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Case Report

Methorexate therapy in a patient with rheumatoid arthritis complicated by idiopathic thrombocytopenic purpura

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Abstract

The association of rheumatoid arthritis (RA) and immune thrombocytopenic purpura (ITP) has been reported rarely. Methotrexate, which is used for RA treatment, causes thrombocytopenia. Therefore, in medical practice, physicians avoid using methotrexate for RA in patients who have both RA and ITP. Here, we report an RA case that also had ITP, which did not decrease in platelet count after methotrexate therapy.

A 50-year-old woman was diagnosed with diabetes mellitus in 1990, RA in 1995, and ITP in 2000. She had received hydroxychloroquine for more than 5 years. She was treated with prednisolone 16 mg/daily between 2006 and 2007, but she discontinued this therapy because of weight gain. Laboratory findings were not remarkable, except for thrombocytopenia. We started methotrexate therapy 10 mg per week for treatment of RA, and hydroxychloroquine therapy was stopped due to nonresponse. The methotrexate dose was increased up to 15 mg/week. Her complete blood cell count was monitored frequently. We did not observe any decrease in platelet count, while active arthritis symptoms of the patient were relieved.

This case shows that methotrexate may be used in patients diagnosed with RA that is associated with ITP under strict monitoring.

Keywords: Rheumatoid arthritis, immune thrombocytopenic purpura, methotrexate

Introduction

Rheumatoid arthritis (RA) is a chronic systemic inflammatory disease, the major manifestation of which is synovitis of multiple joints.

Immune thrombocytopenic purpura (ITP) is an autoimmune condition in which pathogenic antibodies bind platelets, resulting in accelerated platelet clearance. The disorder is primary and idiopathic in most adult patients, although it can be associated with connective tissue disease (such as systemic lupus erythematosus), medication, and infections (such as hepatitis C virus and HIV infections).

The association of RA and ITP has been reported rarely. Methotrexate, which is used for RA treatment, causes thrombocytopenia. Therefore, in medical practice, physicians avoid using methotrexate in patients who are diagnosed with ITP.

In our case, who was diagnosed with RA and ITP, methotrexate was used for her active arthritis because of unresponsiveness to hydroxychloroquine. We did not observe a decrease in platelet count after methotrexate therapy

Case Presentation

A 58-year-old woman was admitted to our hospital with shoulder pain, morning stiffness, and arthralgia of her fingers and hands. She was diagnosed with diabetes mellitus in 1990, RA in 1995, and ITP in 2000.

Before admission, she had received hydroxychloroquine for more than 5 years. She was treated with prednisolone 16 mg/daily between 2006 and 2007, but she discontinued this therapy because of weight gain.

Even though she had used hydroxychloroquine, she had symmetric arthralgia on her hands and shoulders and swelling on her hands. She had morning stiffness for 90 minutes.

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Table 1. Laboratory parameters of the patient

Parameter (unit)	Conclusion	Normal Range
Hemoglobin (gr/dL)	12.5	12-18
Sedimentation rate (mm/hour)	11	2-20
C-reactive protein (mg/dL)	0.58	0-0.5
Rheumatoid factor (IU/mL)	20>	0-23
White blood cell count (k/uL)	8.6	4.8-10.8
Platelet count (k/uL)	42	148-424

She had never used methotrexate, which is usually seen as the primary treatment for RA, before she was admitted to our hospital. Physicians had avoided this therapy in this patient, who was also diagnosed with ITP, because of the possibility of a decrease in platelet count.

Nothing was determined in the laboratory findings except for thrombocytopenia (Table 1).

We started methotrexate therapy 10 mg per week for treatment of the RA.

Hydroxychloroquine therapy was stopped due to nonresponse. Active arthritis symptoms of the patient were relieved when the methotrexate dose was increased to 15 mg. Her complete blood cell count was monitored frequently. But, we did not observe any decrease in platelet count. Informed consent for publication was obtained from the patient.

Discussion

The association of RA and ITP has seldom been reported (1-4). RA and ITP are both autoimmune diseases that have some general immunologic mechanisms. Immunosuppressive agents are used in the treatment of both diseases. However, thrombocytopenia is a well-known side effect of drugs used in RA therapy, such as methotrexate and cyclophosphamide. Although methotrexate is one of the first-choice drugs for RA therapy, there is no consensus on treating patients with diagnosed ITP that is associated with RA, since reported cases are limited.

Horino et al. (4) have reported a patient who developed thrombocytopenia while she was receiving low-dose methotrexate, prednisolone, and cyclophosphamide for RA, and then, she was diagnosed with ITP. However, there had not been any improvements in thrombocytopenia upon discontinuation of these drugs. On the other hand, when they added cyclophosphamide into the treatment again, it was reported that the thrombocytopenia did not get worse.

While Ustun et al. (3) were treating a patient with a diagnosis of RA with a low dose of methotrexate, sulfasalazine, and prednisone, they discontinued methotrexate and sulfasalazine therapy in order to prevent thrombocytopenia when ITP developed. However, there had not been any improvements in the thrombocytopenia with discontinuation of these drugs, but they were able to get a response when the steroid dose had been increased.

Yamaguchi et al. (5) used a high dose of steroid in a patient with adult Still's disease for his thrombocytopenia and other symptoms. Since they could not get a response, they started methotrexate. They reported that there had been an improvement in the number of thrombocytes with the methotrexate therapy.

Llaman et al. (6) evaluated treatment modalities for ITP. They reported that methotrexate is one of the choices in the treatment of ITP patients who are unresponsive to splenectomy.

Methotrexate had never been used for RA therapy in our case, who had RA associated with ITP, until she consulted us. Our patient was admitted to our clinic for her active arthritis symptoms, even though she had been using hydroxychloroquine for 3 years. We stopped hydroxychloroquine and started methotrexate under strict monitoring of the complete blood cell count. After the methotrexate treatment, her arthritis symptoms have regressed significantly, while a decrease in the number of thrombocytes has not been observed.

To conclude, this case shows that methotrexate may be used in patients diagnosed with RA that is associated with ITP under strict monitoring.

Informed consent: Written informed consent was obtained from patients who participated in this case.

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