

HIV / AIDS and Nutritional Problems in Children

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AIDS is the most dreadful disease of recent years and has become a global problem. According to UNAIDS (2005), the fact is that globally 5.1 lakh children below 15 years have died of HIV / AIDS in 2004. According to UNICEF (2006), AIDS is threatening children as never before. Globally 2.3 million children are living with HIV.

Children under 15 account for one in six global AIDS-related deaths and one in seven new HIV infections. Increase in the number of children who lose one or both parents, illness or death of parents or guardians robs a child of emotional and physical support and that is likely to be worse in poor households. Children with advanced HIV infection are vulnerable to various infections that are called opportunistic infections as they take advantages of the opportunity offered by a weakened immune system by decreasing CD4 + count.

Child malnutrition is one of the most severe and lasting consequences of death through reduced household income resulting in reduced food expenditure and consequent drop in food consumption. Malnutrition or wasting can affect physical capacity and cognitive function which in turn, can impair daily ac-

tivities, general health status and quality of life. A common effect of HIV / AIDS infection is major weight loss which eventually leads to extreme cachexia. The causes of body wasting include inadequate food intake, malabsorption of nutrients and disordered metabolism.

Nutritional problems have been a part of the clinical aspect of AIDS from its earliest recognition as a new disease. In fact, in any AIDS patient, the severity of the clinical manifestation is proportional to the degree of the nutritional deficiencies.

Effects of HIV Infection

Nutritional Problems

HIV infection leads to weight loss and cachexia. Body wasting in AIDS is characterised by loss of body cell mass. Primarily muscle protein and death occurs when body weight reaches two-third of normal weight and body cell mass reaches half of normal values. This implies that death may be more often due to malnutrition, specifically negative nitrogen balance than to the direct effect of infection. The causes of body wasting are inadequate food intake secondary to anorexia, malabsorption of nutrients secondary to diarrhoea and disordered metabolism.

Malnutrition

Severe malnutrition syndromes such as Kwashiorkor and marasmus are increas-

ingly associated with being HIV infected. Weight loss is common in HIV. Poor dietary intake due to anorexia or poverty or both, or malabsorption, increased energy expenditure, altered protein metabolism contributing to the malnutrition syndrome seen in HIV / AIDS. In HIV-infected children experiencing weight loss, energy needs are increased by up to 50-100 percent including vitamins and minerals.

HIV infection can lead to nutritional deficiency through decreased food intake, malabsorption and increased utilisation and excretion of nutrients.

A joint UNICEF and Action Against Hunger (AAH, 2002) conducted study among 505 severely malnourished children. It revealed that as many as 26 percent of children admitted to Nutrition Rehabilitation Units were HIV positive.

Severe malnutrition syndromes such as Kwashiorkor and marasmus are increasingly associated with being HIV infected. Indeed around 50 percent of severely malnourished children in Zambian and Malawian hospitals are now HIV-infected. Underlying HIV/AIDS may contribute to poor rates of catch-up growth and high mortality rates.

Infection

While weakening the immune system functions, malnutri-

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tion raises susceptibility to infection. There is a vicious cycle between infection and malnutrition. Malnutrition weakens the immune system and increases susceptibility to infection.

The opportunistic infections in HIV are thrush, stomatitis, esophagitis, diarrhoea, nausea, vomiting, anorexia, fever, oral hairy leukoplakia, tuberculosis, pneumonia, bacteremia and meningitis.

Severe infections including TB, HIV and AIDS cause children to lose weight. AIDS is commonly known as "slim disease" because so many people with AIDS had severe wasting and muscle loss.

Infection leads to decreased nutrition intake, absorption, and metabolism and to poor nutritional status.

HIV infection alters nutrition through three key effects: changes in intake, absorption and metabolism. At the same time, malnutrition increases susceptibility to infection through poorer immunity.

Changes in Intake

People with HIV and AIDS often eat less because of loss of appetite. Many opportunistic infections contribute to this by causing nausea, malaise and fever. Infections such as oesophageal candidiasis that cause a sore mouth or pain from eating also decrease food intake and may occur silently in children. The need for food at this time is immense, but people with HIV rarely have access to extra food when HIV occurs in a background of poverty.

