Letters to the Editor

**Thrombopoietin-receptor agonist as a treatment of thrombocytopenia associated with systemic lupus erythematosus**

*Agonista del receptor de trombopoyetina como tratamiento de trombocytopenia asociada a lupus eritematoso sistémico*

To the Editor,

Systemic lupus erythematosus (SLE) is a disease that is characterized by both the clinical manifestations and the analytical findings. According to published series, up to 30% of the patients with SLE have thrombocytopenia.\(^1\)

A number of approaches have been used to treat thrombocytopenia and other hematological disorders in SLE patients (glucocorticoids, intravenous immunoglobulins, cyclophosphamide, rituximab and splenectomy, among others).\(^2\)

We present the case of a woman with SLE and associated autoimmune thrombocytopenia, refractory to conventional therapies, that responded satisfactorily to treatment with a thrombopoietin-receptor agonist.

The patient was a 39-year-old woman who, in 2010, had been diagnosed with SLE on the basis of thrombocytopenia, arthritis and positive tests for antinuclear, anti-Sm, anti-Ro and anti-La antibodies. Treatment was started with hydroxychloroquine (200 mg/day) and low-dose glucocorticoids (5 mg of prednisone daily), which produced an improvement in all the manifestations except thrombocytopenia. The patient’s platelet count reached levels as low as 5000/µL, and she experienced occasional epistaxis, as well as menorrhagia. Thus, treatment was attempted with prednisone at a dose of 0.5 mg/kg/day, which was changed, in succession, to mycophenolate (2 mg/kg/day), azathioprine (100 mg/day) and rituximab, with no improvement. This led us to consult with hematologists from our hospital, and a joint decision was made to initiate treatment with oral eltrombopag (a thrombopoietin-receptor agonist) at 50 mg once daily. After 1 month of treatment, we observed an increase in the platelet count, which reached a high of 168 000/µL, making it possible to reduce the prednisone dose to 2.5 mg/day.

In the literature, we found six cases of refractory thrombocytopenia associated with SLE in which there was a good response to treatment with a thrombopoietin-receptor agonist. All the patients responded to this treatment within a period of 1–3 weeks, after their disease had proved refractory to a multitude of immunomodulatory therapies (corticosteroids, intravenous immunoglobulins, rituximab, cyclophosphamide, azathioprine and splenectomy).\(^3\)

The mechanisms proposed as the major causes of thrombocytopenia in SLE are antibody-mediated platelet destruction, alterations in thrombopoiesis and thrombotic microangiopathy/presence of antiphospholipid antibodies.\(^1,4\)

After binding to its receptor, thrombopoietin induces the maturation of megakaryocytes. Systemic lupus erythematosus patients are positive to anti-thrombopoietin antibodies, and the levels of thrombopoietin are low.\(^5\)

The thrombopoietin-receptor agonists, eltrombopag and romiplostim, stimulate the proliferation and maturation of megakaryocytes in the bone marrow. These drugs are used regularly in hematology to treat chronic autoimmune thrombocytopenia.\(^1–4\)

Romiplostim is administered subcutaneously once a week at doses that range from 1 to 10 µg/kg. Eltrombopag is administered orally at doses of 25, 50 or 75 mg a day.\(^1,3\)

Despite the favorable and encouraging results, romiplostim and eltrombopag do have secondary effects, and an increase in the incidence of thrombosis (of around 6.5%) has been reported after sustained treatment with these drugs.\(^3\)

**Funding**

This work has received no funding.

**References**

1. Lu C, Nossent J. Thrombopoietin levels in systemic lupus erythematosus are linked to inflammatory cytokines, but unrelated to thrombocytopenia or thrombosis. Lupus. 2015;24:18–24.


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