

Nutrition and AIDS

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AIDS, arising from HIV infection, was first discovered as an obscure disease in an American homosexual in 1981. It soon became apparent that an epidemic of AIDS was occurring in the USA, Australia and Western Europe, mainly involving homosexuals and intravenous drug addicts. Subsequent studies in the latter half of the 1980s showed that HIV infection, unlike in developed countries, was being spread predominantly through heterosexual promiscuity, and mother-to-child transmission in the Caribbean and sub Saharan Africa. The HIV pandemic also reached Asia in the 1980s.

As on 31 October 1990, about 300,000 cases of AIDS had been reported to WHO from 158 countries. This, however, possibly represents only a fraction of the estimated number of AIDS cases. Three million out of the estimated eight million infected persons are women. It is estimated that globally there are 400,000 paediatric AIDS cases and 700,000 HIV-infected children.

The situation in India

The first group of sero positive individuals detected in India were prostitutes from low-income groups in Madras. Sero-positivity rate, even among suspected high risk groups, was, however, low. Heterosexual promiscuity was the major mode of transmission of HIV infection. Pregnancies in sero-positive women were reported in 1986. Follow-up of these women and children resulted in the detection of infected infants² in 1987.

In the last two years, two disquieting trends have been observed. A steep rise in the sero-positivity rate among IV drug users in the North-east has been reported; nearly half of the drug addicts screened in 1990 were sero-positive. A progressive increase in sero-positivity rate among prostitutes has been reported from Vellore, Madras and Bombay. A similar increase in the sero-

positivity rate among heterosexually promiscuous men attending the STD clinics has been observed.

Available data suggest that HIV infection exists in all regions of the country, both in urban and rural areas, and among all economic groups. The infection has spread from recognized high-risk groups to vulnerable segments—women, children, persons receiving blood/blood products. However, the overall prevalence rate in the country still appears to be low. Conservative computations based on available limited data indicate that already at least 200,000 individuals are infected (male-female ratio 1:1). Twenty thousand out of the 20 million births in India are likely to occur in sero-positive women.

At the moment, there are no reliable estimates on HIV infection load among children in India or the relative contribution of perinatal and parenteral transmission to the infection load; so far, four suspected paediatric AIDS cases have been reported from various centres in India. The most common antecedent was multiple transfusions.

Undernutrition in AIDS

The majority of AIDS patients sooner or later have gastrointestinal problems, with diarrhoea and malabsorption, leading to severe undernutrition, as the major presenting complaints.

Lower dietary intake caused by infections of the mouth and gullet; loss of appetite due to drugs used for control of infection, depression and anxiety; poor absorption of nutrients due to diarrhoea and gastrointestinal infections; and increased requirements of nutrient, due to fever and infections—all contribute to undernutrition and weight loss in AIDS.

Studies using total body potassium as an indicator of body cell mass depletion indicate that deaths in AIDS cases occur when, with progressive depletion, the body cell mass gets reduced to 54% of normal, and body weight to 66% of the ideal, irrespective of the nature of complications. Deaths in AIDS appear,

thus, to be mainly related to the magnitude of tissue depletion. Preliminary data suggest that body cell mass repletion is possible by parenteral nutrition in patients in whom malabsorption is the major problem. Results are not satisfactory in patients with systemic infection. The nutritional status of AIDS patients appears to be an important determinant of the incidence of opportunistic infections and the evolution of the disease. Treatment of infection and nutritional support can arrest or reverse weight loss and prolong survival in AIDS cases³⁻⁶.

The problem of diagnosis

In developed countries, repeated infections and severe weight loss without apparent cause are uncommon in the general population. The majority of AIDS cases in these countries occur in two well-defined groups—homosexuals and IV drug users. HIV-testing facilities are readily available and affordable. For these reasons, the diagnosis of adult AIDS cases does not pose major problems in these countries.

On the other hand, the clinical diagnosis of adult AIDS in developing countries, including India, is difficult. Chronic undernutrition is not uncommon, especially in poorer segments of the population. Weight loss associated with persistent cough (tuberculosis) and chronic diarrhoea (amoebiasis, giardiasis) are common. HIV is transmitted mainly through heterosexual promiscuity and clearly defined high-risk groups for HIV infection do not exist as in the developed countries. HIV testing is neither readily available nor affordable. Under these circumstances, the diagnosis of AIDS often poses problems.

