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Let us talk about HIV/AIDS



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Let us talk about HIV/AIDS

Slide 1

Let us talk about HIV/AIDS – Human Immune Deficiency Virus / Acquired Immune Deficiency Syndrome.

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HIV has infected 33.4 million persons as of December 1996. Though the infection was first detected in USA, in 1981 among gay men, today 90% of infections are in the developing countries for e.g. 22.5 million in Sub-Saharan Africa, which is worst affected. The next is South and Southeast Asia with 6.5 million. Only there are 15,000 new infections and 90% occur in developing countries. 40% of all new infections occur in women showing that the disease has spread to the heterosexual community, especially in the continents of Africa and Asia.

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HIV seropositive persons were first detected in India, in 1986 by a team from Madras Medical College and CMC Vellore, among women in prostitution in Chennai. The first case of AIDS was diagnosed, in 1987 in Mumbai, in a person who had received blood for Cardiac Surgery abroad. Since then the infection is gradually spreading to people in all walks of life and among urban and rural populations affecting men, women and children.

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Sero surveillance studies for HIV show that in February 1985, 5 per 1000 adults in India were HIV positive (i.e. 0.5%). Within 2 years, by 1997, it has risen to 21.15 per 1000 (i.e. 2%) adults in

India. This makes India the country with the largest number of HIV infected persons.

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HIV is the virus, which causes AIDS. HIV is a slow virus and a person who is infected with HIV (HIV positive) can take anywhere from 3 years to 15 years to progress to AIDS. The virus attacks the immune system of the person. It gets attached to the CD₄ receptor sites of the T₄ lymphocyte (a type of white cell, which is essential for immune response). The viral RNA is then converted to Viral DNA by an enzyme called reverse transcriptase. The pro viral DNA is then integrated into the host cell DNA. The T₄ lymphocyte is then said to be hijacked by HIV. Now, instead of helping the person with immune response, the cell starts to manufacture new HIV particles, which bud out of the cell. These in turn attack fresh T₄ lymphocyte. Gradually the T₄ cell count drops to such low levels that the person has severe immune deficiency and acquires various infections like TB, thrush and diarrhoea. This end stage is known as AIDS.

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White cells are our body soldiers. They give us immunity against germs. Normally when a germ enters our body the white cell attacks it and kills it and hence we enjoy a healthy life inspite of the fact that we live in a world full of germs. This is God's gift to us. But HIV attacks these very body soldiers and kill them ultimately. The numbers of these white cells decrease gradually making the person immune deficient. Hence when germs like those of TB or diarrhoea attacks the immune deficient person, s/he develops many infections at the same time. This end stage is called AIDS.

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HIV is transmitted by three ways only. The most common is through unprotected penetrative sex. The highest risk is unprotected anal intercourse, followed by unprotected vaginal sex and then unprotected oral sex. But whatever risk it carries, if one were to have penetrative sex it is always sensible to have safe sex.

During transfusions or organ transplant, artificial insemination, etc the donor should be counselled, consent taken and then screened for HIV, HBV, HCV, VDRL and other blood borne infections.

HIV can also be transmitted from the mother to her foetus through blood during the antenatal period or during delivery (when passing through the birth canal). Breast-feeding enhances the risk of transmitting the infection by upto 20%.

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73% of infections in India is through heterosexual transmission i.e. Male → Female or Female → Male. About 8% is among recipients of contaminated blood and blood products. The Government of India had passed an order in 1989 that all blood used for transfusion or preparation of blood products should be checked for HIV before use. 8% occurs among intravenous drug users due to sharing of needles and syringes. A small percentage occurs among homosexuals and spouses/partners of infected individuals.

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Age distribution of HIV/AIDS cases show that persons between 15-45 years make up almost 90% of the infected group. This is the sexually most active age group. This also happens to be the economically most productive age group. This shows that HIV could cause a great socio-economic disaster in a few years as is seen in certain countries of Africa.

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About 5% of HIV is acquired through sex. STDs act as cofactors in acquiring HIV. These can be broadly divided into ulcer disease and those which cause only discharge. These ulcers help HIV to enter the blood stream (i.e. it acts as gateway into the body blood stream). Hence if we treat all STDs as early as possible, it would reduce the spread of HIV in the community. Moreover most of the STDs have signs and symptoms. They are curable unlike HIV/AIDS. In women, signs and symptoms for STDs are fewer.

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Currently there is a total of 333 million people with STDs. About half of these happen to be in South and Southeast Asia.

