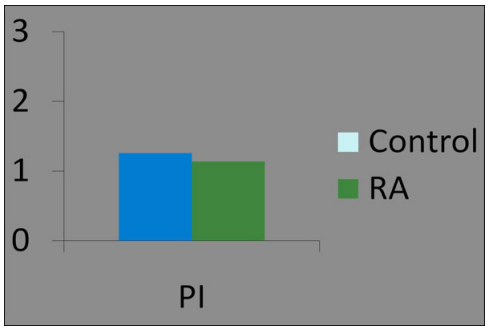
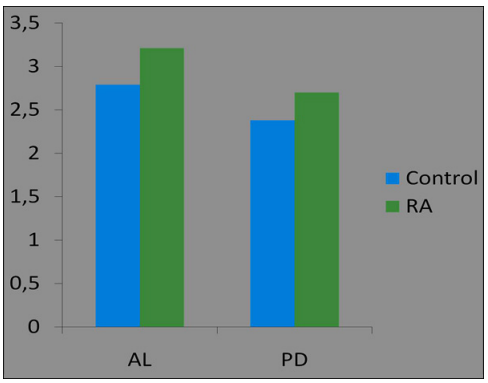


Fig. 1: Distribution of BOP (%)

Fig. 2: Distribution of PI (%)



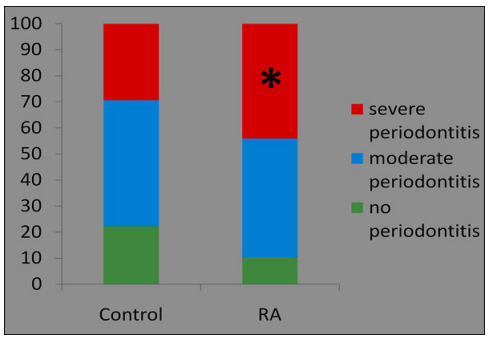


Fig. 3: Mean value of interproximal AL and PD (mm)

Fig. 4: Distribution of Periodontitis (%)

Higher levels of mean interproximal PD (2.7±0.6vs 2.4±0.7 mm, p<0.01) and CAL (3.2±1.0 vs 2.8±0.8, p<0.01) were observed in the RA group as compared to healthy individuals, whereas the level of PI and BOP were similar. When the presence of P was defined as proposed by the CDC Periodontal Disease Surveillance Workgroup (Page and Eke, 2007), RA patients shifted significantly towards severe periodontitis (44.1% versus 29.4% in healthy individuals, Chi square p = 0.013). Patients with RA had a 3.24-fold risk (95% confidence interval of OR: 1.24 to 8.45) of severe periodontitis when compared to controls. In a multivariate analysis, after adjustment for age and smoking, this association became even stronger: OR: 6.55 (95% CI: 1.64 to 26.19).

Conclusions

In this German cohort of RA patients, periodontitis was more common and significantly more severe than in healthy individuals. These results are in line with several former studies detecting an increased periodontitis risk in RA patients.

Literature

1. Mercado FB, Marshall RI, Klestov A, Bartold PM. Is there a relationship between rheumatoid arthritis and periodontal disease? J Clin Periodontal 2000;27:267-272.
2. Mercado FB, Marshall RI, Klestov A, Batold, PM. (2001) Relationship between rheumatoid arthritis and periodontitis. J Periodontol 2001;72:779-787.

This Poster was submitted by Ihssan Khalili.

Correspondence address:
Ihssan Khalili
TU Dresden
Medical Faculty Carl Gustav Carus, Department of Periodontics
Fetscherstraße 74
01307 Dresden
Germany

Poster Faksimile:

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I. Khalili[1], M. Aringer[2], Th. Hoffmann[1], and B. Noack[1]

1. Department of Periodontology, TU Dresden, Dresden, Germany
2. Medical Clinic, Rheumatology, TU Dresden, Dresden, Germany

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