Studies from India and Africa indicate that the prevalence of tuberculosis, amoebiasis and giardiasis is high among HIV sero-positive individuals. Patients with AIDS accompanied by weight loss, immuno-depression and tuberculosis improve after the administration of short-course chemotherapy and regain weight temporarily, and therefore the

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diagnosis of AIDS is missed. It seems possible that there is considerable underdiagnosis of AIDS cases. With increasing awareness about AIDS, the pendulum may swing towards over-diagnosis.

Paediatric AIDS

Paediatric AIDS is characterized by a failure to thrive, hepatosplenomegaly, chronic fever, recurrent bacterial or fungal infection of the skin and the gastrointestinal and respiratory tracts. Infections like tuberculosis, amoebiasis and giardiasis have been reported to be common in paediatric AIDS cases in Africa.

In developing countries, unlike in the affluent ones, failure to thrive is a common problem among the children of poor communities. Repeated episodes of gastrointestinal and respiratory infection are also common, especially among the urban and rural poor. Cases of under nutrition with and without AIDS, cannot therefore be easily distinguished. Studies from sub-Saharan Africa have shown that 10–30% of children with kwashiorkor and marasmus are sero-positive; there are no differences in the past history, type of infection or clinical presentation between sero-positive and sero-negative children with kwashiorkor^{1,7}. The majority of these children are born to mothers who do not belong to clearly recognized high-risk groups. Only a very small fraction of the population has undergone HIV testing. Under these circumstances, the diagnosis of paediatric AIDS in India as in other developing countries, is difficult. It is possible that many cases are now being missed. Growth monitoring during the first five years and careful history, examination and HIV testing among those who show persistent growth faltering and repeated infections, appears to be the most feasible methods for detecting paediatric AIDS in India⁸.

Nutritional support in HIV infection

Nutritional support is needed in HIV infection for:

- maintaining optimum nutrition during the long asymptomatic period;
- preventing further deterioration of

the nutritional status during acute episodes of infection in AIDS patients; and

- improving nutritional status during the stable symptom-free period in AIDS cases.

In developing countries, where AIDS threatens to add to the already existing burden of undernutrition, both among adults and children, the treating physician faces an ethical dilemma: whether the available scant resources should be spent for nutritional rehabilitation of undernourished, but HIV-uninfected children, or towards nutritional support of paediatric AIDS cases, who are bound to succumb to the disease within the next year.

It is relatively easy to achieve and maintain the optimum nutritional status in asymptomatic sero-positive individuals. At least, this goal can be achieved by minimal inputs into health care, counselling and health education. It is possible that good nutrition and freedom from common infection may prolong the asymptomatic period.

Once clinical symptoms appear it is very difficult to maintain optimal nutrition. However, efforts should be made to prevent further deterioration in nutritional status, which could increase susceptibility to infections, thus leading to rapid deterioration in nutritional status. Adequate intake of a well-balanced diet to meet the increasing nutrient requirements due to infections is necessary. Vitamin and mineral supplements in appropriate doses to meet the increased requirement may be given; but mega doses of these should not be given because they may further impair the immune status and other biological functions. As long and as far as possible, the oral intake of food should be encouraged and tube feeding should be attempted only in cases where oropharyngeal lesions make oral intake virtually impossible.

Parenteral nutritional support may provide a dramatic—if temporary—respite in cases with severe impairment of absorption as in cases with extensive kaposi sarcoma of the gut. Apart from the cost involved in providing the appropriate mix of nutrients and using careful biochemical monitoring for providing adequate quantities of nutrients daily, there are numerous health problems associated with total parenteral nutrition. Hence, this should be resorted

to for short periods only, if there are clear indications.

While provision of nutritional care should obviously be a part of the overall care for AIDS cases, institutional support programmes should clearly take into account the existing realities in terms of the number of persons affected and resources, both personal and national, that will be available.

Physicians in developing countries may increasingly face the problem—whether given the resource constraints, they should initially screen all severely malnourished children for HIV infection and admit only sero-negative infants for intensive therapy. Sero-positive cases, even if given intensive care, are unlikely to survive for more than a few months.

HIV Infection and breast-feeding

HIV has been isolated from breast milk. A few instances where the infants might have been infected through breast milk have been documented; but all these occurred in women who became infected due to blood transfusion in the post-natal period, an event which is unlikely to recur because of the almost universal blood donor screening for HIV antibodies. Thus, the transmission of HIV through breast milk is likely to become very rare.

Available data suggest that breast-feeding will protect HIV-infected infants from other infections and may prolong the survival period. Therefore, breast-feeding is desirable in HIV-infected infants. Since tests for detection of infected infants are currently not readily available, we have to advocate that all infants born to sero-positive mothers are breast-fed; otherwise, infected infants may be deprived of the unique advantages of breast-feeding.

