viral load (<16,000 copies/10^5); Group 3 (n = 4) stable, high viral load (>16,000 copies/10^5); Group 4 (n = 4) history of PTLD, no detectable/low viral load. Flow cytometric analysis with HLA-A2 or -B8 tetramer (TMR) probes was performed on peripheral blood. The polarization of EBV-specific CD8+T cells (IFN-g/IL-5/IL-10) was assessed by ELISPOT or ELISA.

Results: Overall, the "lytic" specific CD8+T cells were more frequent than the "latent" ones and displayed distinct memory phenotypes (Effector Memory vs Central Memory). In addition, higher EBV loads triggered higher frequencies of TMR+ cells (G2 = G3 $\gg$ G1), while patients with history of PTLD (G4) maintained high TMR+ frequencies. Interestingly, although patients in groups G2, G3 and G4 had high frequencies of "lytic" TMR+ cells (1.3±2% vs 2.3±3.4% vs 1.1±0.9%), G2 and G4 exhibited higher frequencies of IFN-γ producing cells (30±30 and 32±23 spots/10^5), suggesting functional EBV-memory CD8+T cells, while G3 displayed impaired IFN-γ (19±31 spots/10^5), indicative of functional exhaustion. Although EBV stimulation triggered preponderantly IFN-γ, the IFN-γ/IL-5 ratio was lower in all patients (2.5:1) as compared to adult controls (5:1) yet another unique feature of immune responses in pediatric patients. CD8+T cells in G3 produced higher levels of IL-10 as compared to other groups.

Conclusion: These results demonstrate significant differences in EBV-specific memory CD8+T cells from pediatric HTx patients based on their EBV clinical/viral load status. The functional impairment of CD8+T cells from G3 patients might be either a direct result of chronic EBV challenge, or might be due to biased polarization (intermediate IL-5) or to Treg development (high IL-10).

25
Chronic Rhinoviral Infection in Lung Transplant Recipients

C. Deffernez, P.M. Soccal, J-D. Aubert, J-C. Pache, T. Rochat, J. Garbino, W. Wunderli, P. Meylan, S. Yerly, L. Perrin, I. Letovanec, L. Nicod, C. Tapparel, L. Kaiser*. *Central Laboratory of Virology, Division of Infectious Diseases, Department of Internal Medicine, University Hospitals of Geneva Rue Micheli-du-Crest 24, 1211 Geneva 14, Switzerland*

Background: *Rhinovirus* is the most frequent respiratory virus circulating in the community. Lung transplant recipients with viral respiratory tract infections are at risk of complications and protracted diseases.

Objective: To describe lung transplant recipients chronically infected by *rhinovirus*.

Methods: We first identified an index case and confirmed by sequencing viral isolates that he was chronically infected by *rhinovirus*. Then we conducted a prospective study to assess the incidence and the potential clinical impact of chronic rhinoviral infections in a cohort of 68 lung transplant recipients. Sequence analysis of viral isolates (all cases) as well immunochemistry on lung biopsies (in one case) have been performed.

Results: We describe 3 lung transplant recipients chronically infected by *rhinovirus* over a period of one year. *Rhinovirus* was mainly identified by RT-PCR but full virions were also isolated repeatedly in one case. The persistence of a unique strain was confirmed by the analysis of the 5′NCR and VP1 genes sequences and ruled-out re-infections. All cases presented lower respiratory symptoms as well as graft dysfunctions, 2 had repeated acute rejections episodes, and 2 died. In one case that failed to produce neutralizing antibodies we also showed the presence of *rhinovirus* within the lower respiratory tract parenchyma. Over a period of 19 months rhinoviral infections, screened in bronchoalveolar lavages, were documented in approximately 15% of cases; one fifth of them presented a persistent infection.

Conclusions: In lung transplant recipients with graft dysfunction we have documented that rhinoviral infection can be persistent. *Rhinovirus* was detected in the lung parenchyma in one case. Our investigation suggests that *rhinovirus* contributed to the graft dysfunctions.

26
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27
Clinical Features Associated with *Coronavirus* Infections: A Prospective and Hospital-based Study

J. Garbino*, S. Crespo, J-D. Aubert, T. Rochat, B. Ninet, C. Deffernez, W. Wunderli, P.M. Soccal, L. Kaiser. *University Hospitals of Geneva, Geneva, Switzerland*

Background: Human-*coronaviruses* (HCoV) are the most frequent cause of upper respiratory infections after rhinoviruses. HCoV are also associated with lower respiratory tract symptoms and protracted disease in subjects at risk. Until recently only HCoV-OC43 and 229E were known in humans. The impact of the recently discovered HCoV-NL63 and HKU1 in hospitalized adults needs to be established.