

## **Abstract**

### **Infectious complications after kidney transplantation**

In the general part of this work, the most common and typical infectious complications in renal transplant recipients are reviewed. The practical part presents results of our research on prevention of the most common infection in renal transplant recipients, cytomegalovirus infection.

Globally, infection belongs amongst the main causes of morbidity of solid organ recipients and is the second leading cause of mortality in patients with a functioning kidney graft. In the first year post kidney transplant, approximately one half of recipients undergo a clinically apparent infectious complication and 20% of patients are hospitalized due to infection. Cytomegalovirus (CMV) is the most common viral infection in kidney transplant patients and its occurrence is associated with serious negative consequences for both kidney and patient survival. Prevention of CMV is essential in renal transplant recipients. Valganciclovir, due to its efficacy and good bioavailability, is the most commonly used antiviral agent used in CMV prophylaxis. The only currently recommended alternative for the prevention of CMV in patients undergoing renal transplantation is valacyclovir. So far, studies comparing valacyclovir and valganciclovir for CMV prophylaxis in renal transplant recipients in a head to head manner were lacking.

In this work, I present a comparison of valganciclovir and valacyclovir for CMV prophylaxis in patients after renal transplantation focusing on efficiency, safety and economic aspect. A prospective randomized study conducted at the nephrology ward of the University Hospital in Pilsen showed that valganciclovir is not superior in CMV prevention as compared with valacyclovir in renal transplant recipients. Despite comparable efficacy in preventing CMV, the choice of antiviral agent may be associated with differences not only in the spectrum of side effects, but also in important clinical parameters, such are, with valganciclovir use, reduction of the biopsy proven acute rejection incidence on one hand, but increasing numbers of low-grade BKV viremia on the other hand. At the same time, we showed that valacyclovir prophylaxis in renal transplant recipients is a cost-effective strategy as compared to prophylaxis with valganciclovir.