

ABSTRACT

THE CHANGES OF PRO-INFLAMMATORY CYTOKINES TNF- α LEVEL IN MELOXICAM THERAPY USING OSTEOARTHRITIS RATS MODEL

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Osteoarthritis is a chronic joint disorder characterized by damage and changes in the metabolic matrix of cartilage as well as subchondral bone. Osteoarthritis is initiated with damage to the cartilage and inflammation which results in the release of matrix metalloproteinases (MMPs) and various pro-inflammatory cytokines. One of the released pro-inflammatory cytokines is TNF- α which becomes the major cause of cartilage damage, inflammation, and pain. This occurs because TNF- α can stimulate the formation of cyclooxygenase (COX-2) that can cause the release of PGE2 as a potent mediator in the inflammatory process. Meloxicam is a selective NSAID drug for COX-2 that is expected to be able to deal with pain and inflammation occurred in osteoarthritis. The aim of this study was to scrutinize the changes levels of pro-inflammatory cytokines TNF- α in meloxicam therapy using osteoarthritis rat models.

Intra articular injection of MIA successfully induced osteoarthritis indicated by significant of joint increased in joint diameter ($p < 0.01$), decreased in resistance time to heat stimulus ($p < 0.01$), and the increased in TNF- α level in the blood ($p < 0.01$). Meloxicam with the dose of 1; 3; and 10 mg / Kg showed no effect in joint diameter ($p = 0.99$) but induce significant reversal in resistance time to heat stimulus ($p = 0.02$) compare to MIA injection group with plasebo. In addition there was significant decreased in TNF- α levels after induction compared to before therapy meloxicam.

Keywords : Meloxicam , MIA, Osteoarthritis, TNF- α .