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Periodontal infection may trigger rheumatoid arthritis.

Konig MF, Abusleme L, Reinholdt J, Palmer RJ, Teles RP, Sampson K, Rosen A, Nigrovic PA, Sokolove J, Giles JT, Moutsopoulos NM, Andrade F.

The periodontal pathogen *Aggregatibacter actinomycetemcomitans* may be a bacterial trigger of autoimmunity in rheumatoid arthritis.

A possible link between bacterial pathogens and the initiation of rheumatoid arthritis (RA) in some susceptible individuals in some susceptible individuals has been suspected for many years.¹ RA is a chronic, systemic autoimmune disease leading to inflammation and joint destruction, and can be driven by protein modification of RA autoantigens. Citrullinated antigens are often found in the RA joint.¹

A publication in Science Translational Medicine identified a link between the periodontitis pathogen *Aggregatibacter actinomycetemcomitans* (Aa) and the production of both disease-specific anti-citrullinated protein antibodies and rheumatoid factor, in a subset of patients with RA.¹ Periodontitis is common in patients with RA, and Aa leukotoxin (LtxA) is found in 62% (68/109) of chronic periodontitis cases.¹

“ *Aggregatibacter actinomycetemcomitans* may trigger autoimmunity and RA in susceptible individuals ”

Konig and colleagues found that Aa induced hypercitrullination on host neutrophils via the pore-forming LtxA.¹ This mechanism is thought to mimic the pathways that sustain autoantigen citrullination in the RA joint, and LtxA positivity is associated with RA autoantibodies.¹ Evidence of Aa infection was found in 47% (92/196) of patients with established RA, studied by the group.¹

“ *Aggregatibacter actinomycetemcomitans* is an inducer of cellular hypercitrullination and citrullinated RA autoantigens ”

The authors suggested that other bacteria with the ability to produce pore-forming toxins may have a wider role in the development of RA.¹ They concluded that the link between Aa and pore-forming toxins with the generation of RA autoantigens may be critical for future primary prevention and therapeutic strategies.¹

Reference:

1. Konig MF, Abusleme L, Reinholdt J, Palmer RJ, Teles RP, Sampson K et al. *Aggregatibacter actinomycetemcomitans*-induced hypercitrullination links periodontal infection to autoimmunity in rheumatoid arthritis. *Sci Transl Med* (2016); 8 (369): 369ra176.

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