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The Gastrointestinal Manifestations Of HIV/AIDS Patients In Bangladesh

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Abstract:

Introduction: *AIDS is defined by the development of specified opportunistic infections, cancers, and severe manifestations of HIV itself. Gastrointestinal disease in human immunodeficiency virus (HIV) spans the entire GI tract from the mouth to the rectum. The spectrum of gastrointestinal symptoms in HIV ranges from odynophagia and dysphagia to nausea and vomiting, abdominal pain, and finally diarrhea and tenesmus. This study aimed to analyze the gastrointestinal manifestations in HIV/AIDS patients in Bangladesh.*

Methods: *This observational cross-sectional analytical study was conducted at the ART corner and Department of Gastroenterology, Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka among adult HIV-infected or AIDS patients aged more than 18 years. A total of 135 patients were taken as per inclusion criteria. The study duration was from March 2018 to February 2019. After proper counseling, informed written consent was taken from every participant. All cases were evaluated by taking proper history, and the patients were asked to report and give a description of the current GI problems they experienced in the last six months before the diagnosis of HIV/AIDS. Then patients were thoroughly examined to identify further GI manifestations e.g. oral candidiasis, Diarrhea, acute diarrhea, chronic diarrhea, nausea, vomiting, dyspepsia, dysphagia, chronic abdominal pain, constipation, hematemesis, hematochezia, jaundice, HBV infection, HCV infection. All the previous and current investigation reports and medical records were reviewed to identify the GI manifestations and recorded as per the data sheet. Information about demographic, lifestyle and clinical profile and laboratory parameters were collected on the predesigned data sheet. The incidence of at least one gastrointestinal symptom and the number of experienced symptoms were also recorded. Non-probability convenient sampling technique was used in this study. Data were analyzed and calculated using the Statistical Package for Social Sciences (SPSS version 20.0) and Microsoft Excel 2016.*

Results: *This study shows that the majority of patients belonged to age 30- 39 years (36.9 %). The mean age was 39.6 ±10.1 years with a range from 18 - 67 years. Chronic diarrhea was the most common GI manifestation found in 53 (39.3%), followed by oral candidiasis in 38 (28.1%), nausea and/or vomiting in 34 (25.2%), dysphagia/odynophagia in 19 (14.1%), chronic abdominal pain in 15 (11.1%), dyspepsia in 8 (5.9%), GI bleeding in 8 (5.9%), heartburn/regurgitation in 7 (5.2%), constipation in 5 (3.7%), acute diarrhea in 3 (2.2%), jaundice in 3 (2.2%), chronic hepatitis C virus in 2 (1.4%) and chronic hepatitis B virus in 1 (0.7%). This study also shows that the majority of patients were male 89 (65.9 %); 45 (33.4 %) patients were female and 1(0.7%) patient was transgender. The male-female ratio was 1:0.5.*

Conclusion: *In this study, about 60% of HIV patients had different GI manifestations during their initial presentation and 38.5% of ART-treated HIV patients were suffering from GI problems. Chronic diarrhea was the most common initial GI manifestation (39%) and oral candidiasis was the most common GI manifestation during*

treatment (14%). As HIV/AIDS patients commonly present with GI manifestations, clinicians including gastroenterologists and health care professionals should be aware of the early diagnosis, and treatment to prevent its further dissemination.

