EFFECT OF HIGH FAT DIET ON SYSTEMIC AND LOCAL INFLAMMATION IN THE CONTEXT OF OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS MOUSE MODELS

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Disclosure of Interest None declared.

P164 PORPHYROMONAS GINGIVALIS EXPERIMENTALLY INDUCES PERIODONTIS AND AN ANTI-CCP2-ASSOCIATED ARTHRITIS IN THE RAT

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Introduction Association between periodontal disease (PD) and rheumatoid arthritis (RA) has been extensively described, but direct evidence of causal involvement of PD in RA is missing.

Objectives We investigated the priming role of oral Porphyromonas gingivalis (P. gingivalis) in PD and subsequent RA and we assessed biomarkers of bone resorption and arthritis development in rats.

Methods Lewis rats were orally exposed to either P. gingivalis, Prevotella intermedia or control gel for one month, and then followed during 8 months. The onset and development of PD was assessed by serology, gingivitis severity, and micro-computed tomography (μCT). We investigated arthritis development using circulating pro-inflammatory markers, anti-cyclic citrullinated peptide (CCP), anti-citrullinated protein antibody (ACPA), ankle histology, and μCT.

Results PD was only observed in the P. gingivalis treated rats, as early as one month post-exposure. Joint and systemic inflammation were detected only in the P. gingivalis group after 4 and 8 months. At 8 months, inflammatory cell infiltrate was observed in ankle joints, and paralleled cortical erosions and overall cortical bone reduction. Furthermore, anti-CCP2 correlated with local and systemic bone loss.

Conclusions In our long term study, PD induced by oral exposure to P. gingivalis triggered seropositive arthritis, with systemic inflammation and bone erosions. This is the first in vivo demonstration of arthritis induced by oral priming with P. gingivalis.