HIV-TB Co-infection in Nepal

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Abstract: Tuberculosis is considered as a major co-infection in AIDS. It is a serous challenge to Nepal. The incidence of TB as the life time risk of developing TB in HIV infected person is 50%. It is estimated that in the year 2002, some 2.4% might have TB-HIV co-infection in Nepal. The most frequently affected age group is 20-29 years. The central and western region of Nepal has highest number of HIV-TB co-infection.

Keywords: HIV, Tuberculosis, Nepal.

Introduction

From the very beginning of diagnosis of AIDS in 1981, many co-infections, opportunistic infections and HIV-related conditions have been described. Among the major manifestation of AIDS, fever, weight loss and diarrhea are considered important for the surveillance purpose in high prevalence countries. Tuberculosis is considered a major co-infection in AIDS. As the level of immunity transferred by T-cells goes down, the chances of reactivation of dormant tuberculosis increases. Nepal is considered as one of the countries with high prevalence of tuberculosis, and HIV is emerging as a major public health problem. WHO estimates that more than 12 million people, 98% of whom are in the developing countries are coinfected with HIV and TB, of which 1.8 million are in SAARC Region. TB is considered the biggest killer of people who are infected with HIV accounting for one third of all deaths worldwide and 40% of AIDS deaths in Asia. So, examination of these "two-deadly duos" is deemed necessary in Nepalese context.

Objectives

The objectives of the study was to:

- Analyze the situation of HIV/AIDS in terms of co-infection with tuberculosis and recommend for appropriate actions.

Methods

All the reports received at National Center for AIDS and STI Control (NCASC) with diagnosis of HIV and Tuberculosis form the basis of this study. The study period is 16 years (July 1988 to June 2003).

Limitation:

The study is based on the reported AIDS cases submitted to the NCASC and so it is very much confined to the reported information.

Findings

Table 1: Number of HIV/AIDS cases during the study period

Year	Reported HIV/AIDS cases	Total AIDS cases	Total AIDS cases in the given period
1988	4	2	
1989	2	0	
1990	5	2	14
1991	26	5	
1992	77	5	
1993	81	10	
1994	40	11	
1995	110	15	168
1996	135	32	
1997	489	100	
1998	220	54	
1999	222	54	
2000	396	165	
2001	324	85	473
2002	467	84	
2003 (Up to June)	344	31	
Total	2942	655	655

As seen from the table 1, the number of reported AIDS cases are fluctuating every year. However, grouping them in 5 years period clearly demonstrates the increasing trend.

Table 2: Number of tuberculosis cases among the AIDS cases

Year	Total reported AIDS cases	Total reported Tuberculosis cases	Total co-infection in the given period
1988	2	2	
1989	0	0	
1990	2	2	14
1991	5	5	
1992	5	5	
1993	10	4	
1994	11	3	
1995	15	12	99
1996	32	10	
1997	100	69	
1998	54	41	
1999	54	37	
2000	165	92	
2001	85	67	312
2002	84	46	
2003 (Up to June)	31	26	
Total	655	425	425

As in table 1, the table 2 shows that the number of persons co-infected with Tuberculosis is also in sharp rise in the given periods.

Table 3: Age distribution of HIV and TB co-infection

Age group	Number	%
< 10 years	1	0.2
10-19 years	19	4.5
20-29 years	204	48.0
30-39 years	167	39.3
40-49 years	30	7.1
50 + years	4	1.0
Total	425	100

The table clearly shows that the most productive age groups are affected most: 20-39 years age group covers 87% of the total co-infection. The mean age of HIV-TB co-infection was found to be 29 years.

Table 4: Sex wise distribution of HIV-TB co-infection

Sex	Total AIDS cases	Total Tuberculosis cases	%
Male	457	317	69.4
Female	198	108	54.5
Total	655	425	100

The Higher prevalence among the males might reflect the present pattern of infection of HIV/AIDS in Nepal. However one striking factor is that Females are having the co-infection in over 50% cases whereas HIV infection in women is reported to be less than 30% in Nepal.

Table 5: Reported mortality among HIV-TB co-infected by sex

Sex	Total co-infected (HIV and TB)	Total reported Deaths	%
Male	317	69	21.8
Female	108	41	38.0
Total	425	110	25.9

This table shows that in contrast to the table 4 above, the mortality is almost double among females who have HIV-TB co-infection.

Table 6: Co-infection spread pattern

Region	Total co-infected	%
Far- West	33	7.8
Mid- West	19	4.5
Western	164	38.5
Central	165	38.7
Eastern	30	7.1
District not mentioned	14	3.5
Total	426	100

The Central and Western Region of Nepal have reported higher number of HIV-TB co-infection (about 77% of total). This is roughly similar to the pattern of spread of HIV in Nepal in the first few years of the epidemic.

