

STUDY ON THE EFFECT OF METHOTRAXATE DRUG ON RETINOL-BINDING PROTEIN 4 (RBP4), NESFATIN AND SOME TRACE ELEMENTS IN IRAQI MALE PATIENTS WITH RHEUMATOID ARTHRITIS

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ABSTRACT : Methotrexate (MTX) is one of the most effective medications to treat rheumatoid arthritis (RA). A serum of 60 Iraqi male patients suffering from RA as (G1) was newly diagnosis and the same patient in G1 after taking MTX as G2 and 40 Iraqi male healthy control as G3. Nesfatin-1 (Nf-1) is belong to the adipokine family with pleiotropic effect. Nf-1 has been found in different tissues, including stomach, pancreas, bone cells, cartilage and heart. Retinol binding protein (RBP4) was known as transpoter of retinol from its storage sites in the liver to the extrahepatic tissues. Moreover, RBP4 acts as adipokine and contributes in the pathophysiology of prototypic inflammatory disease, rheumatoid arthritis (RA). The results showed a significant increase in levels of NF-1 in the patients after and before treatment with MTX, while there was a significant decrease in RBP4in RA patients before administration MTX. Also, there was a high significant positive correlation (+ve) between RBP4 and Zn and non-significant negative (-ve) correlation between NF-1 with RBP4 in G1 and G2.

Key words : Nesfatin, Retinol-Binding Protein 4 (RBP4), zinc and copper, rheumatoid arthritis.

INTRODUCTION

Rheumatoid arthritis (RA) is an autoimmune disease, it cause systemic illness, pain, swelling and destruction of the joints, it isobserved in the elderly people (Guo *et al*, 2018). The primarily effectsof RA is the lining of the synovial joints, which cause progressive disability, premature death and socioeconomic burdens. The clinical appearance of symmetrical joint include arthralgia, redness, swelling and even limiting of motion (Alsubaie *et al*, 2018). Thus, patients suffering from RA need daily medication to reduce physical disability changes and relieve the pain. The most commonly medication use inRA is Methotrexate (MTX) because of both effectiveness and safety (Kremer, 1995; Kaltsonoudis *et al*, 2012).

Nesfatin-1 is a polypeptide containing 82 amino acid residuesand approximately MWt of 9.8 kDa (Schalla and Stengel, 2018). It is expressed in the hypothalamus, pancreatic islets, gastric endocrine cells and adipocytes (Ademoglu *et al*, 2017).

It has antiapoptotic, protective effects on gastric mucosa (Szlachcic *et al*, 2013; Özsavcı *et al*, 2011) and anti-inflammatory effects through the maintenance of the

intracellular antioxidants (Kolgazi *et al*, 2015).

Levels of Nesfatin-1 in synovial fluid and serum were related with disease occurrence and of knee osteoarthritis (Zhang *et al*, 2015).

Retinol binding protein4 (RBP4) is a specific carrier of retinol from the liver to the periphery and less amount of RBP4 originates from adipose tissue (Wei *et al*, 2019).

Several studies observed that the high RBP4 levels associated with inflammation and complicated with metabolic syndrome, cardiovascular diseases, type 2 diabetes and insulin resistance (Sun *et al*, 2014; Bobbert *et al*, 2009; Huang *et al*, 2012).

The aim of this study was examine serum nesfatin-1 concentrations and Retinol-Binding Protein 4 (RBP4) to investigate whether they have any correlation with zinc and copper in male Iraqi patients with Rheumatoid arthritis.

MATERIALS AND METHODS

Nesfatin-1, RBP4, zinc and copper levels were measured in sera of 60Iraqi male patients suffering from RA newly diagnosis without treatment of MTX as group one (G1) and the same patients after six months of treatment with MTX as group two (G2), (mean age