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Parole chiave: Adenovirus, Hematopoietic Stem Cell Transplantation, Thalassemia, Sickle Cell Anaemia

Post transplantation adenovirus infection in thalassemic and sickle cell anemia patients

Abdullah Alhasan¹, Antonella Isgro², Cecilia Alfieri², Michela Ribersani², Marco Marziali², Katia Paciaroni², Gioia De Angelis², Marco Ciotti¹, Javid Gaziev²

¹Laboratory of Clinical Microbiology and Virology, Policlinic of University of Rome "Tor Vergata"; ²International Center for transplantation in Thalassemia and Sickle Cell Anemia, Mediterranean; abdullah.alhasan@students.uniroma2.eu

Background: Adenovirus infection is a recognized complication following haematopoietic stem cell transplantation. Diagnosis of disease is typically made by combining clinical features with detection of viral DNA using polymerase chain reaction (PCR). Infection is often asymptomatic but may result in end-organ disease including colitis, pneumonitis, hepatitis, nephritis, haemorrhagic cystitis, conjunctivitis, encephalitis or multi-site disease following viraemic spread.

Study design: A cohort of 160 patients affected by thalassemia (n= 115, 1.4 to 22 years old) or sickle cell disease (SCA) (n= 45, 2 to 17 years old) underwent hematopoietic cell transplantation from HLA-matched siblings or alternative donors between 2010-2017.

Results: 15 out of 160 patients (4 SCA and 11 Thal) had a reactivation of adenovirus infection in the blood (9.3%). 5/15 received an allograft from an unrelated donor, 4/15 from HLA identical, 5/15 from haploidentical donor and 1/15 from phenodentical donor. Eleven out of 15 patients had disseminated adenovirus infection. Median post-transplant time to detection of viraemia in SCA patients was 52.25 days (range 32-89 days) while for thalassemia patients it was 50.7 days (range 4-193 days). Median peak viral load was 164,766 copies/mL (range 60-2,820,000 copies/ml).

Four patients received cidofovir and showed a decrease in viral load. Five patients with disseminated Adenovirus infection died, due to GVHD-related complications.

Conclusions: Disseminated adenovirus infection is uncommon in transplant patients and uncertainties remain surrounding effective treatment. Patients after MUD or haploidentical transplant have major risk for adenovirus infection. In our cohort, cidofovir has shown promise in treatment of adenoviral infection.