

# Piracetam-induced immune thrombocytopenia

### To the editor

We refer to the paper of Oghlakian *et al.* on levetiracetam-induced thrombocytopenia (2010). As has been demonstrated by others previously, levetiracetam was shown in this study to cause thrombocytopenia, most likely regulated by the immune system (Meschede *et al.*, 2008; Peer Mohamed and Prabhakar, 2009).

Piracetam has primarily been used as a nootropic drug and levetiracetam as an antiepileptic. Although piracetam and levetiracetam have marked differences in pharmacological activity, they have only subtle differences in molecular configuration (Genton and Van Vlymen, 2000; Malykh and Sadaie, 2010). Therefore, it is surprising that since the discovery of piracetam in the late 1960s, no cases of immune thrombocytopenia related to piracetam have been reported. However, it now appears that immune thrombocytopenia can be caused by piracetam.

A 69-year-old male patient was admitted on May 24<sup>th</sup> 2010 with profound thrombocytopenia of less than 3000/mm<sup>3</sup>, accompanied by purpura and mucosal bleeding. Twelve days earlier he had started taking piracetam, 1,200 mg three times per day, because of paraesthesia in the left arm and leg. In 2004, he had already suffered from profound thrombocytopenia in the context of piracetam use. Treatment at that time consisted of corticosteroids and intravenous immunoglobulins. For the recent thrombocytopenia, piracetam was stopped and he was treated with intravenous immunoglobulins for five consecutive days at 0.4 g/kg per day and tranexamic acid. On the last day of immunoglobulin administration, the platelets increased to 7,000/mm<sup>3</sup>, 12 days later to 17,000/mm<sup>3</sup>, and 34 days later to 58,000/mm<sup>3</sup>. All signs of bleeding disappeared.

The rapid and profound thrombocytopenia after this unfortunate rechallenge, as well as the response following cessation of treatment with piracetam and intravenous immunoglobulins, strongly suggests that 1) piracetam was the cause and 2) the pathogenesis was immune- (antibody) regulated. Although levetiracetam, which is molecularly similar to piracetam, has previously been described to be associated with immune thrombocytopenia, this report is important since, to the best of our knowledge, it is the first to link piracetam to this complication.

Dries Deeren, Lien Deleu  
Department of Hematology, H.-Hartziekenhuis  
Roeselare-Menen vzw, Roeselare, Belgium  
*<DDdeer@hhr.be>*

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