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Quantitative analysis of *Human herpes virus 6* DNA in patients treated for acute leukemia

Radwa Hussein Mohamed Ghoraba, Ghada F Helaly, Nadia E Zaki and Dalia E Metwally
Alexandria University, Egypt

Viral infections are important causes of morbidity and mortality for patients with a hematological malignancy, but the true incidence and consequences of viral infections for these patients who undergo conventional non transplant therapy are inadequately defined. The significance of estimating the prevalence of HHV-6 in cancer patients does not actually get its importance from morbidity of the disease itself but from further interference of the outcome in bone marrow transplant patients; where it may be associated with serious life threatening complications. Thus, screening of patients with hematological malignancies for HHV-6 might be considered mandatory. The aim of this study was to evaluate a possible association between HHV-6 infection and acute leukemia in adults after receiving chemotherapy treatment for acute leukemia. The patients were divided into two main groups according to the type of leukemia: Group I; 36 patients with newly diagnosed acute myeloid leukemia (AML) and group II; 27 patients with newly diagnosed acute lymphoblastic leukemia (ALL); 21 patients with B-ALL and six patients with T-ALL. All 63 studied adult patients with newly diagnosed acute leukemia were subjected to history taking, complete clinical examination for the presence of organomegaly and routine laboratory investigations. Peripheral blood samples were collected from all patients for quantitative determination of HHV6 viral load by Taqman probe technique (real time PCR) at day 0 and day 100 of induction chemotherapy. The results argued against an etiological relationship between HHV-6 infection and the genesis of acute leukemia in adults, however, it supports the hypothesis of viral latency and the possibility of virus reactivation in immunocompromised hosts. The possible presence of HHV-6 as an associated or a putative causative agent in leukemia should however be considered. Recommendations include screening of patients with hematological malignancies for HHV-6 might be considered among the routine initial laboratory work-up.

Recent Publications

1. Agut H, Bonnafous P and Gautheret-Dejean A (2015) Laboratory and clinical aspects of human herpesvirus 6 infections. Clin Microbiol Rev 28(2):313-35.
2. Pellett P E, Ablashi D V, Ambros P F, Agut H, Caserta M T, Descamps V, et al. (2012) Chromosomally integrated human herpesvirus 6: questions and answers. Rev Med Virol 22(3):144-55.
3. Becerra A, Gibson L, Stern L J and Calvo-Calle J M (2014) Immune response to HHV-6 and implications for immunotherapy. Curr Opin Virol 9:154-61.
4. Yip C C Y, Sridhar S, Cheng A K W, Fung A M Y, Cheng V C C, Chan K H, et al. (2017) Comparative evaluation of a laboratory developed real-time PCR assay and the RealStar® HHV-6 PCR Kit for quantitative detection of human herpesvirus 6. J Virol Methods 2017; 246:112-6.
5. Inazawa N, Hori T, Yamamoto M, Hatakeyama N, Yoto Y, Nojima M, et al. (2016) HHV-6 encephalitis may complicate the early phase after allogeneic hematopoietic stem cell transplantation: Detection by qualitative multiplex PCR and subsequent quantitative real-time PCR. J Med Virol. 88(2):319-23.

Biography

Radwa Hussein Mohamed Ghoraba is a Pharmacist, graduated from Faculty of Pharmacy and Drug Manufacturing, Pharos University, Alexandria, Egypt in 2012. She completed her Master's degree in Diagnostic and Molecular Microbiology at Medical Research Institute (MRI), Alexandria University in 2017. Her involvement in research has given her first-hand exposure to the process of active scientific research, resulted in incredible research experiences, and instilled in her a passion for science and exploration. She is interested in improving public health through research.

rhussein14@yahoo.com