Changing Natural History of HIV Disease Following Highly Active Antiretroviral Therapy in India

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In India, the first case of HIV infection was detected in 1986[1] and the early reports suggested the epidemic was most prevalent in female sex workers, truck drivers and in patients attending STD clinics.[2] Subsequently the prevalence of HIV infection among women attending antenatal clinics and married monogamous women were reported from India.[3-5] It is estimated that the number of people living with HIV in India could be around 5.1million.[6]

HIV infection is marked by a progressive decline in the number of circulating CD4+ T helper cells, which over a period of years leads to immunological decline and death from opportunistic infections and neoplasms.[7,8] Although its clinical course is known to vary considerably from patient to patient, with progression to AIDS taking anywhere from less than one to 10 or more years, the reason for this variability remains unclear. The spectrum of opportunistic infections varies from region to region.[9-12] Survival with AIDS has been shown to vary greatly, but generally the median survival after an AIDS diagnosis in developed countries before the HAART era was estimated to be between 12 and 18 months.[13] Studies reveal that specific AIDS defining illnesses, CD4 cell counts and HIV-RNA levels predict the survival of persons with HIV disease.[14,15,18] The widespread use of effective chemoprophylaxis for opportunistic infections and more recently, the use of antiretroviral therapy have resulted in a delay in the onset of AIDS, a longer survival and a change in the pattern of opportunistic infections in the developed world.[16-18]

Prior to the introduction of highly active antiretroviral therapy (HAART), the majority of patients who tested for HIV in southern India tended to present with advanced disease. HAART has led to dramatic reductions in HIV-related morbidity and mortality in America and India.[18,19] Production of antiretroviral medications by generic manufacturers in developing countries has drastically reduced the price of combination HAART less than one USD/day.[20] Lower prices have allowed centers in resource-limited settings to make HAART available to HIV-infected patients.[21]

Persons receiving antiretroviral therapy had increased survival, even with advanced disease in India.[18] Longer usage of HAART can lead to adverse events like anemia, hepatitis, peripheral neuropathy, lipoatrophy, lipodystrophy and lactic acidosis. Poor adherence and improper usage of HAART can result in drug-resistant viruses. This can lead to the transmission of ARV resistant viruses. HAART in the context of opportunistic infections can lead to Immune Reconstitution Syndrome.[22] Physicians should be properly trained on, when and how to use HAART, monitoring HAART, when to switch HAART and how to prevent and manage toxicities and ARV resistant strains.

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