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The efficiency of transmission varies according to the route of infection. The least efficiency is the sexual route, which 0.1% to 1%. This means there is 1 in 100 chance of acquiring HIV by having unprotected penetrative sex with an infected partner. Women are more vulnerable to HIV than men. In the case of blood transfusion with HIV contaminated blood the chances are very high (more than 90%). Whereas in a needle stick injury the chances are 3 or 4 per thousand. Transmission from mother to child is between 20% — 42%. However, this can be reduced drastically by giving the mother antiretroviral drugs during the last trimester of pregnancy and by counseling her on breast-feeding.

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It is comforting to note that HIV is not transmitted by casual contact or day-to-day activity like shaking hands, hugging, eating or working together nor through toilets. Mosquitoes and bugs do not transmit HIV. Hence, we do not have to worry about taking care of persons with HIV disease. The virus is present only in blood, semen, vaginal fluid and breast milk in doses sufficient to infect an individual.

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It is difficult to visually recognize a person with HIV, as they look healthy and normal for a very long period, perhaps even upto 10 years. Hence we would never know if the persons working with us, or travelling with us are carrying the virus. We don't however, need to worry about this, as one cannot acquire infections by casual contacts. In this slide, it is difficult to recognize who is infected in this group.

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From the day of infection, the person progresses over a period of years to finally develop AIDS. About 3 months after the infection, the person develops a sero conversion illness. During this period the patient develops a low-grade fever, skin rash and enlargement of few lymph nodes. It could be mistaken for a more common viral infection, like flu. With or without treatment, the person recovers from this primary infection within a couple of weeks. Then follows a very long latency period of years during which time the person looks and feels healthy and normal. This period varies with different persons. Gradually the T₄ lymphocytes (white cells or body soldiers) start to decline. The patient then picks up infections called opportunistic infections (OIs) which normally a person with good immunity will not suffer from these. The common OIs in India are Tuberculosis, thrush, skin lesions, blindness, brain infections, etc. The OIs can be successfully prevented, managed and controlled for many years. However, as the immunity continues to decline, eventually a person may become wasted, demented and die.

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Persons with HIV need a "Continuum of Care" from the day they are diagnosed with this infection. It is important to detect the infection in its early stages because a person could then receive treatment to maintain higher high white blood cell count using a holistic approach. We can also prevent the occurrence of OIs by giving simple inexpensive drugs. We should counsel the person, help him to contain his infection and lead a responsible life. During continuum of care the patient regularly attends the 'day care' clinic, and has a routine check up. If she gets severe infections like pneumonia, or chronic diarrhoea or brain infection then she is hospitalized for intensive treatment. In some cases where the patient cannot attend the hospital due to debilitating illness or for want of transport, "Home Based Care" is offered. Hospice manages terminally ill patients who have no one to care for them.



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Psychosocial support is as important as medical management of HIV disease. The attitude of the health provider towards his/her patient has to be positive. For e.g., do not blame the patient for his/her infection; do not make the patient guilty or ashamed, about the illness. Advice, exercise, yoga, meditation, non-stressful activities, sleep, etc. These help to boost his/her immune status. Prescribe high calorie, high protein diets with plenty of vitamins and minerals that help to improve their quality of life.

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HIV testing is different from all other blood tests because HIV is a stigmatized infection and PWA are medically and socially discriminated. Hence the person undergoing HIV test should be told about the test and its implications during pretest counselling. The result of the test has to be kept confidential. A person with a HIV+ test needs counselling during his life time for various problems s/he may encounter, such as legal, economic, employment, etc.

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There are many tests available for the diagnosis of HIV. The common screening test, which is offered almost universally, is ELISA (Enzyme Linked Immuno Sorbent Assay). Today we have very sensitive and specific third generation ELISA tests which are very reliable. Western Blot is a confirmatory test. In all these tests we are trying to detect the antibodies in the virus. It takes about 3 months for these to develop and hence this period when the test is negative even when the person is infected with HIV is known as the 'window period'.

When we want an early diagnosis during the 'window period' or for monitoring the prognosis of the disease we can use tests called PCR – Polymerase Chain Reaction, where we detect the viral genome.

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There is no cure for HIV disease today anywhere in the world. There is neither a vaccine to prevent the infection. It may be many years before they are commercially available in the developing countries. So the only weapon that we have to fight HIV is 'prevention'. We need to make sure that the blood to be transfused is tested for HIV. The needles and syringes are sterile. And that safe sex i.e. use a condom (if one practices premarital/ extramarital sex or is HIV+) is widely promoted.

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General Population

- Avoid Casual sex
- Husband and wife to be faithful to one another
- Make sure blood to be transfused is HIV checked
- Encourage relatives and friends to donate blood.
- Make sure needles used on you are sterile.

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Avoid premarital sex. **B**e mutually faithful to each other. **C**ondom – use it if "Variety is the spice of your life". **D**rugs to be avoided more so IV drugs.

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Fight AIDS with Facts, Not fear.

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There is no "them". It is only "us". Not everyone will be infected, but we all will be affected.



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