Discussion

HIV/AIDS has emerged as the significant formidable challenge to public health. An estimated 42 million people are presently living with HIV/AIDS and over 25 million people have died of AIDS worldwide since its first recognition in 1981. It is estimated that about two billion people are infected with tuberculosis worldwide. It is also estimated that globally, 12% of the TB patients are infected with HIV. Of these co-infected, 68% live in Sub-Saharan Africa and 22% in South East Asia. In 1990, TB and HIV co-infection contributed for 4% of all TB cases, which has increased to 15% by 2000. (1) Of the estimated total 3 million AIDS deaths in 2001, 1.7 million (57%) were due to tuberculosis.

It has been observed that more HIV infected people die due to Tuberculosis than due to any other opportunistic infection. It is estimated that in 2002 only, AIDS caused 3.1 million deaths (5) and Tuberculosis kills about 2-3 million deaths every year (6). It has been reported that between 56-80% AIDS cases diagnosed in Thailand, India, Nepal and Myanmar also have TB. Besides, it is projected that 20-25% of the TB cases in some parts of South East Asia Region would be directly attributed to HIV in the next 3-5 years.

Tuberculosis and HIV/AIDS are supposed to fuel each other in a deadly spin. One in every three HIV infected person is supposed to be co-infected with TB bacteria, and every third of them is considered to be dying of this co-infection. It is reported that case fatality rates have increased from <5% to >20% in the worse affected countries (1)

Both the diseases offer fertile ground for double discrimination to those infected: both socially and biologically. Socially, TB patients are still stigmatized and discriminated, not to talk about HIV infected. Biologically, HIV weakens the immune system and makes people highly vulnerable to TB, whereas immune response to mycobacterium enforces HIV replication and may accelerate the natural progression of HIV infection. This is why there is huge challenge to the health workers devoted in the field of TB and AIDS control.

It is recognized that the HIV epidemic can rapidly increase the incidence of TB as the life time risk of developing TB in HIV infected person is 50% (6).

HIV sentinel surveillance carried out among the newly diagnosed tuberculosis cases over the last 10 years show the increasing prevalence of HIV-TB co-infection (7). It is estimated that in the year 2002, some 740 TB patients (i.e. 2.44%) might have TB-HIV co-infection in Nepal (7).

Compared to two previous studies (2,3) the prevalence of tuberculosis in HIV infected person seems decreasing. However, it is still the most significant entity to influence the "symptomatic HIV infection" brought into notice by the health institutions of Nepal.

It is seen from the table 3 that most frequently affected age group is 20-29 years. That means the younger age group is affected most. The figures also indicate that men are affected almost three times than the female (male to female ratio being 3:1) and the same pattern is seen in reported HIV infection. Even for the reported tuberculosis cases the same ratio is maintained. It is surprising to see these correlations, which demand for further investigations to find out the factors behind it.

The frequency of HIV-TB co-infection is high in the centers where hospitals are based or have the good catchments area. Nevertheless, out of 75 districts, people from 62 districts are reported to have HIV-TB co-infection with high number in 13 districts (namely Kathmandu (52 cases), Palpa (32), Rupandehi (30), Kapilbastu (21), Lalitpur (20), Dhading (14), Chitwan (14), Nawalparasi (14), Gorkha (14), Achham (13), Syangja (12), Nuwakot (11) and Sindhupalchok (10 cases) contributing for about 62% of all reported cases. This indicates towards the strong collaborative program approach to deal with the co-infection. So, appropriate design to tackle the co-infection by two programs is very important.

Conclusion

HIV-TB co-infection is coming up as a serious challenge to the health sector of Nepal with its grave impacts. As the HIV infections are increasing, the chances of acquiring Tuberculosis increase. There is clear tendency of affecting the young and productive age group, which will have serious impacts in the socio-economic life, not to talk about the health impacts and stigma and discrimination. All these factors demand for strong program component to address the "double epidemic".

Recommendation

- Both the HIV/AIDS and Tuberculosis control programs should devise strong components to deal with the serious impacts the co-infection will pose.
- Relatively low prevalence of the co-infection among the females, but very high mortality rate among them, demands further study and appropriate interventions.
- There are good opportunities for taking action: DOTS program in National Tuberculosis Programs, Voluntary Counseling and Testing (VCT) services, STI, Antiretroviral Therapy Clinics in the National AIDS Control Programs.

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