Key Words: *Gastrointestinal, Manifestations, AIDS*

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I. INTRODUCTION

HIV is an enveloped ribonucleic acid (RNA) retrovirus from the lentivirus family. [1] Human immunodeficiency virus infection/ acquired immunodeficiency syndrome (HIV/AIDS) is a disease of the human immune system caused by infection of the human immunodeficiency virus (HIV). The United Nations Political Declaration on HIV and AIDS is a "Fast-Track strategy to Accelerate the Fight against HIV and to End the AIDS epidemic by 2030" which was adopted at the United Nations General Assembly High–Level Meeting on AIDS in June 2016 [2]. Approximately 1.7 million people were newly infected with HIV and 770,000 people died due to AIDS-related causes in 2018 [3]. Global scale-up of antiretroviral therapy has contributed to a 55% decline in deaths from AIDS-related causes, from a peak of 1.9 million in 2005 to 770,000 in 2018 [3]. As a result despite the global decline in the number of new cases of HIV infection in recent years, the number of people living with HIV/AIDS is increasing. From a global perspective, the number of individuals living with the disease now exceeds 37.9 million [3]. Thus antiretroviral therapy has transformed HIV from a progressive illness with a fatal outcome into a chronic manageable illness with new perspectives for management and treatment [4]. At the same pace, new challenges emerge to be addressed like the management of gastrointestinal problems which are very common in HIV/AIDS patients. Although antiretroviral therapy (ART) has contributed substantially to increasing the life expectancy of people having HIV/AIDS, short and long-term adverse effects may compromise adherence to drug treatment and impair quality of life [5]. Gastrointestinal symptoms (GIS) are among the short-term adverse effects of ART, usually transient, with resolution within a few months of ART use [6]. Gastrointestinal symptoms may also be a result of HIV infection itself [7]. Depletion of immune cells leads to increased susceptibility to opportunistic infections in the gastrointestinal tract of HIV-infected individuals, damaging the gastrointestinal mucosa [8].[9] The emergence of gastrointestinal symptoms may be related to nutritional status and sex. [10] A high incidence of gastrointestinal symptoms among people living with HIV/AIDS, and was significantly associated with female sex and tobacco use. Moreover, GI problems are frequently found in people with low immune function (CD4 counts < 200 cells/mm^3) [11]. The best estimates suggested that before a combination of antiretroviral therapy is initiated, 50-93% of all patients with HIV disease had marked GI symptoms during their illness [12]. The first case of HIV/AIDS in Bangladesh was detected in 1989 (UNICEF). UNAIDS estimates that the number of people living with HIV in the country in 2018 is 14,000 which is within the range of the low estimate by UNICEF's State of the World's Children Report [3] The overall prevalence of HIV in Bangladesh is less than 0.01%, however, high levels of HIV infection have been found among injecting drug abusers, commercial sex workers, men who sex with men and transgender people. Due to the limited access to voluntary counseling and testing services, very few Bangladeshis are aware of their HIV status. Although still considered to be a low-prevalence country, Bangladesh remains extremely vulnerable to an HIV epidemic, given its poverty, overpopulation, gender inequality, and high levels of transactional sex. Approximately 1600 people were newly infected with HIV and 1000 people died due to AIDS-related illness in Bangladesh in 2018 [3]. It is estimated that without any intervention the prevalence in the general adult population could be as high as 8% by 2025 [13].

II. OBJECTIVE

General Objective

- To identify the gastrointestinal manifestations in HIV/AIDS patients in Bangladesh

Specific Objectives

- To see the prevalence of gastrointestinal manifestations in HIV/AIDS patients in Bangladesh during their initial presentation and while in treatment.
- To know GI manifestations of HIV/AIDS patients while they were on ART.

III. METHODS

This observational cross-sectional analytical study was conducted at the ART corner and Department of Gastroenterology, Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka among adult HIV-infected or AIDS patients aged more than 18 years. A total of 135 patients were taken as per inclusion criteria. The study duration was from March 2018 to February 2019. At first, HIV-infected patients were selected as per inclusion and exclusion criteria. After proper counseling, informed written consent was taken from every participant. All cases were evaluated by taking proper history, thorough physical examination, and the necessary investigations. In an interview, patients were asked to report and give a description of the current GI problems and GI problems they experienced in the last six months before the diagnosis of HIV/AIDS. Then patients were thoroughly examined to identify further GI manifestations e.g. oral candidiasis, Diarrhea, acute diarrhea, chronic diarrhea, nausea, vomiting, dyspepsia, dysphagia, chronic abdominal pain, constipation, hematemesis, hematochezia, jaundice, HBV infection, HCV infection. All the previous and current investigation reports and medical records were reviewed to identify the GI manifestations and recorded as per the data sheet. The incidence of at least one gastrointestinal symptom and the number of experienced symptoms were also recorded. Verbal and written consent was taken from all participants without any influences before sample collection. Data were analyzed and calculated using the Statistical Package for Social Sciences (SPSS version 20.0) and Microsoft Excel 2016.

Inclusion Criteria

- Adults with HIV infection or AIDS aged 18 years or above, regardless of their duration of illness or ART status
- Patients who had given consent to participate in the study.

Exclusion Criteria

- Patients who underwent any gastrointestinal surgery
- Patients who did not give consent to participate in the study.
- Patients with other chronic diseases etc.

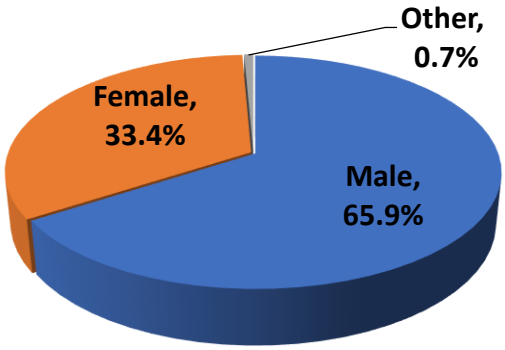
IV. RESULTS

Table 1: Distribution of patients according to age (N= 135).

