HIV/AIDS: State of the Art

Annamari Ranki
Department of Dermatology, Helsinki University Central Hospital, Helsinki, Finland.
E-mail: annamari.ranki@hus.fi

Background

In the early 1980's a new fatal immune deficiency disease, AIDS (acquired immune deficiency syndrome) emerged among the adult sexually active population, especially among men who have sex with men (MSM) in the US. In 2008, the Nobel Prize in Medicine was awarded to the French virologists Luc Montagnier and Francoise Barre-Sinoussi for their discovery of the human immunodeficiency virus (HIV) as the cause of AIDS. I still remember the first AIDS meeting in December 1983 in New York, when both of these colleagues presented their first observations in a meeting where practically every speaker had a different theory of the causative agent. We now know that HIV causes a life-long infection, slowly destroying the body's immune defenses but today viral multiplication can be blocked with highly active anti-retroviral therapy (HAART). Consequently, an infected individual can lead normal life. However, there is no permanent cure.

Present situation

HIV infection is one of the most urgent threats to global health. The number of HIV-infected individuals worldwide exceeds 34 million. Each year around 2.7 million more people become infected with HIV and 1.8 million die of AIDS. The worst affected region is sub-Saharan Africa, where in a few countries more than one in five adults is infected with HIV. Currently, the epidemic is spreading most rapidly in Eastern Europe and Central Asia. In western Europe the HIV epidemic has stabilized to around 55 new cases/million inhabitants. Baltic countries and Russia experienced a rapidly growing epidemic, especially among young and intravenous drug abusers (IVDU); since 1995 there is 349 new cases/million inhabitants, mostly in young individuals and IVDUs. A recent obvious increase among MSM in Europe may reflect over-confidence in HAART. A concomitant, untreated sexually transmitted disease can increase the risk of HIV transmission tenfold. Luckily enough, infant HIV infections are a minimal problem in Europe.

Patients with an early HIV infection often do not know that they are infected and only about half of those infected develop a primary syndrome. The primary syndrome is often misdiagnosed as transient "viral infection". Typically, HIV-infected individuals often seek dermatologic help before knowing they are infected. Thus, one should screen for HIV infection always when a common skin disease occurs with atypical presentation or does not respond to standard therapy. Also, uncommon or opportunistic skin infections may occur. HAART therapy suppresses many of the cutaneous manifestations of HIV and rapidly cures e.g. severe psoriasis in most HIV-infected individuals. Typically, it has made Kaposi's sarcoma – once a feared AIDS marker – very rare today.

Diagnosis and treatment

As of today, HIV is diagnosed with a combined antibody and antigen test. If there is strong reason to suspect transmission, monitoring after a negative test should last up to 3 months. A quantitative PCR test is used to monitor the effect of antiviral therapy but is not suitable for screening purposes. Maternal testing for HIV virus is recommended, since infection of the child can be efficiently prevented with therapy during pregnancy.

Treatment of HIV infection is a true success story despite there is no permanent cure. When started early, HAART prevents disease progression and controls most symptoms. The mean annual cost is 15,000 €/patient. The current concept is to treat early, but patient compliance is crucial to avoid developing resistant viruses. If not treated with HAART, the median survival time is around a decade; if treated, the life expectancy is the same as for a patient successfully treated for cancer. HAART generally involves 3 or more antiviral agents administered in a variety of combinations and available as only 1 or 2 tablets per day. The treatment is life-long and not completely without side effects, but most individuals tolerate the treatment well. Sometimes severe skin reactions may occur with certain drugs and dermatological expertise is needed. As an example of the benefits of HAART, some of my original patients since over 20 years, are now happily retired and in good health. However, the problems of HIV therapy are today more of the long-term metabolic type.

Since HIV infection is a notifiable disease in most European countries, knowingly transmitting or exposing one's partner to HIV infection is criminalized in most European countries. A 4-week post-exposure prophylaxis is recommended after unprotected sex with an HIV-infected partner or after an occupational needle stick injury. National guidelines are available. HIV vaccine development has been cumbersome but it continues. Here, I would like to acknowledge the memorable joint efforts with Swedish colleagues like Professor emeritus Britta Wahren's group, and although a preventive vaccine is not likely in the near future, candidate vaccines with therapeutic effect do exist.

Conclusion

Having lived through the frightening history of AIDS and HIV infection, I must confess I feel most happy, with my whole heart, when still seeing my "old " patients once or twice a year – in full health and planning for their future.