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Increased expression of CD161 in the advanced stage of osteo-arthritis

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Abstract

Background: Increasing evidence suggests a role of inflammation during the pathogenesis of Osteoarthritis (OA).

Methods: The local and systemic inflammation was studied in 33 patients of different KL grades, grade2 (n=11), grade3 (n=6) and grade4 (n=16). The levels of cytokines, adipokines and Matrix metalloproteinase (MMPs) were measured in serum and synovial fluid (SF) by flow cytometry and ELISA respectively. The frequency of T cells and CD161 expression was measured by flow cytometry.

Results: The levels of IL-1β, IL-6 and IL-10 were significantly higher in sera and SF of OA patients as compared to healthy control's serum. Higher levels of MMP9, leptin and lower levels of adiponectin were observed in SF as compared to serum. The MMP9 in SF and MMP13 levels in serum and SF decreased in KL grade 4 cases. In these patients, higher levels of leptin and lower levels of adiponectin were observed in SF versus patients of lower grades. There was increased infiltration of CD8+T cells in SF of OA cases with decreased frequency in grade 4 cases. The expression of CD161 on T cells was significantly higher in SF than peripheral blood with significant up regulation in grade 4 patients. The CD161 expression had significant positive correlation with IL-17 in the serum of patients. The ROC curves of CD161 expression significantly distinguished grade 2 and grade 4 patients.

Conclusion: An elevated CD161 expression on T cells in circulation and synovial compartment clearly differentiates lower and higher grade patients warranting studies to assess its role as a contributing factor towards OA progression.

Biography

Anjali Aggarwal has completed her MD in Anatomy in 2003 from Government Medical College and Hospital Chandigarh, India. She is the additional Professor at Postgraduate Institute of Medical Education and Research Chandigarh, India. She has over 80 publications that have been cited over 500 times, and her publication H-index is 13 and she is the Member of many scientific societies. She has received many awards for her research. Currently she is working on articular cartilage regeneration in osteoarthritis and cancer biology of pancreatic cancer. Her area of interest is clinical anatomy.

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