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Evaluation of significant clinical signs and therapy characteristics in patients with CMV infection after allogeneic stem cell transplantation

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Abstract

Background: Cytomegalovirus (CMV) reactivation is among the most important complications that determine morbidity and mortality in recipients of allogeneic hematopoietic stem cell transplants (HSCT).

Objective: The aim of our study was to evaluate significant clinical parameters and treatment compounds influencing CMV reactivation.

Material and methods: Samples of peripheral blood and bone marrow were received from 96 patients after allo-HSCT (59 matched unrelated, 32 related and 7 haploidentical donors). Nonmyeloablative conditioning was used in 61 cases, and myeloablative in 35 cases. All patients transplanted from unrelated or haploidentical donors received antithymocyte globulin (ATG). Quantitative RT-PCR was used to evaluate viral load either in blood/bone marrow or in plasma.

Results: CMV-reactivation was observed in 85% of patients in early, and in 15% of patients in the late post-transplant period. The reactivation rate does not depend on the conditioning regimen intensity, but was significantly higher in patients receiving HSCT from unrelated than from matched related donors (75% vs. 40%). Prophylaxis of graft-versus-host disease with ATG was associated with an increased risk of reactivation (70% vs. 34%) and higher viral load. Lower reactivation rates were observed in both CMV IgG-negative donor and recipient pairs (only 18%).

Conclusion: CMV-reactivation in allogeneic HSCT recipients was more frequent in the early post-transplant period and depends on donor compatibility, the CMV serostatus of donor and recipient, and ATG use. These factors should be taken into account while planning the monitoring and therapy for CMV infection.

Keywords: allogeneic HSCT, infectious complications, CMV

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