

Available online on 15.07.2020 at <http://jddtonline.info>

Journal of Drug Delivery and Therapeutics

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Case Report

Association of Gout with Rheumatoid Arthritis and Pulmonary Toxicity of Methotrexate: A Case Report about Algerian Women

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ABSTRACT

Coexistence of rheumatoid arthritis and gout is considered as rare however some patients may gather both diseases. Long-term treatment with Methotrexate may cause pulmonary pathology. We report a case of a 48-year-old Algerian woman with medical history (swelling of knee and joint pain in the shoulders and hands) diagnosed with Rheumatoid Arthritis (RA), after 3 years of self-medication with Methotrexate; she returned with hyperurecemia that confirmed the co-presence of the gout and RA as well as a pneumonia confirmed with clinical sign and chest X-Ray. Methotrexate dose compliance can reduce adverse effects.

Keywords: Rheumatoid arthritis; Gout; Pneumonia; Methotrexate; Toxicity.

Article Info: Received 21 April 2020; Review Completed 16 June 2020; Accepted 24 June 2020; Available online 15 July 2020



Cite this article as:

Ouali S, Zemri K, Kanoun K, Harir N, Benaïssa Z, Sellam F, Karoubi K, Hebri ST, Association of Gout with Rheumatoid Arthritis and Pulmonary Toxicity of Methotrexate: A Case Report about Algerian Women, Journal of Drug Delivery and Therapeutics. 2020; 10(4):216-218 <http://dx.doi.org/10.22270/jddt.v10i4.4262>

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INTRODUCTION:

Rheumatoid Arthritis (RA), is an autoimmune disease, it is known as the most frequent chronic inflammatory joint pathology which is characterized by excessive synovial inflammatory response with osteoarticular involvements⁰¹. The gout is an inflammation of the joints or periarticular joints triggered by monosodium urate microcrystals (UMC)⁰² involving a defensive reaction of the organism that relies primarily on innate immunity⁰³. Copresent rheumatoid arthritis (RA) and gout is very rare.⁰⁴

This case report focuses on a 48 Year-Old Algerian woman with a history of joint pain at the level of the knees, shoulders and hands that were diagnosed as rheumatoid arthritis and gout disease.

CASE REPORT:

A 48 years old Algerian woman in 2015 with a history of Diabetes and high blood pressure, was admitted to the government hospital for swelling of knee and joint pain in

the shoulders and hands since 6 months (The pain score ranging from 7-8/10).

She underwent many biological tests that showed a C-reactive protein (CRP) rate of 24.3mg/L, a high sedimentation rate of 58 mm/h, a positive rheumatoid factor (RF) (+++), An anti-cyclic citrullinated peptide (anti-CCP) (+++) and normal uric acid level(4.5 mmol/l). Our patient used Folic acid and methotrexate (MTX).

One month after this treatment, her symptoms of knee swelling and joint pain in the shoulders and hands were attenuated however, the patient lost her sight.

In 2018, the patient came for her usual follow-up; she suffered from chest pain, breathing difficulties, dyspnea and swelling of knee.

Due to these symptoms, the patient was subjected to a clinical examination, cytobacteriological examination of the urine (CEBU), chest X-Ray, C-reactive protein (CRP), sedimentation rate, anti-CCP, rheumatoid factor (RF), uric

acid, creatinine and blood Glucose. The clinical examination shows the presence of nodules in the knees.

After a week, her exams showed that C-reactive protein (CRP) was positive (34.2mg/l) with a high sedimentation rate (45 mm/h), positive RF, positive anti-CCP and hyperurecemia (10.8mmol/l).

The CEBU (Cytobacteriological examination of urine) showed the presence of sodium urate crystals (**Figure 1**).

All her investigations (medicals and biological tests) confirmed the coexistence of rheumatoid arthritis and gout with each other.

The chest X-Ray revealed pneumonia (**Figure 2**).

MTX treatment was stopped by the doctors, and they decided to replace it by colchicines and non steroidal anti-inflammatory.

In July 2019, We recorded the patient's death after a cerebrovascular accident (stroke).



