**Supplementary Table 5**

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| Cytokine | Role | OA Context |
| G-CSF, Granulocyte Colony Stimulating Factor | Neutrophil regulation, initiation and maintenance of inflammation[1]. | Higher in plasma of early knee OA patients compared to non-OA controls, unchanged between early and late OA[2]. |
| Il-17a, Interleukin 17 alpha | Acts on a variety of cell-types including synoviocytes, chondrocytes, and immune cells to promote inflammation[3]. | Higher in serum of knee OA patients compared to controls, and positively correlated with radiographic severity[4].  Serum levels are positively and significantly associated with knee cartilage defects, and femoral bone marrow lesions[5]. |
| Il-6, Interleukin 6 | Produced in response to infection or injury, and can act on immune cells as well as synovial fibroblasts; in chronic disease can be over-synthesized and has a pathological inflammatory role[6], can also stimulate release of Il-10, or Il-1Ra to act in negative feedback loop of inflammatory response. | OA serum Il-6 is associated with VAS pain/ depressive state independent of knee OA severity[7].  Women with knee OA experience greater IL-6 reactivity after laboratory evoked pain[8].  Increased knee synovial fluid levels are associated with greater radiographic severity and pain, and knee cartilage loss in older adults[8, 9]. |
| Il-10, Interleukin 10 | Anti-inflammatory, secreted by cells of myeloid and lymphoid lineages and acts to inhibit cytokine production by Th1 cells[10]. | High ratios of Il-6:Il-10 in post-menopausal women have high risk for symptomatic lumbar OA[11].  Patients with knee OA had significantly lower levels of Il-10 in synovial fluid than those with acute meniscal injury[12].  Higher levels in sera of patients with painful knee OA than healthy controls[10]. |
| Il-1b, Interleukin 1 beta | Produced by chondrocytes, mononuclear cells, osteoblasts and synovial tissue and induces production of catabolic and inflammatory factors[13]. | Il-1b in SF of TMJ OA is indicative of increased pain and hyperalgesia[14].  Greater in SF of severe knee OA patients compared to mild/ moderate OA. Greater in serum of healthy controls vs mild/moderate or severe OA patients[15]. |
| Il-12p70, Interleukin 12 phosphorylated subunit 70 | A pro-inflammatory cytokine produced by monocytes, macrophages and dendritic cells, is composed of the combined p35 and p40 subunits and required for the induction of interferon-gamma production which is critical for inducing Th1 cells[16]. | Expressed in synovial lining cells and macrophages in OA and RA patients[17]. |
| Il-2, Interleukin 2 | Required for T-cell differentiation, its activation of T-cells augments production and secretion of other cytokines. Promotes proliferation of B-cells and NK cells and increases cytokine production and cytolytic activity of NK cells[18]. | Concentration of plasma Il-2 in knee OA patients (advanced and early) are higher than healthy controls.  Il-2 is detectable in the synovial membrane of early and late stage knee OA patients, but only in SF within a subset of late stage patients[19]. |
| Il-13, Interleukin 13 | Anti-inflammatory, has been described has chondroprotective in the context of OA[20].  Produced by multiple immune cell types and acts on both immune and non-immune cells to promote fibrosis, and inhibit Th1 driven inflammation as well as Th17 cells[21]. | Similar levels in primary knee OA SF as post-traumatic wrist OA SF[22].  Serum concentration of Il-13 is significantly decreased in advanced knee OA vs early OA[23]. |
| MCP-1, Monocyte chemoattractant protein 1 (also known as CCL2) | Pro-inflammatory, is a key chemokine that regulates the infiltration and migration of monocytes/macrophages, NK and memory T-cells[24]. | Higher in SF than serum of OA patients[25].  Levels of serum MCP-1 (CCL2) were associated with presence and progression of radiographic knee OA and medial joint space narrowing[26]. |
| bFGF, Basic Fibroblast Growth Factor (FGF2) | Binds heparin and heparan sulfate and stimulates processes such as angiogenesis, wound healing, and tissue development[27]. | Plasma and SF bFGF levels were significantly higher in knee OA patients than controls, and correlate with radiographic disease severity[28, 29]. |
| TNFa, Tumor Necrosis Factor Alpha | Pro-inflammatory cytokine which is produced by cells from monocyte/ macrophage lineage and involved in the propagation of the inflammatory response[30, 31]. | Blocking TNFa using adalimumab stopped progression of joint damage in erosive hand OA[32].  TNFa is associated with knee cartilage loss in older adults[8]. |
| IFNy, Interferon Gamma | Primarily secreted by activated T cells and NK cells and can regulate a number of different immune responses including macrophage activation, innate immune system activation, cellular proliferation and apoptosis[33]. | Increased levels of IFNy in synovial fluid of radiocarpal OA patients compared to pre-osteoarthritic and healthy controls.  IFNy mRNA levels in cells derived from temporomandibular joint synovial fluid are higher in OA patients than controls[34]. |
| IP-10, Interferon Gamma Induced Protein 10 (CXCL10) | A chemokine with pro-inflammatory and anti-angiogenic properties which is induced by IFNy, TNFa, NFkb and regulates immune responses through the activation and recruitment of leukocytes[35, 36]. | Plasma and synovial fluid IP-10 levels are inversely correlated with radiographic severity of knee OA[37]. |

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