AIDS IN INDIA : RECENT TRENDS IN OPPORTUNISTIC INFECTIONS

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Abstract. The first case of AIDS in India was reported in 1986. Subsequently, a surveillance system was developed in 1987. The data from this surveillance activity suggest that the HIV infection has now spread to the general population and to all parts of the country, except Arunachal Pradesh in North-eastern India. With the changing scenario of the AIDS epidemic, a host of opportunistic infections add to the present endemic state of some already existing infections like tuberculosis.

This report analyses the AIDS cases in India, reported to the National AIDS Control Organization over the years between 1986 to 1997. A total of 3,551 AIDS cases had been reported till 31st May 1997. Tuberculosis (pulmonary and extrapulmonary) is the major opportunistic infection affecting 62% of the cases followed by candidiasis seen in 57% of the patients. In 1997, of the 390 AIDS cases analysed, tuberculosis (pulmonary and extrapulmonary) accounted for 56.5% of the total cases whereas candidiasis was seen in 61% of the cases. An increasing trend was observed with tuberculosis from 58% in 1986-1992 to 68.5% in 1995. No trend could be established in the case of candidiasis, though, a high prevalence of 66% was seen in the cases between 1986 and 1992. An increase was also observed in cases of PCP, cerebral toxoplasmosis and Kaposi sarcoma.

In the AIDS cases, chronic diarrhea (76%), weight loss (87%) and fever (85%) appeared to be the major presenting symptoms. But, of the 390 AIDS cases reported in 1997, only 47% of them were suffering from chronic diarrhea.

With increase in the number of AIDS cases, India is burdened with a dual epidemic of HIV/AIDS and tuberculosis. The National AIDS Control Organization in India, is involved in training clinicians and laboratory personnel in the diagnosis and management of the AIDS cases. With better diagnosis of the opportunistic infections, especially diarrhea, in AIDS patients, a better picture will emerge regarding the opportunistic infections which would help clinicians and health planners to tackle the AIDS epidemic in a more effective manner.

INTRODUCTION

India is in the second decade of the HIV/AIDS epidemic. The first case of AIDS in India was reported in 1986. Since then, HIV infection has been reported from all states and the union territories except Arunachal Pradesh in North-eastern India. In 1987, a year after the report of the first case of AIDS, action was initiated for the control of the AIDS epidemic. Surveillance activities were started with the help of the Indian Council of Medical Research (ICMR). The National AIDS Control Organization (NACO) was established in 1992 under Ministry of Health and surveillance activities were further strengthened. Sixty-two surveillance centers and 55 sentinel sites covering high risk population groups like the STD clinic attenders, Injectable drug users (IDUs) and the low risk groups like the antenatal mothers were established.

By 31st May 1997, a total of 3.033 million people had been screened and 56,409 persons were found to be HIV seropositive. A cumulative total of 3,551 AIDS cases were also reported simultaneously. The emergence and re-emergence of a host of opportunistic infections has aggravated the already existing infections endemic in the country.

There is a need to define recent trends observed in the opportunistic infections. This report analyses the AIDS cases reported to the National AIDS Control Organization between 1986 to 31st May 1997.

DATA COLLECTION

All cases of AIDS in the country are reported to the National AIDS Control Organization. This

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involves reporting of the cases from the State AIDS cells in the 32 states /Union territories of the country. The physicians responsible for AIDS case management (PRAM) in each State AIDS cell is responsible for confirmation of diagnosis and compilation of reports. Details of the individual cases are reported on predetermined formats by the clinicians in the hospitals and health clinics and sent to the State PRAM. The report includes demographic details of the patients, symptoms and signs and the opportunistic infections and the treatment given. A monthly report from individual states is then sent to the National AIDS Control Organization in New Delhi.

RESULTS

A total of 3,551 AIDS cases have been reported to NACO between 1986 to May 1997. The highest number of cases were from Maharastra in Western India, Tamil Nadu in the South and among the IDUs in Manipur in the Northeast. Most of these cases, 89%, (3,160/3,551) are in the sexually active and economically productive age group of 15-44 years. There are 76.7% males and 22.3% females. The predominant mode of transmission is through heterosexual contact (75%) followed by IDU (9%) and blood and blood and blood product infusions (7.5%).