Changes in Absorption

Even when food is available it may be poorly absorbed in patients with HIV and AIDS. Intestinal malabsorption and nutrient loss is common. The virus has been shown to damage the intestinal villi and inflammation can damage gut tissue and reduce absorption. Enzymes in the intestinal mucosa involved with metabolism and absorption can also be less active. These changes in the gut seem to affect the body's ability to utilise dietary fat and carbohydrates.

Changes in Metabolism

HIV also affects metabolism in a variety of ways. HIV seems to induce a special metabolic effect involving a preferential loss of protein over fat. So people with HIV should include more protein in their diet. Fortunately, much can be done to break HIV wasting cycle by improving nutrition and preventing wasting might not reverse the course of HIV but it may reduce the incidence of opportunistic infections and improve the children's quality of life.

Complications

The hallmark of AIDS is the breakdown of the immune system that is manifested by clinical and nutritional complications.

Neoplasm - oral and esophageal lesions, lesions in small and large intestine, diarrhoea and malabsorption.

Enteropathy - Malabsorption and diarrhoea. Because of these complications, malnutrition is a common problem of patients with HIV / AIDS

and plays an important role in the morbidity and mortality. Good nutrition will also reinforce the effect of the drug taken.

Nutrition Intervention

Nutrition plays an important role in helping the immune system work well. Nutrition support plays a vital role through out the HIV disease process. The goals of nutrition intervention are to prevent nutrient deficiencies known to compromise immune function to treat or minimise HIV; support optimal therapeutic drug level and to prolong and optimise quality of life.

Good wholesome food is essential for normal growth and development. There was a positive correlation between nutritional status and child's growth development, intellectual and scholastic performance.

There is association between micronutrient intakes and HIV infection. Counseling with HIV infected children should focus on early increased intake of food, rich in micronutrients to improve growth, slow disease progression and increase survival. Multi micronutrient supplements can improve clinical outcomes among HIV-infected individuals, especially in children with specific micronutrient deficiencies. Poor nutrition and HIV-related adverse health outcomes contribute to a vicious cycle and that may be slowed down by using nutritional interventions.

Daily multivitamin supplements were found to reduce HIV disease progression

among children in several observational studies and randomised trials.

Dietary Care and Support

1. Maintain and expand nutrition 'knowledge and empowerment'
2. Maintain or restore healthy body weight.
3. The amount of protein required in the absence of secondary infection is 2 g / kg body weight of the child.
4. Clinically stable patients can have normal caloric intake.
5. Treat or minimise HIV or medication-related complications that interfere with either intake or absorption of nutrients.
6. Sufficient exercise.
7. Nutritional counseling.

Recommended tips for relieving diarrhoea

1. Keep hydrated with diluted juices.
2. Limit sodas and other sugar drinks.
3. Eat slowly and get plenty of rest.
4. Eat small frequent meals and snacks.

Recommended tips for relieving nausea

1. Eat something small every one to two hours.
2. Drink liquids separately from solid food.
3. Try lemon salts starchy foods.
4. Avoid lying down after eating.

5. Avoid food such as fatty, sweet and spicy.

Recommended tips for managing sore mouth

1. Soft moist foods
2. Avoidance of spicy and acidic food
3. Avoidance of very hot or cold food

Recommended tips for managing fatigue

1. adequate sleep
2. relaxation
3. exercise
4. adequate diet
5. Special food rich in vitamin B12, A, C and zinc.

Conclusion

Human immunodeficiency virus disease is a chronic viral infection of HIV that is associated with progressive deterioration of the immune system, particularly T_4/CD_4 cells which results in the development of severe opportunistic infections.

According to UNICEF, AIDS is threatening children as never before. Globally 2.3 million children are living with HIV. Children under 15 account for one in six global AIDS-related deaths and one in seven new global HIV infections.

Indian Academy of Pediatrics (2000) stated that Acquired Immuno Deficiency Syndrome (AIDS) is the most severe form of continuum of illness associated with HIV infection.

There is a positive correlation between nutritional status and child's growth, develop-

ment, intellectual and scholastic performance. Nutrition plays an important role in helping the immune system work well and in the management of HIV infection. This can be achieved by nutritional screening and nutritional intervention.

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