

ABSTRACT

CORRELATION OF CHANGES IN SERUM LEVELS OF MATRIX METALLOPROTEINASES-3 (MMP-3) WITH WOMAC SCALE CHANGES AFTER GIVING INJECTION OF TRIAMCINOLON INTRA ARTICULAR IN KNEE OSTEOARTRITIS PATIENTS

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Background: Osteoarthritis is a degenerative disease of the knee, hip, spine and finger joints characterized by progressive damage to the articular cartilage and basic bone remodeling in the synovial joint. Inflammation is a condition that underlies the occurrence of osteoarthritis, which occurs locally in the synovium or systemic. Inflammatory activation of synovial cells in the synovium results in proinflammatory mediators that cause overproduction of protease enzymes such as Matrix Metalloproteinases-3 (MMP-3). Cartilage damage by protease enzymes and other inflammatory mediators causes activation of pain receptors. Intra-articular triamcinolone injection has an anti-inflammatory effect by inhibiting proinflammatory cytokines and reducing pain. Inhibition of proinflammatory cytokines is expected to prevent overproduction of MMP-3 so there is no further damage from cartilage which will have an effect on pain reduction and the WOMAC scale.

Objective: The purpose of this study was to analyze the correlation of changes in serum levels of MMP-3 with changes in the WOMAC scale after the administration of intra articular triamcinolone injection in knee osteoarthritis patients

Methods: This research is an analytic observational study conducted prospectively and has been approved by the ethics committee of RSUD Dr. Soetomo Surabaya. Research subjects in this study were 19 patients. Determination of MMP-3 serum levels using ELISA rider at the Special Infection Hospital Laboratory, Surabaya. WOMAC scale measurement using the WOMAC questionnaire. Measurement of serum levels of MMP-3 and WOMAC scale is done before and 2 weeks after intra-articular triamcinolone injection.

Result: The results of the study found that patients with osteoarthritis were more common in women than men, with increasing age the number of people with osteoarthritis increased. Reduced serum MMP-3 level ($p = 0.024$) and decreased WOMAC scale ($p = 0.02$) after administration of intra-articular triamcinolone injection, but there was no correlation between decreased MMP-3 serum levels and decreased WOMAC scale.

Conclusion: Based on the results of this study it was concluded that there was a decrease in serum levels of MMP-3 and a decrease in the WOMAC scale after administration of intra-articular triamcinolone injection, but there was no correlation between changes in MMP-3 serum levels and changes in WOMAC scale.

Key Word: *Osteoarthritis, MMP-3, WOMAC, Triamcinolon intra articular, Inflammation*