Study of HCMV in allogenic and autolous immature microorganisms.

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Editorial Note

Human Cytomegalovirus (HCMV) is the most important viral pathogen in people undergoing bone marrow transplantation (BMT). By HCMV detection in the early stages, it is possible to save their lives with immediate and timely treatment. The aim of this study was to investigate the status of HCMV by real-time PCR method in BMT patients in Kermanshah, west of Iran. Up to 120 patients who underwent BMT, 38 allogeneic cases and 82 autologous cases, the monitoring HCMV was performed by ELISA serology test before transplantation. They were followed up after 100-day transplantation by real-time PCR for HCMV detection in blood samples. Preemptive therapy was performed with Ganciclovir and Foscarnet when the viral load was >200 HCMV DNA copies/ml. Despite preemptive therapy, recurrent of infection was less than one month. HCMV were recurrent by five in allogenic more than autologous transplants. HCMV recurrence occurred in five patients with allogeneic transplantation. Twelve patients, with either allogeneic or autologous transplantation (83%) with the virus load were >1000 copies/ml, showed HCMV-related symptoms. Three patients died, two due to HCMV-related pneumonia and the other to a fungal infection.

Real time PCR may be a useful for not only quantification but also monitoring of HCMV reactivation and can guide to the more efficient HCMV preemptive therapy in BMT recipients.

Cytomegalovirus (HCMV) is a member of the herpes virus family. This virus can affect various cells of the host body including endothelial, epithelial, and hematopoietic cell Antibodies against HCMV have been identified in the serum of 80% of healthy adults, indicating previous infection and the latency of the virus which could be reactivated In transplant recipients, suppression of the immune system triggers the HCMV reactivation by both primary infections (i. e infection in those whom are non-detectable or sero-negative before transplantation) or secondary infections (i. e infections due to the activation of a latent infection) Primary infection may cause different morbidities and even mortalities in severe forms. It has greater frequency, clinical manifestations and recurrence than secondary infections Super infection by HCMV occurs when a seropositive recipient (R^+) receives cells from a seropositive donor (D^+), So the origin of HCMV is reactivated after transplantation Secondary and super infections can lead to clinical manifestations of HCMV in approximately 30% of stem cell transplant recipients.

Such patients usually show milder symptoms than those by primary infections Regardless of the previous seropositive status of the donor or recipient, HCMV reactivation occurs in 30 to 50% of bone marrow allogeneic recipients that may lead to the progression of sever HCMV However, in D+/R+ patients HCMV-related diseases are developed approximately two more time higher than D+/R- patients that may be due to coincidence of active secondary and super infections after transplantation

HCMV infection is usually seen in the late postoperative period. The onset of HCMV disease is often reported in a period of about 28 to 72 days after transplantation that involves several organs including the lungs and intestines HCMV is associated with various complications such as pneumonia, gastrointestinal infections, central nervous system infections, and retinitis as well as many other miscellaneous disorders such as cystitis, nephritis, myocarditis, and pancreatitis.

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