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A. Jain

*Zucker School of Medicine at Hofstra/Northwell*

I. Sahdev

*Zucker School of Medicine at Hofstra/Northwell*

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# Biology of Blood and Marrow Transplantation

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Letters to the Editor

## Alemtuzumab Pharmacokinetics in Hematopoietic Stem Cell Transplants for Nonmalignant Genetic Diseases



Akshat Jain\*, Indira Sahdev

Steven and Alexandra Cohen Children's Medical Center of New York, New York, New York

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### To the Editor:

Recently Mahadeo et al. [1] reported interesting results of their novel conditioning regimen for patients with nonmalignant genetic diseases. In the article the authors used mAb alemtuzumab in a total dose of 52 mg/m<sup>2</sup> on days 8, 9, and 10 before the date of transplant. Pharmacokinetic studies were obtained on days 7, 14, 21, and 28 for half of the patients in this study and resulted in no reported dose modifications. Although the authors reported median time to clearance of alemtuzumab to be 14 days (range, 3 to 21 days), inclusion of descriptive pharmacokinetic curves for these immune naive participants would have aided the understanding of in vivo pharmacology of the mAb.

Alemtuzumab, a potent CD52 inhibitor that causes in vivo T cell depletion in recipients, has been used in various reduced-intensity conditioning (RIC) regimens at varying times during conditioning [2–4]. Although there is plentiful pharmacokinetic data for this mAb in the adult and pediatric transplant recipients for malignant conditions [5,6], few studies have reported measuring these levels in recipients for nonmalignant disorders.

Unlike the patients in this study, many patients receiving other RIC for nonmalignant diseases have seen increased rates of failure to engraftment. The pharmacokinetic data from this study could have been useful in studying treatment-related outcome for other and future studies.

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\* Correspondence and reprint requests: Akshat Jain, MD, MPH, Pediatric Hematology/Oncology and Stem Cell Transplantation, Steven and Alexandra Cohen Children's Medical Center of New York, 269-01, 76 Ave., Suite 255, New Hyde Park, NY 11040.

*E-mail address:* [dostakshat@gmail.com](mailto:dostakshat@gmail.com) (A. Jain).

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Various studies have used alemtuzumab recently for patients with nonmalignant disorders. Adequate timing of alemtuzumab is key for optimum outcome as recently demonstrated by us [7]. Alemtuzumab clearance depends on the actual dose administered, the total number of CD52 binding sites, the hepatic function, and the monocyte–macrophage system [8]. Today's rapidly evolving era of newer RIC regimens for nonmalignant disorders call for well-done pharmacokinetic studies to identify optimum timing and dosage that can have significant therapeutic implications for these patients.

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