

MOLECULAR STUDY OF POLYMORPHISM FOR GENE TNF-ALPHA USING ARMS-PCR TECHNIQUE FOR PATIENTS WITH RHEUMATOID ARTHRITIS

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(Received 13 February 2019, Revised 30 May 2019, Accepted 15 June 2019)

ABSTRACT : Rheumatoid Arthritis is one of the most common diseases of the present, which develops rapidly and affects both sexes with different ages. Since there is no study that deals with the relationship between the formal polymorphism of a tumor necrosis factor at the site (G-308A) of the Country level. This study was designed to investigate the association between the polymorphism of the alpha tumor necrosis factor at the site (G-308A). And its relationship with rheumatoid arthritis disease in a group of Iraqi patients infected with this disease using the technique of Tetra-Primer ARMS-PCR the 100 blood samples were collected from patients with rheumatoid arthritis of both sexes, who were diagnosed by specialists from different areas of Salah Al-Din governorate and 50 blood samples from healthy people as a control group without any disease and at roughly similar ages, basic laboratory tests (RF, ESR, CRP). For the purpose of confirming the injury of patients and non-infected healthy people disease Rheumatoid Arthritis, where DNA was extracted from all samples and performed molecular diagnosis of mutation (G-308A) using the technique of Tetra-Primer ARMS-PCR. The multiplication results were then migrated on the agarose gel, according to the results of this study, all patients with arthritis have a high rate of ESR and CRP. Most have a positive rheumatoid factor test compared with the healthy group. In addition, the majority of the patients were female. On the other hand, the results showed that the allele frequency G was found in 52% patients and 98% control group, while the allele frequency A was 48% in the patients group and 2% in the healthy group.

Key words : Rheumatoid arthritis, gene TNF-Alpha, polymorphism.

INTRODUCTION

Arthritis is one of the most common diseases at present. It takes many forms and develops rapidly and affects both sexes of different ages and there are different types including osteoporosis, rheumatoid arthritis, severe sepsis, gout, rheumatoid arthritis, psoriatic arthritis, still disease and juvenile arthritis. The severity of the disease varies according to the stage of the disease, In general rheumatoid arthritis is the most common type of arthritis (Muhsen and Aldujaly, 2011).

Rheumatoid arthritis disease is described by Thomansydenhame and lavdry in 1800. But the first to be called rheumatoid arthritis is 1859 (Mainiand Feldman, 1998).

Rheumatoid arthritis is an autoimmune disease. It is a chronic systemic inflammatory disease that affects the synovial joints mainly and leads to erosion, deformity, joint destruction and loss of function (Gupta *et al*, 2005; Haslett *et al*, 2002; Klippel *et al*, 2001; Robbins *et al*, 2001). The experts divided the disease into two types. The first is Oligoarthritis (which is the least common) and remains

for a few months and the cure occurs without permanent disability. The second type is polyarthritis (the chronic type), which lasts several years and may last a lifetime (Klippel, 2001; Mercy Medical Center, 2005; University of Maryland Medical Center, 2004).

Rheumatoid arthritis is present in different places of the body, including the jaw, knees and arm. It mainly affects the synovial joints and leads to erosion, deformity, destruction of the joint and loss of function It is often (Muhsen and Aldujaly, 2011) very widespread in the world. It is a common disease in many countries and affects women more than men in the rate of 3:1 (Hyde, 2000). While his percentage was in Iraq 2.9:1 (Abass, 2003) as well (Alqasiy, 2003) that ratio 9.3:1 is the infection of women to men, where the disease in Iraq is now one of the most dangerous diseases and the most affected among other diseases and found that the prevalence of nearly 1%, similar to the rate of spread in other countries Rheumatoid arthritis occurs during adolescence and increases moderately in the third decade with a severe increase in the fourth decade of life (Winchester, 1995).