ORT.17 - Investigation of active human herpesviruses 6 and 7 infection before and after renal transplantation

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Introduction: The survival of patients after renal transplantation has been evaluated frequently in the last decades. The frequency of acute rejection has decreased, while infectious disease concerns have increased and remain responsible for approximately 15% to 20% of death cases. In pediatric or adult renal transplant recipients, Human Herpesvirus 6 (HHV-6A / B) and Human Herpesvirus 7 (HHV-7), also called Roseolovirus, often react after transplantation. The reactivation Roseolovirus in immunocompromised patients has been associated with fever, rash, encephalitis and bone marrow suppression. Like other herpesviruses, the Roseolovirus persist in the host after primary infection. Defining the relationship between viral replication and disease is still necessary, due to the small number of reported cases and the variation in diagnostic methodologies used to detect viral replication. Besides that, there is few information about prevalence, excretion of these viruses. In a previous study was reported that the latency, persistence of Roseolovirus can occur in the salivary glands, however it is not yet known about the replication of these viruses at that site. Moreover, Roseoloviruses are excreted in saliva throughout life, including in healthy patients.

Objective: The aim of this study was to evaluate the active Roseolovirus infection in saliva samples from transplant recipients.

Methodology: The monitoring of the viral load and detection mRNA of 32 patients was performed in three different moments: in the first, before the transplant; in the second of 15 to 20 days and in the third of 40 to 50 days after the transplant. The detection and quantification was performed by duplex qPCR with a synthetic standard curve, besides that, a nRT-PCR was performed to mRNA detection.

Results: The viral load was high during the three moments, demonstrating a mean of 6,51E+05 copies/ mL and 1,93E+06 copies/ mL for HHV-6 e HHV-7 respectively. Furthermore, we found Roseolovirus DNA simultaneously in 26 (81%), 28 (87%) and 27 (84%) in the three different transplant moments respectively. The HHV-6-mRNA was found in one (3%), three (9%) and five (15%), as well as, the HHV-7-mRNA was found in eight (25%), five (15%) and 24 (75%) respectively in the three different moments of transplant. The results showed active HHV-6 (P=0,012) and HHV-7 (P>0,001) infection increase after transplant.

Conclusion: These results suggest that saliva is an important site of active and persistent infection by Roseolovirus, especially in immunosuppressed patients. In addition, according to the results of previous studies, the use of only polymerase chain reaction (PCR) to detect DNA is controversial because of the latency characteristic of these viruses. Therefore, these results highlight the importance of investigating the excretion of these viruses and of detecting replicative targets, especially in sites of high prevalence and ease of transmission such as saliva.

Keywords: Herpesvirus; mRNA; Renal Transplantation