Figure 1: Cytobacteriological examination of urine demonstrating the presence of sodium urate crystals (GR×100)

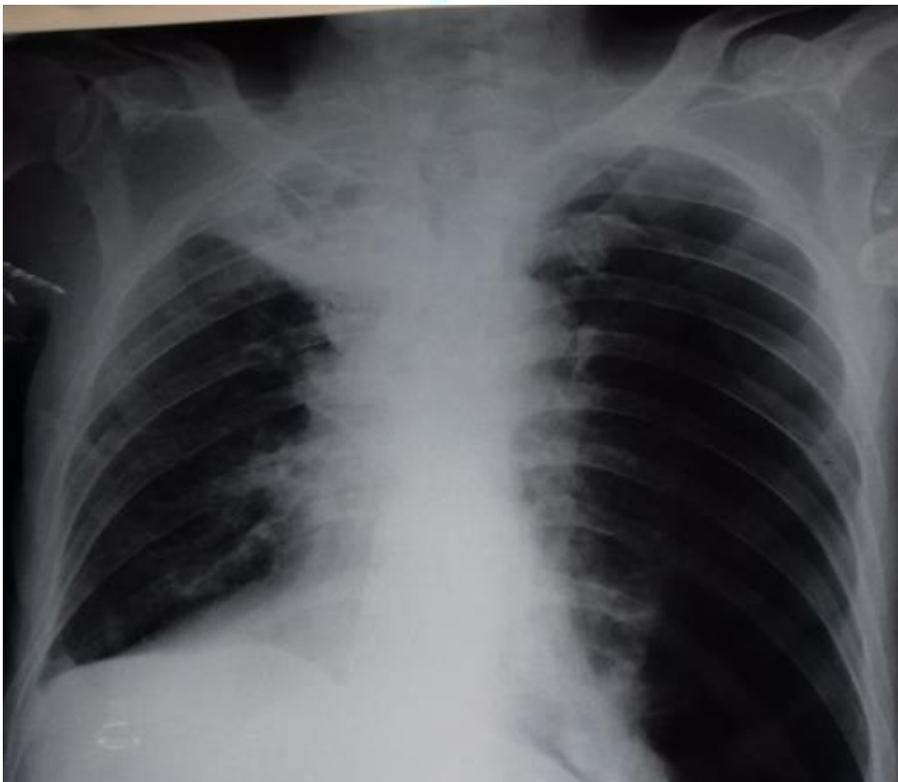


Figure 2: chest X-Ray revealed a pneumonia

DISCUSSION:

The Coexistence of gout and RA is rarely reported. During the past 40 years, The English language journals have cited the existence of only 24 individual; In Taiwan (Chang Gung Memorial Hospital) 08 cases were reported between 1994 and 2005 ⁰⁴, and Jebakumar and al found only 22 cases had gout prior to the RA incidence in 813 cases⁰⁵, The incidence of gout in RA patients exist but with a low rate ⁰⁶. Our patient with a history of joint pain in the knee, shoulders and hands, a normal uric acid level, a positive FR, CRP and Anti-CCP in the beginning of the diagnosis, what it proves the non-existence of gout in the in the beginning, but after 2 years, this patient returned with swelling of knee and hyperuricemia.

Moreover, Methotrexate (MTX) is a anti-inflammatory and immunomodulating, used for the treatment of RA since 1951⁰⁷, Pulmonary toxicity was reported in 1969 after treatment with a high dose MTX ⁰⁸, the incidence of the pulmonary toxicite related MTX has been reported as low (2-8%) ⁰⁹. Methotrexate may cause more type of pulmonary toxicity such as : Inflammatory lung disease, Pulmonary infections, Pulmonary malignancy ¹⁰ Kremer et al. found that patient with rheumatoid arthritis–developed lung injury after being treated with methotrexate ¹¹. The woman presented in this case report developed pneumonia after 4 years of treatment with MTX.

The symptoms of pulmonary disease were: dry cough, dyspnea, general discomfort ¹². The patient presented in this case report had some clinical symptoms of pneumonitis (pneumonia) such as breathing difficulties and dyspnea.

CONCLUSION:

The Coexistence of gout and RA in the same patient was reported to be very rare. It is not frequent but it exists. For that reason, levels uric acid should therefore be monitored for people with RA using other techniques for the diagnosis. 30% of patients treated with Methotrexate for ≥ 5 years develop different pulmonary involvement; that's why, patients need to know how to use methotrexate safely,

which should be monitored during treatment, and above all, avoid self-medication.

Conflict of interest: The authors declare no conflicts of interest

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