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Clinical Presentations of HIV/AIDS Patients Admitted in Tertiary Care Hospitals in Bangladesh

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Abstract: ***Background: The current estimates suggest HIV prevalence rates of Bangladesh are negligible even among the most - at - risk population groups. However, in health care setting this infection are not so uncommon. But till date very few comprehensive studies are found to summarize the clinical presentation of HIV/AIDS patients in our settings. Therefore, the study was designed to evaluate the clinical presentations in patients with HIV/AIDS attending in tertiary care hospital. Methods: This hospital based cross - sectional observational study was conducted at the Department of Medicine in Dhaka Medical College Hospital and Infectious Disease Hospital for a period of 6 months following approval of this protocol. All patients of HIV/AIDS as diagnosed by the hospital authority in aged 13 years and above and of both sexes were enrolled in the study. Written informed consent was taken from the all study subjects. Ethical issues were ensured in accordance with the Declaration of Helsinki. Data were collected by interview using a preformed questionnaire. Collected data were analyzed by the SPSS 23 (SPSS Inc, Chicago, IL, USA). Results: Among 15 patients, male were predominant (93.3% - male vs. 6.7% - female). Mean age was 42.46±9.34 (SD) years. Most prevalent age group was 41 - 50 (46.7%) years. About 73.3% subjects hailed from urban areas. Among the risk factors, unsafe heterosexual behavior were found in 66.7% cases followed drug abuser (26.7%) and history of transfusion (6.7%). Almost all patients complained about generalized weakness (100%). Other prominent clinical features were fatigue (80%), prolong fever (73.33%), loss of appetite (73.33%), chronic diarrhea (73.33%), abdominal pain (73.33%), body ache and joint pain (73.33%), cough (66.66%), weight loss (60%). On the other hand, lymphadenopathy (73.33%), oral thrush (53.33%) and pulmonary tuberculosis (33.33%) were the most frequent reason for their hospital visit. Conclusion: HIV infections were more common in urban areas among educated people. It usually presented with generalised weakness, prolonged fever, chronic diarrhoea, lymphadenopathy, oral thrush and pulmonary tuberculosis. As sample size were small therefore, further larger cohort study is needed to get a more precise and details picture of the clinical presentations of HIV/AIDS patients.***

Keywords: HIV, AIDS, Clinical presentations

1.Introduction

The first case of HIV/AIDS in Bangladesh was detected in 1989. (1) The national AIDS/STD programme of Ministry of Health and Family Planning Welfare (MoHFW) estimated that 9000 people in Bangladesh are living with HIV. About 1100 New HIV infection is occurring each year. (2) Though the majority of HIV - infected population lives in developing nations, there is a paucity of data on natural history, pattern of disease and survival of hospitalized patients with HIV/AIDS from these regions. It is well established that manifestations of AIDS are influenced by factors such as endemic infections and malnutrition that are widely prevalent in these regions. (3) Even more ominous has been the shift of the epidemic from high - risk groups such as injectable drug users (IDU) and patients with other sexually transmitted diseases to low - risk groups like married, monogamous women. (4) Conventional disease staging criteria which were developed in western populations may not hold well in these settings. (3, 5) Added to this, resource constraints prohibit evaluation and decision - making based on cost and labor - intensive methods such as CD4+ cell counts and viral RNA load estimation. Timely initiation of prophylaxis for opportunistic infections (OIs) and their prompt recognition and treatment are the only economically viable options. (6) Although the prevalence of HIV remains very low (<0.1%) in the general population and low (<1%) in most at - risk populations (MARPs) (7, 8) , by the end of 2009, the MoHFW in Bangladesh had confirmed 1, 745 HIV cases, 619 of which had developed acquired immunodeficiency syndrome (AIDS) and 204 had died. (9) In the developed world, the management of HIV/AIDS has been transformed by the widespread availability of antiretroviral and management of opportunistic infections. In Bangladesh, a limited range of (first - line) antiretroviral has been available since 2003. (9) TB was the most frequently - recorded diagnosis and the attributable cause of death in our series. Worldwide, it is estimated that 8% of new TB cases are attributable to HIV infection, and data from 2006 showed that 200, 000 persons globally died from HIV - TB co - infection (10) . TB is commonly diagnosed in HIV patients in other case

series within Asia. Three other case series reflect a much higher TB diagnosis rate than we encountered in our patient - group. So, the study was planned plan do a hospital based cross sectional observational study to see the clinical presentations of HIV/AIDS patients in tertiary care hospitals in Bangladesh.

