

Bio-Psycho-Social Aspects of Acquired Immune Deficiency Syndrome (AIDS)

The cause of AIDS is a virus - Human T-cell Lymphotropic Virus type III (HTLV-III, commonly abbreviated to Human Immunodeficiency virus, HIV). This may lead to no more than a pyrexial illness with lymphadenopathy, but in a minority of individuals it produces the full syndrome of AIDS. The incubation period before the disease is declared varies from many months to several years.

Promiscuous homosexual men constitute the major risk group, followed by intravenous drug abusers. Haemophiliacs, Haitians and persons with Central African connections are also at special risk. (Lishman, 1987).

The spectrum of the disease consists of multiple severe infections and certain neoplastic disorders, all reflecting an underlying cellular immune deficiency. Pneumocystis carinii pneumonia and Kaposi's sarcoma of the skin are the commonest forms of presentation (Department of Health and Social Security, 1985).

Snider et al. (1983) have reviewed the neurological complications among patients affected. The nervous system involvement often appears early in otherwise asymptomatic individuals. Infective processes include a severe subacute encephalitis, toxoplasma brain abscesses, progressive multifocal leucoencephalopathy, cryptococcal meningitis and candida albicans infections. Tumours consist of lymphomas originating within the brain, or invading the meninges leading to cranial nerve neuropathies. Vascular complications were infarctions and cerebral haemorrhages, sometimes in the setting of thrombocytopaenia. Other patients showed focal brain lesions of an uncertain nature, self-limiting aseptic meningitis, or peripheral neuropathy.

The commonest picture in Snider et al. 's and Levy et al. 's (1985) series was subacute encephalitis, characterized in the early stages by malaise, loss of interests and subtle cognitive changes. Marked psychomotor retardation often gave the impression of depressive illness. Progression over weeks or months then led to profound dementia, the CT scan showing cerebral atrophy and periventricular white matter lucencies. Opportunistic infection with cytomegalovirus is probably often responsible, but recent evidence points to direct infection of brain cells with HIV virus as a major cause.

Widespread alarm within populations at risk has led to a high incidence of psychiatric disorder even among persons not already affected. Many patients may therefore present to the psychiatrist with no more than a fear of the disease, and in the absence of a fully reliable diagnostic test the anxiety can at times be prolonged, (Miller et al., 1985). Special problems are encountered in that the earliest symptoms of central nervous involvement are frequently nonspecific, consisting of lethargy, depression and social withdrawal.

More definite signs consist of personality change, memory disorder, confusion, headaches, fits, ataxia or focal neurological signs.

A brief overview of epidemiology of AIDs.

In the United States the earliest cases of AIDS were diagnosed in the late 1970's.

During the 1980 's more than 70% of patients in the United states and Europe have been homosexual or bisexual males. In contrast, in Africa, AIDS is diagnosed with equal frequency in women and men and occurs primarily in heterosexual individuals. (Mann et al., 1986) Other risk factors include intravenous drug abuse, factor therapy for hemophilia, and transfusion with infected blood.

Infants born to infected mothers are also at risk of infection with the virus. It is probable that the spread of the virus due to contaminated blood has been greatly reduced since testing of donors was instituted. Sexual transmission is primarily the result of transfer and exposure to infected semen. The virus also has been isolated from cervical secretions, tears, and saliva, but exposure to the latter two secretions has not been proved to transmit infection (Groopman et al., 1984). Many persons believe that all viruses are transmitted the same way as the common cold viruses and therefore assume that infection with HIV in the workplace is a possibility. There are no data to suggest that HIV can be transmitted by the airborne route or by contact with fomites. The fears about AIDS transmission in the workplace and in the health care environment must be combated with the facts. Physicians, other health care professionals, and employers must assume the responsibility for educating themselves as well as their colleagues, employees, and the general public about HIV transmission, and should be encouraged to re-evaluate their attitudes about AIDS patients and their lifestyles and behaviours. The psychological stresses inherent in dealing with AIDS patients should be acknowledged; some degree of apprehension should be regarded as normal. Hopefully, with acceptance and verbalization greater insight into the sources of irrational fears and attitudes can be achieved so that constructive changes can be effected (Gerberding & Sande 1992).

Patients with AIDS do not live in a social vacuum, but within a social context of family members and other close contacts who must deal directly with the fear of transmission of HIV infection. Fortunately, there is now a great deal of information that supports the view that individuals in close but nonsexual contact with these patients do not appear to be at increased risk of infection. This information, conveyed directly to family members and other close contacts is often very reassuring. Razors, toothbrushes or any other items that may be soiled by blood from AIDS patients should not be shared. Blood and other body fluids should be handled with care. Apart from these precautions taken by family, friends and household contacts, normal daily life and expression of affection among AIDS patients, family members and friends should be maintained. Family members can socialize with AIDS patients, including talking, eating, and sleeping in the same bed. Articles used by the patient, such as books, newspapers, telephones and eating utensils, can be handled without fear. Family members and friends can shake hands, hug, hold, touch, caress, and kiss AIDS patients (Friedland and Klein 1992).