Age (years)	Frequency (n)	Percentage (%)
18 - 29	19	15.6
30 - 39	45	36.9
40 - 49	34	27.9
≥50	24	19.7
Mean ±SD	39.6 ± 10.1	
Range (min-max)	18 - 67	

This table shows that the majority of patients belonged to age 30- 39 years (36.9 %). The mean age was 39.6 ±10.1 years with a range from 18 - 67 years. [Table 1]

Figure 1: Gender distribution of HIV-infected patients.



This figure shows that the majority of patients were male 89 (65.9 %); 45 (33.4 %) patients were female and 1(0.7%) patient was transgender. The male-female ratio was 1:0.5. [Figure 1]

Table 2: GI manifestations of HIV/AIDS patients during their initial presentation (N=135).

GI problems	Frequency (n)	Percentage (%)
Chronic diarrhea	53	39.3
Oral candidiasis	38	28.1
Nausea and/or vomiting	34	25.2
Dysphagia/odynophagia	19	14.1
Chronic abdominal pain	15	11.1
Dyspepsia	8	5.9
GI bleeding	8	5.9
Heartburn/regurgitation	7	5.2
Constipation	5	3.7
Acute diarrhea	3	2.2
Jaundice	3	2.2
Chronic HCV infection	2	1.4
Chronic HBV infection	1	0.7

The research shows the gastrointestinal manifestations in HIV/AIDS patients during the initial presentation. Chronic diarrhea was the most common GI manifestation found in 53 (39.3%), followed by oral candidiasis in 38 (28.1%), nausea and/or vomiting in 34 (25.2%), dysphagia/odynophagia in 19 (14.1%), chronic abdominal pain in 15 (11.1%), dyspepsia in 8 (5.9%), GI bleeding in 8 (5.9%), heartburn/regurgitation in 7 (5.2%), constipation in 5 (3.7%), acute diarrhea in 3 (2.2%), jaundice in 3 (2.2%), chronic hepatitis C virus in 2 (1.4%) and chronic hepatitis B virus in 1 (0.7%). [Table 2]

Table 3: GI manifestations of HIV/AIDS patients while they were on ART (n=122).

GI problems	Frequency (n)	Percentage (%)
Oral candidiasis	19	14.1
Dyspepsia	14	10.4
Heartburn/regurgitation	13	9.6
Nausea and/or vomiting	11	8.1
Chronic diarrhea	7	5.2
Constipation	6	4.4
Chronic abdominal pain	6	4.4
Acute diarrhea	5	3.7
GI bleeding	4	3.0
Dysphagia/ Odynophagia	4	2.9
Chronic HCV	2	1.5

Flatulence	1	0.7
Jaundice	1	0.7
Chronic HBV	1	0.7

This table shows the gastrointestinal manifestations in treated HIV/AIDS patients while they are taking ART. Oral candidiasis was the most common found in 19 (14.1%), followed by dyspepsia in 14 (10.4%), heartburn/regurgitation in 13 (9.6%), nausea and/or vomiting in 11 (8.1%), chronic diarrhea in 7 (5.2%), constipation in 6 (4.4%), chronic abdominal pain in 6 (4.4%), acute diarrhea in 5 (3.7%), GI bleeding or hematochezia in 4 (3%), dysphagia/odynophagia in 4 (2.9%), chronic HCV in 2 (1.5%), flatulence in 1 (0.7%), jaundice in 1 (0.7%) and chronic hepatitis B virus in 1 (0.7%). [Table 3]