2.Objective

To assess the clinical patterns of different diseases, opportunistic/co - infections in HIV/AIDS patient and the demographic pattern among the study population.

3.Literature Survey

HIV infection and acquired immune deficiency syndrome (AIDS) is a spectrum of conditions caused by infection with the human immunodeficiency virus. HIV is a Lentivirus that causes progressive failure of the body's immune system rendering it susceptible to infections and neoplasms. (15, 16) The immune compromise caused by HIV is characterized by a loss of CD4+ T cells. Rates of HIV - associated complications and death increase as the number of these cells in peripheral blood declines and viral load increases. (16, 17) . HIV infection represents a major public health problem for both developing and developed countries as it has grown to pandemic proportions worldwide and has dramatically increased the global burden of disease. (18, 19) According to WHO, since the beginning of the epidemic, more than 70 million people have been infected with the HIV virus and about 35 million people have died of HIV. Globally, about 36.9 million [31.1–43.9 million] people were living with HIV at the end of 2017. (20) Sub - Saharan Africa is the region most affected and South Africa has the largest population of people living with HIV in the world. (20) Although, new HIV infections have declined significantly in western and central Africa in the last decade, these regions still account for 22% of total global infections. Progress has been more gradual in Asia and the Pacific. In 2015, an estimated five million people were living with HIV in South, South - East, and East Asia combined. Five countries (India, Indonesia, Myanmar, Nepal, and Thailand) account for the majority of HIV infections in the same region. (21) Among the Asian countries China and India has the highest prevalence of HIV/AIDS (15). The first case of HIV in Bangladesh was detected in 1989 and up until December 2016 the total numbers of detected cases were 4, 721 of whom 799 have died, leaving 3, 922 known people living with HIV. However the actual number is still unknown due to limited and incomplete surveillances. (21) Although, the prevalence of HIV in Bangladesh is estimated to be less than 0.1% in general population, the nation remains extremely vulnerable due to its socio - economic and cultural settings. Bangladesh is one of the four countries in the region where the epidemic continues to increase. It is estimated that without any intervention the prevalence in the general population could be as high as 8% by 2025. (20) The risk of acquiring HIV is unevenly distributed within countries, both geographically and among different subpopulations. It is predominantly a disease of the young adult and adult population. Benhildah et al. conducted a systemic review and found the age ranges mainly between 27 and 40 years with up to 11.5 times the risk. (22) Previously it was mostly considered as a disease of the young but the prevalence of HIV among elderly is rising. According to Global Summary of the AIDS epidemic 2017, about 5000 new infections of HIV occurs per day; amongst whom almost 43% are women. (30) . Black ethnicity shows 6.8 times risk than general people. (22) . The HIV/AIDS virus causes infection by living in a 'cellular reservoir' where it can stay hidden within the blood cells for years on end. Latent reservoirs for the disease are placed throughout the body, and organs such as the brain, lymphoid tissue, bone marrow, and the genital tract all serve as areas where the virus can remain hidden. (15, 24) HIV is transmitted principally in three ways: by sexual contact, by blood (through transfusion, blood products, or contaminated needles) or by passage from mother to child. HIV can be found in the semen and vaginal fluids of a person who is HIV positive. Anal sex is the highest - risk sexual act, followed by vaginal sex, and then multiple partner sex as listed in order of highest - to - lowest in transmission rates. (15) The most important factor that increases the risk of sexual transmission of HIV is the number of HIV RNA copies per mL of fluid (viral load). Other factors associated are genital ulcers of any cause, herpes simplex type - 2 infection and bacterial vaginosis and anal trauma. Worldwide, the major route of transmission is heterosexual but homosexuals and/or bisexual men have 1.8 to 2.7 times more risk. (29, 32) The second most frequent mode of HIV transmission is via blood and blood products. Blood - borne transmission can be through needle - sharing during intravenous drug use, needle stick injury, transfusion of unscreened or contaminated blood or blood product, or medical injections with unsterilized equipment. (17, 26) Benhildah et al. conducted a systemic review titled 'Predictors of human immunodeficiency virus (HIV) infection in primary care among adults living in developed countries: a systematic review' and found that HIV infection was associated with clinical features: (i) flu - like symptoms including fever/chills and cough (ii) rash (iii) weight loss and (iv) diarrhea. Co - morbidities found were - respiratory conditions such as pneumonia and pneumocystis in 52% of the HIV - infected patients, dermatological conditions like psoriasis and herpes zoster. The evidence revealed that HIV infection was significantly associated with peripheral neuropathy. The gastroenterological conditions identified were oral candidiasis, hepatitis B and liver diseases (1 study), affecting 22%of the HIV - infected patients. One oncological conditions identified was Non - Hodgkin's lymphoma. (22) 'Clinical features of HIV positive patients attending a tertiary care hospital of north India' conducted be Neha Wal et al among 317 HIV infected patients revealed that the common symptoms were weakness, bodyache and joint pain, lethargy and fatigue, prolonged fever, weight loss, cough, loss of appetite and chronic diarrhoea. The overall proportion of symptomatic patients was significantly higher than the number with an etiologically documented opportunistic infections. Pulmonary tuberculosis was the most frequently documented opportunistic infection. (18)

