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Epidemiology and pathogenesis of the link between rheumatoid arthritis and periodontitis

Key words: Rheumatoid arthritis; Periodontitis; Pathogenesis; Citrullination; Anti-citrullinated protein antibody (ACPA)

Research Summary

This review aims to provide an updated understanding of the epidemiological association between rheumatoid arthritis (RA) and periodontitis (PD), explore potential pathogenic mechanisms linking the two diseases, and highlight the key distinctions between the subtypes of RA and their respective associations with PD as follows:

- **Susceptibility gene**
- **Inflammatory mediator**
- **Oral microbial dysbiosis**
- **Citrullination mediated by PAD and *P. gingivalis* peptidylarginine deiminase (PPAD)**
- **NETosis and leukotoxic hypercitrullination**
- **Maladaptive innate immune training**

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Innovation points

- **Update** current knowledge regarding the epidemiological association between RA and PD.

- **Advance** understanding of the mechanism associations between RA and PD.

- **Heighten** awareness of the focus on early-stage RA patients and individuals who are anti-ACPA negative.

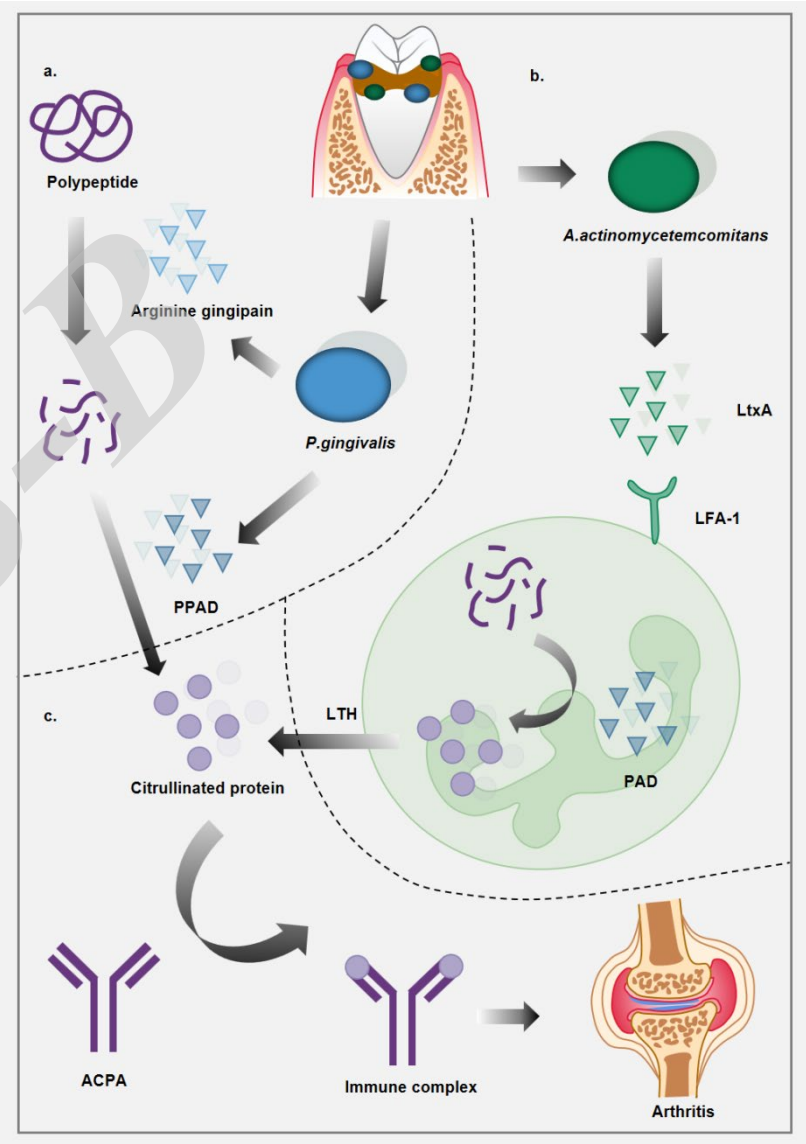

Figure 1

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