

## **A model for optimizing comprehensive care for people with HIV infection**

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### **Abstract**

**Introduction:** Today, the disease caused by HIV is considered to be chronic, treatable, with a length and quality of life comparable to that of the general population. Comprehensive care for people living with HIV (PLWH) consists of the correct indication of antiretroviral drugs (ART), optimal motivation, regular use of drugs, passing check-ups and submitting to all the recommendations of the attending physician, which is collectively referred to as adherence.

**Aims and objectives:** Assessment of adherence to ART treatment in a population of PLWH. Improving the awareness of PLWH, drawing attention to the risk of developing HIV resistance and subsequent treatment failure. **Patient group and follow-up methods:** The basic group consisted of PLWH, long-term follow-up at the HIV center of the Faculty Hospital Plzeň. Adherence was assessed by ART levels, determined in urine by high pressure liquid chromatography (HPLC), in relation to clinical data, viral load (HIV RNA, i.e. VL) and absolute CD4<sup>+</sup> and CD8<sup>+</sup> T cell counts. To assess mental and physical status, the modified SF 36 questionnaire was used to measure social ties, education and ability to relax. Statistical evaluation was performed using SAS, V. 9.4 and Statistics software.

**Research results:** From a group of 151 PLWH, 18 (11.9%) subjects with zero levels and 20 (13.2%) subjects with ART levels up to 10 mg/L were selected. They were followed for 6-12 months. A statistically significantly lower viral load was demonstrated in adherent persons at the time of the test for the presence of ART in the urine. CD4<sup>+</sup> values in adherent persons were, as expected, higher, but similar to CD8<sup>+</sup> T lymphocyte values, statistical significance was not demonstrated. A questionnaire survey assessed subjective factors influencing the degree of adherence. PLWH consider important: quality care with instilling trust, low risk of developing opportunistic infections, self-sufficiency, quality of sleep, managing leisure activities and good family relationships. Quality of life and satisfaction in the monitored areas were higher in adherent PLWH. The development of resistance against some groups of ART, due to non-adherence, cannot be completely excluded in 11 persons.

**Conclusions:** Non-adherence may be the cause of the development of HIV resistance and treatment failure on the part of the patient. PLWH with zero and low urinary nucleoside levels were repeatedly instructed about the need for regular, sustained medication use. Regular checks with a laboratory examination serve to detect early the emergence of resistance and some side effects of the treatment, which are initially only detectable in the laboratory.

**Keywords:** adherence; antiretroviral; HIV; psychosocial; treatment; viral load