V. DISCUSSION

The present cross-sectional analytical study was conducted in the Department of Gastroenterology and ART corner of OPD, BSMMU aimed to identify the prevalence of gastrointestinal manifestations in HIV/AIDS patients. This study shows that the majority of patients belonged to age 30- 39 years (36.9 %). The mean age was 39.6 ±10.1 years with a range from 18 - 67 years. In another study, the mean age of the male and female patients was 34.6 ± 7.51 and 33.2 ± 9.95 years respectively where the study population consisted of 19 patients.[14] This is nearly close to our study. This study showed that the majority of patients were male 89 (65.9 %); 45 (33.4 %) patients were female and 1(0.7%) patient was transgender. The male-female ratio was 1:0.5. In another study, among 137 patients, 100 (73%) were males and 37 (27%) females which was similar to our study. [14] In the present study, chronic diarrhea was the most common (39.3%) initial presentation followed by oral candidiasis (28.1%), nausea and/or vomiting (25.2%), dysphagia/odynophagia (14.1%), chronic abdominal pain (11.1%), dyspepsia (5.9%), GI bleeding (5.9%), heartburn/ regurgitation (5.2%), constipation (3.7%), acute diarrhea (2.2%), jaundice (2.2%), chronic hepatitis C virus (1.4%) and chronic hepatitis B virus (0.7%). These findings differ from the findings of another study [15] who studied 647 hospitalized HIV/AIDS patients and found oral candidiasis is the most common case at 97.1%, followed by chronic diarrhea at 23.2%, oral candidiasis with chronic diarrhea at 20.3%, dyspepsia 6.9%, ascites 6.3%, acute diarrhea 2.5%, dysphagia 1.9%, chronic hepatitis C virus 1.9%, chronic hepatitis B virus 1.3%, GI bleeding 0.9%, and acute hepatitis A virus 0.3%. These differences might occur as they have studied only hospitalized patients. The prevalence of chronic diarrhea in our patients was higher which might be due to the high-density population, poor sanitary practices and unawareness of personal hygiene, inadequate microbiological processing of food and pharmaceuticals, and defective water-distribution systems saturated with sewage pipelines [16] Opportunistic infections were more prevalent among HIV/AIDS patients in the pre-ART era. In the different studies, it was found oropharyngeal candidiasis is the commonest opportunistic infection to affect HIV-seropositive individuals, occurring in 80–90% of patients in the pre-HAART era.[17] But the high burden of mucosal candidiasis is substantiated in recent cohort reviews, and the overall prevalence has been substantially reduced by continuous use of ART [18]. Esophageal candidiasis in the pre-HAART era was the AIDS-defining illness in 11% of cases; however, rates of up to 23% had been reported in different cohorts [19]. More recent data concerning HIV patients diagnosed at advanced stages of the disease have identified a prevalence of esophageal candidiasis of up to 50% [20]. This study showed the gastrointestinal manifestations in treated HIV/AIDS patients while they are taking ART. Oral candidiasis was the most common found in 19 (14.1%), followed by dyspepsia in 14 (10.4%), heartburn/regurgitation in 13 (9.6%), nausea and/or vomiting in 11 (8.1%), chronic diarrhea in 7 (5.2%), constipation in 6 (4.4%), chronic abdominal pain in 6 (4.4%), acute diarrhea in 5 (3.7%), GI bleeding or hematochezia in 4 (3%), dysphagia/odynophagia in 4 (2.9%), chronic HCV in 2 (1.5%), flatulence in 1 (0.7%), jaundice in 1 (0.7%) and chronic hepatitis B virus in 1 (0.7%). In other studies, it was found that the most common opportunistic infection in ART-naive patients was oral candidiasis (19.1% [95% CI, 13.0%–27.3%]), and after the first year of ART, the risk of oral candidiasis declined to (2.3% [95% CI, 1.6%–3.4%]). [21] In our study, we have also found oral candidiasis as the commonest GI manifestation in ART-receiving patients living with HIV/AIDS – 12.3%. Data of endoscopy of upper GIT was available only in 7 newly diagnosed HIV patients and showed esophageal candidiasis in 3 patients (overall prevalence- 2%). The GI tract is a major site of disease in HIV infection. Diarrhea, the most common GI complaint, can occur during both acute HIV infection and advanced disease. Within days of HIV infection, an intense infiltration of virus-laden lymphocytes occurs in the bowel wall and may manifest as diarrhea during seroconverting illness [22]. Over time, chronic changes ensue with the diminution of the protective mucosal barrier.

VI. LIMITATIONS OF THE STUDY

The study was conducted in a single hospital with a small sample size and the study period was relatively shorter. So, the results may not represent the whole community.

VII. CONCLUSION

Gastrointestinal disorders remain an important cause of morbidity and mortality in HIV/AIDS patients. Though Bangladesh is a low prevalent country of HIV/AIDS, the number of new cases and people living with HIV/AIDS is increasing day by day. In our study, about 60% of HIV patients had different GI manifestations during their initial presentation and 38.5% of ART-treated HIV patients were suffering from GI problems. Chronic diarrhea was the most common initial GI manifestation (39%) and oral candidiasis was the most common GI manifestation during treatment (14%). As HIV/AIDS patients commonly present with GI manifestations, clinicians including gastroenterologists and health care professionals should be aware of the early diagnosis, and treatment to prevent its further dissemination.

VIII. RECOMMENDATION

Gastrointestinal disorders remain an important cause of morbidity and mortality in HIV/AIDS patients, so further studies should be conducted involving a large sample size and multiple centers to make a representation of the whole country's population.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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