

Association of bone erosion and TNF- α expression in synovial fluid of knee-joints from patients with rheumatic arthritis and gonarthrosis

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Rheumatoid arthritis (RA), a systemic disease, is characterised by a chronic inflammatory reaction in the synovium of joints and is associated with degeneration of cartilage and erosion of juxta-articular bone. Excessive production and release of cytokines and other growth factors due to inflammation may cause alterations in bone homeostasis leading to bone degradation.

We have analysed the degree of bone destruction and expression of cytokines and matrix proteases activity in synovial fluid (SF) of patients with RA and gonarthrosis.

Cytokines were analysed by ELISA, matrix proteases activity by substrate assays and the degree of bone destruction by radiology.

In RA SF levels of TNF- α , IL-1 receptor antagonist (IL-1ra) and IL-1 β were significantly enhanced compared to gonarthrosis, whereas IL-1 α , IL-6, IL-8, collagenases and caseinases were only slightly elevated.

In gonarthrosis, there was no correlation between bone destruction and the factors analysed. In RA, no correlation between serum-CRP, duration of disease, matrix proteases, cytokine expression were found, except a significant correlation between TNF- α expression and bone destruction of the same joint.

These results confirm, that TNF- α play a major role in joint destructions in RA.