On viral infections in lung transplant recipients

Akademisk avhandling

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On viral infections in lung transplant recipients

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ABSTRACT
Viral infections are the most common type of infection in humans. Lung transplantation (LTx) recipients are exceptionally susceptible to infections in general, and the short- and long-term effects tend to be more detrimental. It is important to better determine the effects and outcomes of viral infections to improve survival and long-term quality of life after LTx. The following hypotheses were tested: that early viral respiratory tract infection (VRTI) has long-term effect on outcome after lung transplantation (Papers I and III); that hepatitis E (HEV) antibodies are common in Swedish lung transplant recipients (Paper II); and that torque teno virus (TTV) and Epstein-Barr virus (EBV) may be potential biomarkers for monitoring of the net state of immunosuppression after LTx.

Methods: Bronchiolar lavage (BAL) samples from a retrospective cohort (Paper I) and from a prospective cohort, together with nasopharyngeal (NPH) samples (Paper III) were analyzed with a multiplex PCR for respiratory viruses. Prospectively collected blood samples were analyzed for HEV antibodies using two ELISA methods (Paper II) and for TTV and EBV using PCR (paper IV).

Results: VRTI during the first year was associated with a shortened time to chronic rejection but not to death in both the retrospective cohort and the prospective cohort (Paper I and III). Thirteen per cent of the patients had anti-HEV antibodies during follow-up. No association between TTV DNA nor EBV DNA and immunosuppression-related events could be found.

Conclusions: VRTI during the first year is an independent risk factor for chronic rejection. HEV antibodies are equally common in the LTx population and the general Swedish population. EBV DNA and TTV DNA have limited usefulness as biomarkers for monitoring of immunosuppression after lung transplantation.

Keywords: Lung transplantation, Respiratory infection, Respiratory virus, Hepatitis E, Torque teno virus, Epstein Barr virus, Chronic lung allograft dysfunction.