To avoid the small potential risk of HIV infection through breast milk, developed countries recommend that sero-positive women should not breast-feed.

The situation in India and other developing countries is radically different. Most sero-positive women do not belong to the high-risk group. All infected mothers or infants cannot be detected because universal testing is not possible. Breast-feeding is essential for infant survival and growth, irrespective of the HIV infection status of the infant,

because infant food formulae are neither affordable nor safe. Hence breast-feeding by the biological mothers should continue irrespective of the HIV infection status of the mother or infant⁹. Promotion of breast-feeding should continue to be the national policy, whether HIV status of the mother is known or unknown¹⁰.

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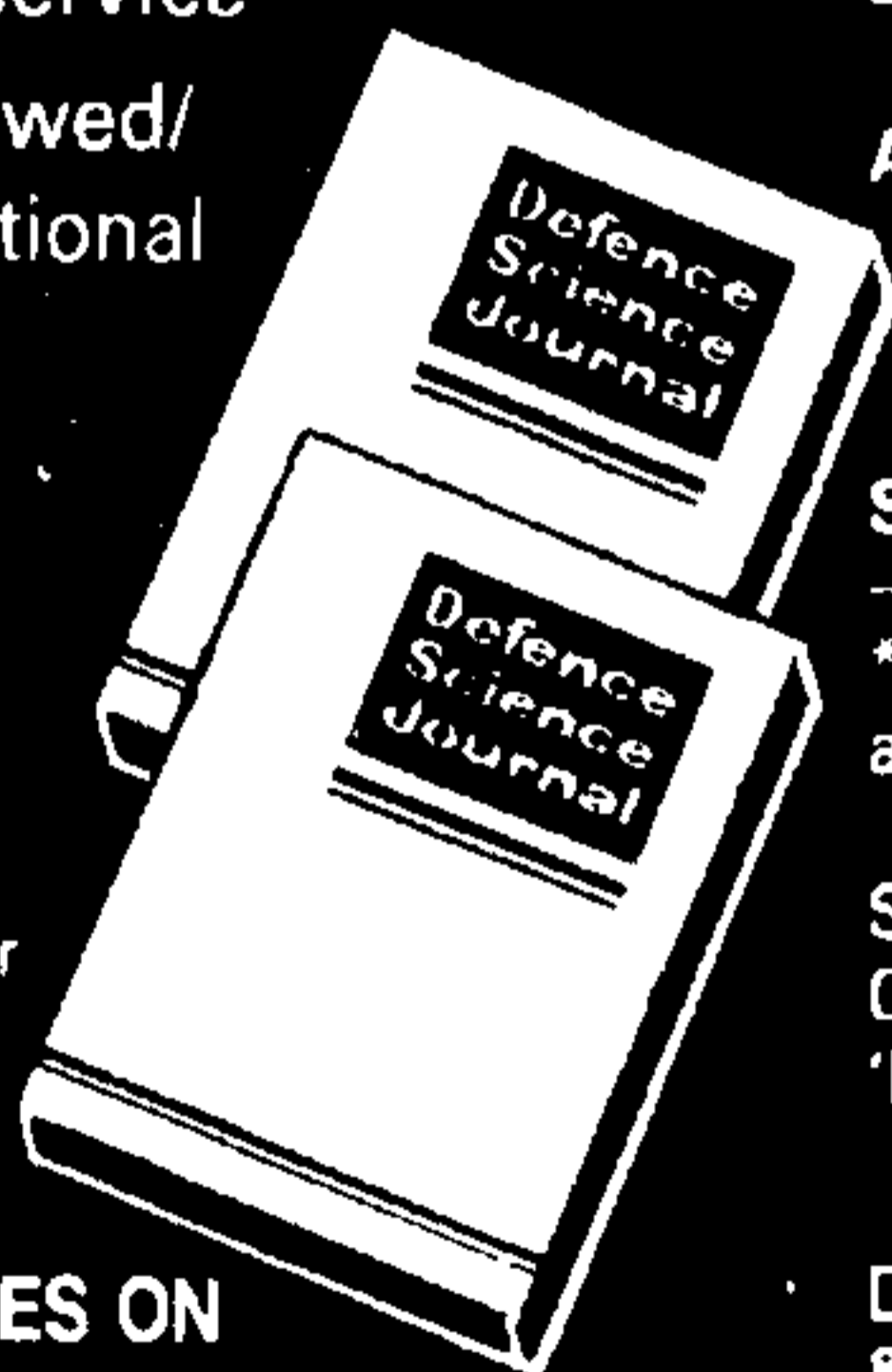
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