Tuberculosis (pulmonary and extrapulmonary) is the major opportunistic infections accounting for 62% (2,201/3,551) of the total cases. Of these 1,507 (42%) are pulmonary tuberculosis, 313 (8%) extrapulmonary and 481(12%) have pulmonary as well as extrapulmonary manifestations. This is followed by candidiasis (oral and esophageal) seen in 57% (2,024/3,551) of the cases. The other major opportunistic infections are cryptococcal meningitis - 3.5% (107/3,551), PCP - 3% (106/3,551), toxoplasmosis - 3% (106/3,551), CMV - 0.8% 928/3,551) and Kaposi sarcoma -0.5% (18/3,551). Other infections like herpes simplex, herpes zoster, *Cryptosporidium*, progressive generalized lymphadenopathy (PGL), lymphoid interstitial pneumonia (LIP), oral hairy leukoplakia and AIDS dementia complex are seen in 8% of the patients. Yearwise data of the AIDS cases show an increase over the years (Fig 1). A break-up of the tuberculosis cases in each year showed an increasing trend from 58% in 1986-1992 to 68.5% in 1995 ($p< 0.05$). However, of the 390 AIDS cases detected in 1997, tuberculosis was found in 56.5%. No trend could be seen in the case of candidiasis, though a high prevalence of 66% was seen in the cases between 1986-1992 (Fig 2). Cryptococcal meningitis showed an increase from 2.8% in 1986-1992 to 3.9% in 1997 ($p< 0.05$). Other infections did not reveal any significant increase or decrease over the years. Kaposi sarcoma was diagnosed in the AIDS cases from 1994 onwards and 18 cases have been reported so far (Fig 3).

As regards to the presenting signs and symptoms of the AIDS cases, fever was seen in 80% (2,840/3,551), weight loss in 87% (3,089/3,551), chronic diarrhea in 76% (2,698/3,551) of the cases, lymphadenopathy in 30% (1,065/3,551) of the cases and cough in 60% (2,130) of the cases. No significant variation was seen in most of the these symptoms and signs. However, chronic diarrhea was present in only 47% (183/390) of the cases seen in 1997 (Fig 4). Diarrhea was observed in only 4.6% (3/65) of IDUs reported in 1997. This is significantly lower compared to 55% (180/325) prevalence of diarrhea seen in AIDS cases other than IDUs ($p<0.05$).

DISCUSSION

The revised CDC classification includes a host of opportunistic infections which label an HIV seropositive person as AIDS (CDC, 1993). Most of these opportunistic infections are also seen in the AIDS cases in India. Similar to the scenario in the developing countries, tuberculosis accounts for a majority of these cases. Apart from the data of NACO, individuals studies done on AIDS patients in different parts of the country have shown a high prevalence of tuberculosis. A study in Madras showed a prevalence of 48.4%, ranking tuberculosis as the commonest opportunistic infection (Kumaraswamy, 1997). Another study in Bombay found 55% of the AIDS cases suffering from pulmonary tuberculosis (Deshpande, 1994). Autopsy findings from 116 AIDS cases in Maharastra found 61% to be cases of tuberculosis. Though extrapulmonary tuberculosis is seen in 8% cases, better diagnosis might reveal a higher figure. Atypical mycobacteria which are seen in high numbers in AIDS cases in the Western world have not as yet been reported in the AIDS cases in India. It is estimated that the prevalence of tuberculosis in

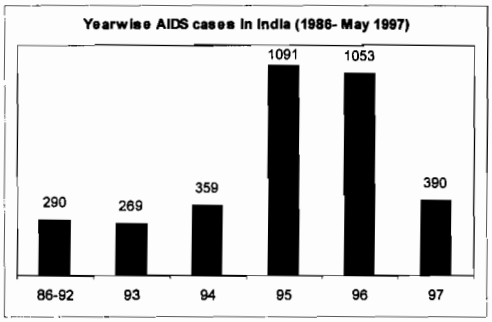

Fig 1–Yearwise AIDS cases in India (1986-May 1997).

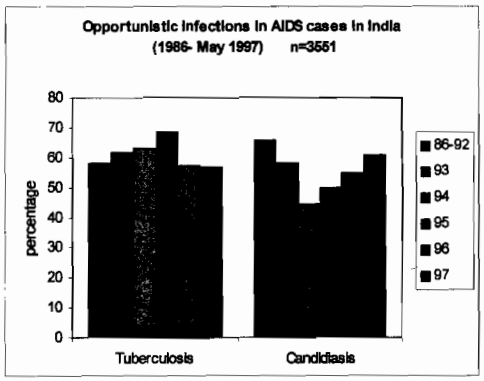

Fig 2–Opportunistic infections in AIDS cases in India (1986-May 1997) n=3,551.

