Reumatol Clin. 2016;12(1):57–61

Reumatología Clínica

www.reumatologiaclinica.org

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 trombocitopenia 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 metrorrhagia. 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.[3]

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.
2. Liu XG, Hou M. Immune thrombocytopenia and B-cell-activating factor/a proliferation-inducing ligand. Semin Hematol. 2013;50:S89–99.
3. Magnano L, Enríquez H, Esteve J, Cervera R, Espinosa G. Effectiveness of thrombopoietin-receptor agonists in the treatment of refractory immune thrombocytopenia associated to systemic lupus erythematosus. J Rheumatol. 2014;41:1895–6.
4. Yehudai D, Toubi E, Shoenfeld Y, Vadasz Z. Autoimmunity and novel therapies in immune-mediated thrombocytopenia. Semin Hematol. 2013;50:S100–8.

Maria José Moreno Martínez,[a,*] Pilar Gallego,[b]
Manuel J. Moreno Ramos[c]

[a] *Reumatología, Hospital Universitario Rafael Méndez, Lorca, Murcia, Spain*
[b] *Hematología, Hospital Universitario Rafael Méndez, Lorca, Murcia, Spain*
[c] *Reumatología, Hospital Universitario Virgen de la Arrixaca, Murcia, Spain*

* Corresponding author.
E-mail address: mjmorenomartinez@gmail.com
(M.J. Moreno Martínez).

☆ Please cite this article as: Moreno Martínez MJ, Gallego P, Moreno Ramos MJ. Agonista del receptor de trombopoyetina como tratamiento de trombocitopenia asociada a lupus eritematoso sistémico. Reumatol Clin. 2016;12:57.