4.Methodology

This hospital based cross - sectional observational study was conducted at the Department of Medicine in Dhaka Medical College Hospital, and Infectious Disease Hospital for a period of 6 months following approval of this protocol. After calculating, total 15 patients were included for final analysis. All patients of HIV/AIDS as diagnosed by the hospital authority in aged 13 years and above and of both sexes were enrolled in the study with Simple convenient sampling. Written informed consent was taken from the all study subjects. Ethical issues were ensured in accordance with the Declaration of Helsinki. Data were collected by interview using a preformed questionnaire. Collected data were analyzed by the SPSS 23 (SPSS Inc, Chicago, IL, USA.

5.Result

This study was performed in the Department of Medicine, Dhaka Medical College and Hospital and Infectious Disease Hospital, Dhaka. Fifteen patients diagnosed as case of AIDS were taken for this study. Mean Age of the participants was 42.46±9.34 years. Majority respondents belonged to age group 41 - 50 (46.7%) years and followed by in decreasing order 31 - 40 years (33.3%), 21 - 30 years (13.3%) and 51 - 60 years (6.7%) [Table 1]. Majority respondents hailed from urban area 73.3% and only 26.7% hailed from rural area [Table 1]. Among 15 respondents, 93.3% respondents were male and others were female [Table 1]. Around 86.7% respondents were Muslim and 13.3% respondents were followers of other religions [Table 1]. Majority respondents were studied up to secondary school (53.3%) and followed by in decreasing order, primary school (33.3%), and illiterate (13.3%) [Table 1]. Majority respondents were drivers by occupation (53.3%), day - laborers (26.7%), unemployed (13.3%) and sex worker (6.7%) [Table 1]. Of all, Majority respondents belonged to Middle economic class (53.3%) followed by in decreasing order, lower class (40%) and upper class (6.7%) [Table 1]. Majority respondents (66.7%) were hetero - sexual which is a risk factor for HIV/AIDS and followed by in decreasing order 26.7% were drug users and 6.7% had history of transfusion [Table 2]. Major clinical feature of respondents were generalized weakness (100%) and lethargy and fatigue (80%). Other symptoms were in decreasing order prolong fever (73.33%), Loss of appetite (73.33%), Chronic diarrhea (73.33%), abdominal pain (73.33%), body ache and joint pain (73.33%), cough (66.66%), weight loss (60%), oral lesion (53.33%), constipation (40%), skin rash (40%), headache (33.33%), chest pain (33.33%) and bight sweats (20%) [Table 3]. Majority of respondents had lymphadenopathy (73.33%), oral thrush (53.33%) and pulmonary tuberculosis (33.33%). Others presentation were pneumonia (13.33%), single brain lesion (13.33%), multiple brain lesion (6.66%), infective endocarditis (6.66%) and oesophagitis (6.66%) [Table 4]. All respondents had developed opportunistic infection and 53.33% respondents had more than one. Majority of respondents had candidiasis (53.33%) and followed by in decreasing order Pulmonary TB (33.33%), Herpes Zoster (20%), Pleural TB (13.33%), Tubercular meningitis (13.33%), Lymphadenitis TB (13.33%), Miliary TB (6.66%) [Table 5].