Recent reports from U.S.A stated that AIDS became the most important cause of death among young Americans in 64 Cities; their number exceeds those dying from murder, cardiac diseases and cancer. More than 182 thousand individuals died from AIDS in U.S.A since 1981 between the ages 25 and 44 years. Also, 61% of deaths in young male individuals in San Francisco was caused by AIDS.

In Africa, the most recent report on epidemiology of AIDS stated that 8.5 million individuals are infected and they represent 71% of the total number of AIDS patients all over the world. It is expected that this number will reach 14 million patients by the year 2000. The south african zone represents the highest rate of infected patients; 55% of women, 45% of men and 750 thousand children are affected.

In Egypt, the most recent report from the Ministry of Health stated that 236 proved cases of AIDS were discovered in Egyptians; 23 cases contracted the disease while working abroad mainly through infected blood during surgical operations, 38 cases were discovered accidentally while under treatment in hospitals from various disease and 83 patients died. 176 proved cases of AIDS between foreigners staying in Egypt have been discovered and these have been expatriated to their countries. By law, all foreigners coming to stay in Egypt for more than one month either for work, study or training, but not for a short period as tourism, are examined for AIDS.

Recently, it has been reported from one of the renal dialysis centers in lower Egypt where a patient acquired AIDS in an Arab country after receiving infected blood during surgical operation and then developed renal insufficiency necessitating dialysis. He returned to Egypt not knowing that he has contracted AIDS and spread the infection to 13 patients undergoing dialysis in the same center. Another case was reported from one private hospital where the patient received infected blood after surgical operation. The accidents in the dialysis center are due to negligence in sterilization of dialysis machines and failure to use disposable filters and tubes. The transmission of AIDS through infected blood led to revision of the screening methods used in examining blood samples of both patients and blood donors before passing them as safe. The problem is that the reliable technique costs about 300 Egyptian pounds for each sample, while the mere screening test costs 35 pounds. If we know that in major surgical operations, especially cancer surgery, the patient may need large amounts of blood from various sources and donors, the expenses of blood testing alone will add a lot to the cost of the surgical operation especially if carried out in the free state centers.

Although the HIV virus has been identified as the cause of AIDS for more than ten years, yet no treatment is available for this disaster, and no effective vaccine has been prepared for prevention. It has been claimed that if such a vaccine could be available in the near future, it will be very expensive and only rich people in the rich countries will afford to get it.

A wide variety of substances have been tested in vitro and a smaller number has been tested in humans. One antiviral drug, azidothymidine, has been shown to be effective in the treatment of AIDS patients with pneumocystis carinii pneumonia (PCP). The effectiveness of this agent was determined in a randomized, placebo-controlled trial.

The development of immunomodulators with activity in this disease also has been actively pursued. Only one of these, interferon alpha, has been shown to have any in vitro effect against the causative virus. Many substances that modulate the immune system or procedures that restore immune function have been studied in AIDS patients. These substances enhance immunity by stimulating proliferation of

immune cells, by altering skin test sensitivity to antigens, or by stimulating other immune responses. (La Montagne and Myers, 1992).

The search for effective treatment of AIDS began when the first cases of the disease were reported in 1981. The recognition that AIDS is an infection of the immune system has focused the search for therapies in two general areas: (1) drugs with a direct antiviral effect on the etiologic agent, and (2) immunomodulators or other therapeutic approaches that reconstitute or restore the function of the immune system. It is now generally accepted that control of the virus infection must take priority over reconstitution of the immune system because unless the virus infection can be controlled, therapy with immunomodulators alone will fail. However, the clinical course of any AIDS patient is likely to vary significantly even without therapy. These transient changes in clinical status are unpredictable and patients may appear to improve or deteriorate for no discernible reason.

The development of effective antiviral drugs depends on understanding the replication of this retrovirus. Based on current information, it may be possible to inhibit HIV at several stages of its replication, including: (1) neutralization or inhibition of virus binding to target cells; (2) inhibition of viral entry or uncoating; (3) inhibition of reverse transcriptase or other virus-specific enzymes involved in the replication of the viral genome; (4) inhibition of virus - specific mRNA synthesis or processing and its translation into viral proteins; and (6) inhibition of viral morphogenesis and assembly. Although the approaches described above are promising, the use of antiviral drugs has limitations. Drug-resistant viral mutants may emerge. These compounds are also likely to exert some toxic effect on host cells since viral replication is an intracellular process. Most current antiviral drugs are virustatic and not virucidal. All of these factors suggest that effective therapy for this infection may be achieved only through combination antiviral therapy. Finally, because HIV can infect the central nervous system, antiviral drugs must be able to penetrate this site.

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