



## Hematopoietic stem cell transplantation for the treatment of leukocyte adhesion deficiency type III

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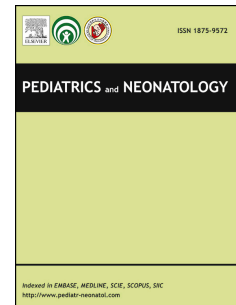
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**TITLE PAGE**

**Article category:** pediatric hematology

**Title:** Hematopoietic stem cell transplantation for the treatment of leukocyte adhesion deficiency type III

**Running title:** Treatment of LAD III

**Authors:**

Paul Saultier,<sup>1,2</sup> Marie-Christine Alessi,<sup>1,3</sup> Gérard Michel<sup>2</sup> and Hervé Chambost<sup>1,2</sup>

<sup>1</sup>*Aix Marseille Univ, INSERM, INRA, NORT, Marseille, France*

<sup>2</sup>*Department of Pediatric Hematology and Oncology, Timone Enfants Hospital, APHM and Aix Marseille Univ, Marseille, France*

<sup>3</sup>*APHM, CHU Timone, French Reference Center on Inherited Platelet Disorders, Marseille, France*

**Corresponding author:**

Paul Saultier, Department of Pediatric Hematology, Timone Enfants Hospital, 264 rue St Pierre, 13385 Marseille, France; E-mail: paul.saultier@gmail.com; phone: +33491386778; fax: +33491384989.

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**TEXT**

To the Editor,

We read with great interest the article published in *Pediatrics and Neonatology* by Aygun and colleagues.<sup>1</sup> The authors described the cases of two children of Turkish origin who had leukocyte adhesion deficiency type III (LAD III). To date, fewer than 40 cases have been reported in the literature. In this article, the authors provided clinical data and conducted a biological investigation, including genetic analysis, that led to the diagnosis. They also provided interesting information regarding the treatment.

The patients described by Aygun and colleagues harbored a Glanzmann-like bleeding phenotype associated with recurrent infections, which are reported in almost all patients with LAD III. The authors stated that hematopoietic stem cell transplantation (HSCT) was the only proven curative therapy for the disease. Indeed, several other groups reported the cure of LAD III using HSCT. One of the two patients reported by Aygun and colleagues died a few months after HSCT because of bacteremia and graft-versus-host disease. They assumed that the delayed diagnosis and HSCT accounted for the outcome. They stated, like other authors, that performing HSCT in early infancy will improve the outcome of LAD III. However, an early HSCT would preclude the precise evaluation of disease severity, which can vary among patients with LAD III. Furthermore, HSCT is associated with a high treatment-related mortality. Indeed, several authors reported HSCT-related deaths in patients with LAD III.<sup>2,3</sup> Other groups reported graft failure. As proposed by several investigators, the recovery of recipient hematopoiesis after HSCT may be related to the osteopetrosis-like increased bone density observed in several patients with LAD III. Overall, no clear evidence supports the systematic and early use of HSCT in LAD III. Optimizing the treatment of bleeding and infections without performing HSCT may be an appropriate approach for the management of this disease, at least for the patients with the mildest symptoms. Indeed, several authors

reported that patients treated for LAD III survived even without HSCT.<sup>2</sup> However, these investigators provided limited data regarding the treatment.

The optimal management of LAD III remains to be delineated. Owing to the rarity of the disease, evaluation of the HSCT benefit-to-risk ratio is not straightforward. Reporting of LAD III cases is pivotal for a precise description of the disease phenotype. Data regarding long-term management of patients with LAD III treated without HSCT are scarce but would be greatly useful to evaluate the different therapeutic options.

**CONFLICT OF INTEREST STATEMENT**

The authors have no conflict of interest to declare.

ACCEPTED MANUSCRIPT

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