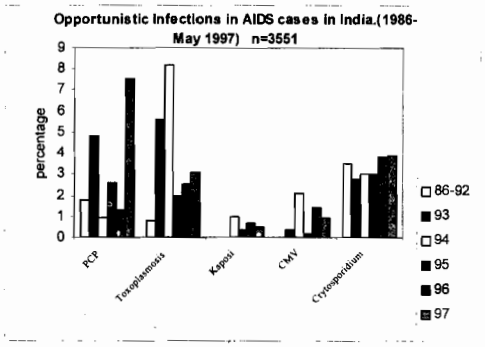

Fig 3–Opportunistic infections in AIDS cases in India (1986-May 1997) n=3,551.

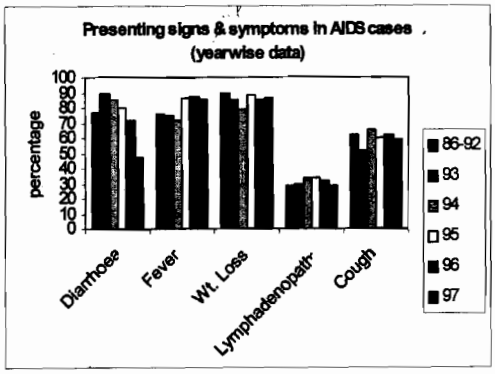

Fig 4–Presenting signs and symptoms in AIDS cases (yearwise data).

India is 14 million cases with 3 million as sputum positive. The estimated incidence is 2.2 million new cases per year. A majority of these cases might be due to the AIDS epidemic. With this dual epidemic there is also the increased risk of the multidrug resistance tuberculosis. A study conducted on 11 AIDS cases with pulmonary tuberculosis showed 9% having primary resistance to isoniazid and 36% to Rifampicin. In comparison, in the HIV seronegetive patients only 9% were resistant to rifampicin (Shetty *et al,* 1996). On screening tuberculosis cases for HIV co-infection it was found that the prevalence ranged from only 1.3% to 12.1% in different studies (Tripathy *et al,* 1996). NACO surveillance data showed a prevalence of 1.5% to 11.85%.

Candidiasis is second in the list of opportunistic infections found in 57% of the cases. A fall in the prevalence of this infection from 66% in 1986-1992 to 57% in 1997 may be attributed to better diagnosis and differentiation of oral hairy leukoplakia from candidiasis. Other opportunistic infections like PCP, toxoplasmosis and Kaposi sarcoma do not show much variation from the cumulative average figures. Other infections like herpes simplex, herpes zoster, lymphoid interstitial pneumonia and AIDS dementia complex were found in low numbers.

As regards to the presenting signs and symptoms seen in the AIDS cases, fever, weight loss and chronic diarrhea were seen in a high percentage.

Lymphadenopathy was observed in only about 30% of the patients. Though chronic diarrhea was seen in 76% of the cases cumulatively, in 1997 only 47% of the cases were suffering from chronic diarrhea. Less than 5% of the injectable drug users were found to be suffering from diarrhea. Though there is no documented data on the low prevalence of diarrhea in IDUs, it also might be due to the fact that most of the injectable drug users in India are from the north-eastern part of the country which might not be an endemic area for the diarrheal diseases. The pathogenic organism in most of these cases of diarrhea could not be identified. A study on AIDS patients in Bombay found 29 cases out of 77 to be having diarrhea due to *Cryptosporidium* and *Isospora belli* (Lanjeswar *et al,* 1996 a). Another study done in Bombay again found that CMV to be the most frequent cause of diarrhea (Lanjeswar *et al,* 1996 b). Amebiasis and giardiasis were also found in some AIDS cases.

CONCLUSION

India is faced with the dilemma of tackling the dual epidemic of AIDS and tuberculosis. The impact will be great not only on the health sector but also on economic development as well. Increase in opportunistic infections will further burden the health care system in the country. The National AIDS control organization is aggressively involved in the prevention of the disease and on training the clinicians and other health care personnel in dealing with the AIDS patients. AIDS may not be curable at the moment but the most of the opportunistic infections can be effectively treated. With better diagnosis of these opportunistic infections a clearer picture will emerge and help in the management of the AIDS cases.

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