Growth Retardation and Anemia Among HIV-Infected Children in South India: Need for Targeted Nutritional Interventions

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Background: Growth retardation and anemia are manifestations of pediatric HIV infection and are independent risk factors for death among infected children. We sought to describe nutritional status, anemia burden and HIV disease correlates among infected children in India.

Methods: We analyzed retrospective data from 248 HIV-infected children aged 1—12 years attending four outpatient clinics in South India (2004—2006). Standard WHO definitions were used for anemia, HIV staging and growth parameters. A subsection of children with prospective haemoglobin assessments were also included in the analysis. Statistical analysis included chi square, t test, and univariate analyses

Results: The overall prevalence of anemia was 62.5%, and 8.1% had severe anemia (Hb < 7 gm/dl). The proportion of underweight and stunted children in the population was 55.3% and 46.2% respectively. Poor growth (WAZ, HAZ < -2) was significantly associated with anemia and advanced HIV disease status (p < 0.005). Risk factors for anemia included advanced HIV stage (OR = 5.2; CI 2.9—11.2; p < 0.005) and severe immunodeficiency (OR = 4.5; CI 2.01—10.0; p < 0.005). Anemia was independently associated with pulmonary tuberculosis; hemoglobin in those with and without tuberculosis was 8.9 and 10.2 g/dl respectively (p < 0.005). Anemia was not significantly associated with age, gender, multivitamins, cotrimoxazole, presence of ART, or ART type (zidovudine versus stavudine). Among 45 anemic children with available prospective data who received at least 6 months of ART along with nutritional supplements, subsequent mean hemoglobin improved significantly by 1.5 gm/dl (CI 0.8—2.3, p < 0.005)

Conclusions: The high prevalence and strong interrelationship of growth retardation and anemia among HIV-infected children in India underscores the need for incorporating targeted nutritional interventions during national scale up of care, support and treatment among children.

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Spectrum of Clinical Presentation and Opportunistic Infections in HIV: An Indian Scenario

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The clinical course of Human Immunodeficiency Virus (HIV) and pattern of opportunistic infections varies from patient to patient and from country to country. HIV infected persons in India are exposed to an environment very different from that in many other countries. Hence the manifestations of HIV are also likely to be different from other countries. Disease progression correlates with clinical features such as fever, cough, diarrhea, significant weight loss, oral Candidiasis and Tuberculosis. Patients with CD4 counts less than 200 cells/µl have increased mortality than those with counts greater than 350 cells/µl. The progression and outcome of HIV is influenced by factors such as baseline health, nutritional status, environment, endemic diseases and access to therapy. To understand the presentation of HIV in Indian scenario, a study of clinical profile, trends of opportunistic infections and clinical categories of HIV at presentation was undertaken. 100 newly diagnosed adult HIV patients were taken up for the study. Symptoms at presentation, laboratory parameters, opportunistic infections and absolute CD4 counts were analyzed. Clinical categorization of the disease was done as per CDC criteria. 81% of the patients were males and 19% were females. Fever (68%) was the commonest presenting symptom. Oral Candidiasis (71%) was the commonest opportunistic infection followed by Tuberculosis (55%). 67% of the patients had CD4 counts less than 200 cells/µL. 58.6% of the patients were in category C3 at presentation. HAART was started for 58% of the patients. HIV in India has a diverse range of clinical presentation involving multiple organ systems. As the HIV epidemic is advancing, it is important to create more awareness about varied clinical presentations of HIV among primary care physicians as well as specialists for early diagnosis. Early detection of HIV optimizes chemoprophylaxis for opportunistic infections and provides an opportunity for secondary HIV prevention.

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