

HIV/AIDS Epidemiology

Epidemiology, is the study of the distribution and determinants of disease in a population. It attempts to link human health effects to a specified cause.

TRANSMISSION:

HIV is present in body fluids (blood, semen, saliva, breast milk). The risk of contracting the disease/infection after exposure, is dependent on the viral load (low or high), type and volume of body fluid. Transmission can be sexual, vertical (mother-to-child transmission) or parenteral (injection drug users, occupational injury, blood or blood recipients). Transmission risk after a single exposure (>90%) is highest for blood or blood products. In developing countries, vertical transmission risk is quite high ~40%, it has been reduced to over 90% in developed countries due to HAART (Highly active antiretroviral therapy) or combination of zidovudine with elective Caesarean after prenatal screening of mothers for HIV infection.

In 2002, there were about 42 million people living with HIV/AIDS, with >5 million new infections and 3 million deaths. Sub-Saharan Africa has the largest number of infections (>28 million), followed by Southern and Southeast Asia, Latin America, North America and Western Europe seems to have the least (730,000). In the USA and northern Europe, the epidemic has been in homosexual men, whereas in eastern Europe, Vietnam and Malaysia, north-east India and China, the incidence has been greatest in drug users and in Africa, South America and most of south-east Asia, the dominant route of transmission is vertical or heterosexual.

AIDS cannot be cured at the moment. It can only be managed or prevented.

MANAGEMENT:

HAART-The aim is to maintain/restore immunologic health (CD4 COUNT > 200 cells/mm³), decrease the viral load to an undetectable level, improve quality of life, reduce HIV related morbidity and mortality and reduce transmission **BUT IT CANNOT COMPLETELY REMOVE THE VIRUS FROM THE BODY!**

three major classes of drugs are available for use:-

- Nucleoside reverse transcriptase inhibitors (NRTIs)
- Non-nucleoside reverse transcriptase inhibitors (NNRTIs)
- Protease inhibitors (PIs)

PREVENTION:

VERTICAL TRANSMISSION: zidovudine or nevirapine (to mother and baby) in combination with elective Caesarian. HIV can be transmitted via breastfeeding, therefore, replacement feeding is recommended

SEXUAL TRANSMISSION[1]

- Sex education
- Use of condoms
- Needle exchange programmes for intravenous drug users

REFERENCES:

lecture notes on infectious diseases, sixth edition Lippincott's Illustrated Review Microbiology 2nd edition [1]
<http://www1.lf1.cuni.cz/~hrozs/hiveng1.htm#Zahlavi>