Correlation between regular care of people with HIV and the presence of some selected opportunistic diseases

In recent years, the number of people acquiring human immunodeficiency virus (HIV) in Poland has increased and currently is exceeding 2000 cases per year. An ongoing diagnostic challenge is the late HIV diagnosis. Over 54.2% of new HIV cases in Europe are diagnosed at an advanced stage when the patient has already developed the acquired immunodeficiency syndrome (AIDS). This syndrome is characterized by the presence of AIDS-defining diseases which consist of a selection of opportunistic diseases.

The usage of antiretroviral therapy (ART) has decreased the number of opportunistic diseases among people with HIV. But still 25% of people with HIV in the world do not have access to this treatment. Another important issue is the interruption of ART which might lead to a decrease in the number of CD4+ T lymphocytes, increase the risk of developing opportunistic diseases and promote chronic inflammation. The latter predisposes to metabolic diseases and to frailty syndrome.

Frailty syndrome is more frequent and appears at an earlier age in people with HIV in comparison to those without HIV. Because of that, since 2022, the European AIDS Clinical Society (EACS) recommends annual screening for frailty of all people with HIV above 50 years of age. Pre-frailty is a state of increased risk of developing frailty.

The aim of this dissertation was to assess the correlation between regular care of people with HIV and the presence of some selected opportunistic diseases. This work consists of 3 studies.

The study entitled *Comparison between patients who interrupted ART and those with late HIV diagnosis* assessed risk factors and health consequences of ART interruption. Laboratory results (including CD4+ T lymphocyte cell count) and medical records of 215 patients were analysed. The information on presence of opportunistic diseases and the addiction to psychoactive drugs was gathered. Only candida of the gastrointestinal tract was statistically more frequent among those who were diagnosed late with HIV in comparison to those who interrupted ART ($p=0.009$). All the other opportunistic diseases had a similar prevalence in both groups. Active drug usage was more common in patients who interrupted ART than in the late HIV diagnosis group ($p=0.001$).

The second study included in this dissertation, entitled *Screening and prevention of HPV-related anogenital cancers in women living with HIV in Europe: results from a systematic review*, summarized available data on methods used to diagnose cervical and anal

cancer among women with HIV in Europe. In the 34 articles included in this study, cervical cancer was diagnosed in 0.7% of women with an abnormal cytology result. Based on the available literature, women with a lymphocyte T CD4+ count below 200 cells/μl were found to be more at risk of having cervical cancer. In the analysed studies, a low percentage of women were screened for anal cancer. The HPV vaccination status was unknown in the majority (81.6%) of analysed women.

In the *Frailty and prefrailty in people living with HIV, with focus on women living with HIV* review, a summary of the newest available literature about frailty in people with HIV was conducted. The article focused on the cardiovascular diseases and depression as risk factors of frailty among women with HIV.

The presented series of studies suggests that people interrupting ART may develop the same opportunistic diseases as those with late HIV diagnosis who have not yet started treatment. People with addictions to psychoactive substances are more at risk of interrupting ART and require additional help in maintaining adherence to this treatment. Moreover, this work indicates and urgent need to screen women with HIV, and especially those with a T CD4+ cell count <200 cells/μl, for HPV, cervical cancer and anal cancer. Early diagnosis and treatment of cardiovascular diseases and depression are crucial elements of care of people with HIV, and especially women, in order to decrease the risk of frailty.