



IL-1 β in synovial fluid potentially modulates multiple joint tissue pathologies leading to inflammation and accelerates cartilage degeneration

Authors : Priya Kulkarni, Soumya Koppikar, Datta Shinde, Shantanu Deshpande, Narendrakumar Wagh and Abhay Harsulkar

Abstract : Osteoarthritis (OA) is associated with multiple and overlapping aetiologies. IL-1 β is produced by stressed tissue and known to aggravate disease pathologies. We selected 10 patients with elevated IL-1 β in their synovial fluids (SF). We hypothesized IL-1 β as nodal-point connecting different pathologies. IL-1 β was higher in all meniscal tear (MT) patients perhaps as the earliest response to injury. Since MT above age of 30 leads to OA in less than 5 years, it is attributed that IL-1 β modulates OA pathology. Among all bilateral OA patients, an interesting case operated for Total-Knee-Replacement revealed differential cartilage degeneration demonstrating strong association with higher IL-1 β . Symptoms like acute-pain, effusion and redness were correlated with higher IL-1 β and NO (Nitric-oxide). However, higher IL-1 β was also found without typical-inflammation characterized by infiltration of neutrophils and macrophages. Cultured synoviocytes responded to IL-1 β by releasing NO. Concluding, IL-1 β in SF acquires central position influencing different OA pathologies and etiologies.

Keywords : IL-1 β , Meniscal Tear, Osteoarthritis, Synovial Fluid