Table 1: Distribution of respondents by socio - demographic characteristics

Socio demographic characteristics	Frequency	Percentage
Age		
21 - 30 years	2	13.30%
31 - 40 years	5	33.30%
41 - 50 years	7	46.70%
51 - 60 years	1	6.70%
Residence		
Rural Area	4	26.70%
Urban Area	11	73.30%
Gender		
Male	14	93.30%
Female	1	6.70%
Religion		
Muslim	13	86.7%
Others	2	13.3%
Education		
Illiterare	2	13.30%
Primary School	5	33.30%
Secondary School	8	53.30%
Occupation		
Driver	7	53.30%
Day laborer	1	26.70%
Sex worker	4	6.70%
Unemployed	2	13.30%
Govt service	1	6.7%
Economic Class		
Lower Class	6	40%
Middle Class	8	53.3%
Upper Class	1	6.7%

Table 2: Distribution of respondents by Risk Factors

Risk Factor	Frequency	Percentage
Drug User	4	26.70%
Hetero - sexual	10	66.70%
Transfusion	1	6.70%
Total	15	100

Table 3: Clinical features of respondents (n=15)

Symptoms	Frequency (n)	Percentage (%)
Prolong fever	11	73.33
Weight Loss	9	60
Cough	10	66.66
Loss of appetite	11	73.33
Chronic Diarrhea	11	73.33
Abdominal Pain	11	73.33
Nausea - Vomiting	8	53.33
Constipation	6	40
Weakness	15	100
Body and Joint pain	11	73.33
Lethargy and fatigue	12	80
Headache	5	33.33
Skin rash	6	40
Oral lesion	8	53.33
Night Sweats	3	20
Chest Pain	5	33.33

Table 4: Distribution of respondents by clinical presentation during admission (n=15)

Clinical presentation	Frequency (n)	Percentage (%)
Pulmonary TB	5	33.33
Pneumonia	2	13.33
Single brain lesion	2	13.33
Multiple brain lesion	1	6.66
Encephalopathy	1	6.66
Lymphadenopathy	11	73.33
Oral Thrush	8	53.33
Oesophagitis	1	6.66
Infective endocarditis	1	6.66

Table 5: Distribution of respondents by presence of opportunistic infection (n=15)

Opportunistic Infection	Frequency (n)	Percentage (%)
Pulmonary TB	5	33.33
Plueral TB	2	13.33
Candidiasis	8	53.33
Herpes - Zoster	3	20
Miliary TB	1	6.66
Tubercular Meningitis	2	13.33
Lymphadenitis TB	2	13.33
More than one	8	53.33

