

The molecule mechanism of adipokines in human arthritic diseases

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Adipose tissue secretes various bioactive peptides or proteins, immune molecules and inflammatory mediators known as adipokines (including adiponectin, leptin, resistin and visfatin). Rheumatoid arthritis (RA) and osteoarthritis (OA) are most common type arthritis, which share common features such as monocyte infiltration, inflammation, synovial swelling, pannus formation, stiffness in the joints and articular cartilage destruction. Records from the Gene Expression Omnibus data set and our clinic samples revealed higher levels of several adipokines in RA and OA synovial tissue than in healthy tissue. Adipokines promotes proinflammatory cytokine production in human RA synovial fibroblasts (RASFs) and OASFs. In addition, adipokines also facilitates monocyte infiltration and angiogenesis during arthritic pathogenesis. Inhibiting adipokines expression attenuated paw swelling, cartilage degradation and bone erosion in anterior cruciate ligament transection or collagen-induced arthritis model. These results indicating the effects of several adipokines in cartilage and bone homeostasis in the pathogenesis of RA and OA, which has important implications for obesity.