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IL-10 and TGF β meditates chondroprotective effect of glucosamine in rat model of osteoarthritisNermien E Waly¹, Abeer Refaiy² and Nora M Aborehab³¹Helwan University, Egypt²Assiut University, Egypt³MSA University, Egypt

Osteoarthritis (OA) is a complex disease of the whole joint. Glucosamine (GlcN) treatment may have a chondroprotective effect on OA. We investigate the mechanism of action of glucosamine treatment through Interleukin-10 (IL-10) and transforming growth factor β -1 (TGF β -1). Sixty-three male albino rats were used. A single intra-articular (i.a.) injection of 2 mg of Monosodium Iodoacetate (MIA) was injected into the knee joint of anesthetized rats. GlcN (50 and 100 mg/kg/day, p.o. for 2 month) was administered orally. Serum IL-10 and TGF- β 1 were determined by ELISA. Histopathological changes in affected joints were examined. Serum level of IL-10 was significantly decreased in OA group compared to the control group (P value < 0.0001). On the other hand, the mean serum level of IL-10 was significantly increased in GlcN treated groups when compared to OA group (P value < 0.0001). Serum level of TGF β -1 was significantly elevated in OA group compared to the control group (P value < 0.0001). On the other hand, the mean serum level of TGF β -1 was significantly decreased in GlcN treated groups when compared to OA group (P value < 0.0001). Histopathological evaluation of Glucosamine treated groups showed different grades of healing according to Osteoarthritis Research Society International (OARSI) grading system. Our results show that GlcN exerts its chondroprotective effects via the stimulation of IL-10 production and Inhibition TGF β 1. Both Serum biomarkers can be a used as a tool for the follow up of articular cartilage damage in the clinical setting.

Biography

Nermien E Waly is a Lecturer at the School of Medicine Helwan University. She graduated from Assiut School of Medicine where she got her MBBCh, and Master's. She earned her PhD from the Biomedical Sciences department, School of Medicine, Creighton University, USA. She did her Post-doctoral studies at the University of Nebraska Medical Center (UNMC), USA. She has an extensive teaching experience both in the USA and Egypt. Her research is in the neuroscience field particularly circadian research. She is also interested in alternative medication for diseases as well as its impact on homeostatic mechanisms of various physiological functions.

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