6.Discussion

In Bangladesh, the HIV infection rates are still low, but are now rising day by day. (1) Human Immunodeficiency Virus clinical presentation is known to be complex since AIDS was described in 1981 (2, 3) . HIV can manifest in a variety of ways depending on the organs affected and concurrent infections prevalent in the area. The initial clinical presentation may mimic symptoms of common endemic diseases in that particular region. (4, 5). However, the severity of manifestation depends on the infected individual's baseline health status. The most significant early manifestation of HIV infection was marked by slim disease (diarrhea and wasting); tuberculosis; variety of Opportunistic Infections (OI); weight loss, fever; and dermatological symptoms. (5, 6) With the exception of tuberculosis which continues to increase, other AIDS related diseases are declining gradually due to the widespread use of OI drugs. Mean Age of the participants was 42.46±9.34 years, Majority respondents belonged to age group 41 - 50 (46.7%) years and 33.3% were in group 31 - 40 years, 13.3% were in 21 - 30 years and 6.7% were in 51 - 60 years. In a similar study by Shukla et al the distribution of the patients according to the age showed that most of the patients (81.45%) were in the age group of 20–45 years. (8) Okeke et al did similar type of study and found the mean age of study population 30.9 ±8 years. The most frequent age group was 25 – 29 years, followed by 20 – 24 years. (9) Another study by Agarwal et al. found mean age 32.5±8 years. The results of these study results don't corroborate with the findings of present study due to small sample size of the study. Among 15 respondents, 93.3% respondents were male and others were female in present study. Agarwal et al. also found male as predominant with 87.5% which corroborates with the findings of present study. (10) Majority respondents hailed from urban area 73.3% and only 26.7% hailed from rural area. A study by Monyika et al. found similar findings in a similar study. (11) Another study finding by Marum et al also corroborate with this study (12). Around 86.7% respondents were Muslim and 13.3% respondents were followers of other religions. A review by Gray surveyed published journal articles containing data on HIV prevalence and religious affiliation showed that six of seven such studies indicated a negative relationship between HIV prevalence and being Muslim. (13) Our study results don't corroborate with this statement because maximum people living in Bangladesh and also because of limited sample size. Majority respondents were studied up to secondary school (53.3%) and followed by in decreasing order, primary school (33.3%), and illiterate (13.3%). No respondent was properly educated. A similar study by Neha et al. found 69.1% respondents as primary school educated or illiterate, 22.7% respondents as studied up to high school and 8.2% as graduate. (14) There had been found negative relationship between education and HIV prevalence. Around 66.7% respondents gave history of hetero sexuality, 26.7% were injectable drug users and 6.7% had history of transfusion. A study by Haider et al. stated that the most at - risk populations include IDUs, CSWs, babus (the regular boyfriends of CSWs), men who have sex with men (MSM), and migrant workers. Prevalence in this vulnerable population has tripled over the last six years. Changes in sexual behavior an increase in HIV infection in IDUs from 1.8% in 2001 to more than 4.9% in 2005. (27). Major clinical feature among respondents were generalized weakness (100%) and lethargy and fatigue (80%). Other symptoms were in decreasing order prolong fever (73.33%), Loss of appetite (73.33%), Chronic diarrhea (73.33%), abdominal pain (73.33%), body ache and joint pain (73.33%), cough (66.66%), weight loss (60%), oral lesion (53.33%), constipation (40%), skin rash (40%), headache (33.33%), chest pain (33.33%) and night sweats (20%). As symptoms, most respondents had lymphadenopathy (73.33%), oral thrush (53.33%) and pulmonary tuberculosis (33.33%). Others presentations were pneumonia (13.33%), single brain lesion (13.33%), multiple brain lesion (6.66%), infective endocarditis (6.66%) and oesophagitis (6.66%). A similar study by Neha et al. found 85.5% of the patients were symptomatic. The commonest symptoms were weakness (65.6%), body ache and joint pain (63.4%), lethargy and fatigue (62.5%) followed by prolonged fever (53.3%), weight loss (47.6%), cough (44.5%), loss of appetite (44.2%) and chronic diarrhoea (40.1%). A total of 103 (32.5%) of the patients had documented opportunistic infections. Tuberculosis (30.9%) was the most common opportunistic infection, followed by TBM (1.6%) and candidiasis (0.6%). (61). All respondents had developed opportunistic infection and 53.33% respondents had more than one. Majority of respondents had candidiasis (53.33%) and followed by in decreasing order Pulmonary TB (33.33%), Herpes Zoster (20%), Pleural TB (13.33%), Tubercular meningitis (13.33%), Lymphadenitis TB (13.33%), Miliary TB (6.66%). A similar study by Shahrin et al. revealed that the most common presumptive opportunistic infections were tuberculosis, TB meningitis, oesophageal candidiasis (odynophagia, anorexia, or

burning sensation in the throat); cytomegalovirus infection (retinitis, colitis, oesophagitis), GI symptoms (bloody diarrhea, abdominal pain, colitis), Pneumocystis jirovecii pneumonia, histoplasmosis and cerebral toxoplasmosis. Four had non - Hodgkin's lymphoma, two had central nervous system tumours, and one each had Kaposi's sarcoma, mediastinal sarcoma, cervical cancer, carcinoma of the tongue and adenocarcinoma of the colon which corroborate with findings of our present study to some extent. (28) Common symptoms in the present study as in other similar studies are generalized symptoms like weakness, bodyache& joint pains and lethargy & fatigue were present in more than sixty percent of the patients followed by fever, weight loss, cough, loss of appetite and chronic diarrhoea. While some of the large variety of symptoms noted may be due to the HIV infection itself or antiretroviral therapy related, they can also be due to opportunistic infections like bacterial, fungal or viral pneumonias, hepatitis, cryptococcal meningitis, toxoplasmosis, oesophageal candidiasis, extra pulmonary tuberculosis and cryptosporidial or isosporidialdiarrhoea, which need to be established by laboratory testing. (29–34)

7.Conclusion

In this study, people of fifth decade of age were frequently affected by HIV/AIDS infection with male preponderance. It is more common in urban population. They commonly present with generalized weakness, fatigue, prolonged fever, loss of appetite, chronic diarrhea and abdominal pain. While lymphadenopathy, oral thrush and pulmonary tuberculosis were the most frequent reason for their hospital visit. As sample size were small therefore, further larger cohort study is needed to get a more precise and details picture of the clinical presentation of HIV/AIDS patients.

8.Future Scope

Sample size of the study was small. Further larger study is recommended so that we can understand the Clinical presentations of HIV/AIDS patients in Bangladesh for early recognition and management of these patients.

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