

# Incidence of Gastrointestinal and Hepatobiliary Symptoms in HIV Patients

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**Abstract:** Introduction: Gastrointestinal and hepatobiliary disorders are among the most frequent complaints in patients with HIV disease. Advances in Antiretroviral treatment are changing the nature of HIV disease and affecting many of gastrointestinal manifestations, shifting management strategies back to disorders prevalent in non- HIV normal hosts. The clinical and histological expression of most diseases is attenuated because of the impaired immune response. In addition, most disorders that are diagnosed in patients with AIDS reflect advanced immunosuppression and occur late in the natural history of AIDS. This study was carried out to record the incidence of various gastrointestinal and hepatobiliary symptoms in patients of HIV. Method: Total 80 HIV infected patients who were under follow up or admitted in ward of a tertiary care hospital were studied for various gastrointestinal and hepatobiliary symptoms at the time of presentation. The incidence of occurrence, liver function test, stool examination for modified AFB, ultrasound abdomen, upper Gastrointestinal (GI) endoscopy or colonoscopy was performed. Results: Pain in abdomen, loose stools, dyspepsia and vomiting were predominant gastrointestinal symptoms. There was high prevalence of Acid Fast stain (cold) positive protozoa in HIV patients (diarrheal and non-diarrheal). Gastritis, esophagitis and duodenal ulcer were predominant upper GI endoscopy findings. Asymptomatic abnormal liver function is most frequent hepatobiliary manifestation in patients of HIV with raised transaminases being prominent abnormality. Conclusions: Gastrointestinal and hepatobiliary manifestations in HIV infected patients are mostly drug related side effects.

**Keywords:** HIV, Symptoms, incidence

## 1. Introduction

Gastrointestinal (GI) manifestations of HIV disease include diarrhoea, dysphagia or odynophagia, nausea, vomiting, weight loss, abdominal pain, anorectal disease, jaundice and hepatomegaly, GI bleeding, interactions of HIV and hepatotropic viruses, and GI tumours. The frequency of GI symptom is varied, however in developing countries up to 100% of patients with AIDS have gastro intestinal problems, and thus AIDS is referred to as the "slim disease". Most patients also experience hepatobiliary manifestations such as hepatomegaly / jaundice / abnormal liver function tests, at some point during the course of their HIV disease. The clinical and histological expression of most diseases is attenuated because of the impaired immune response. In addition, most disorders that are diagnosed in patients with AIDS reflect advanced immunosuppression and occur late in the natural history of AIDS, when little can be done to improve overall outcome.<sup>[1]</sup> Advances in Antiretroviral treatment are changing the nature of HIV disease and affecting many of gastrointestinal manifestations, shifting management strategies back to disorders prevalent in uninfected normal hosts.<sup>[2]</sup>

Highly Active Antiretroviral Therapy (HAART) decreases viral replication and, consequently, circulating HIV. In some patients HIV becomes undetectable in the blood. Associated with a reduction in viral load, there is substantive improvement in immune function that can be assessed by objective measures such as an increase in the CD4 lymphocyte count and clinically by a decrease in opportunistic infections (OIs), as well as improved survival.<sup>[3,4]</sup>

This study was undertaken to examine the prevalence of gastrointestinal and hepatobiliary manifestations and the CD4 count relationship in patients of HIV admitted to a tertiary care hospital.

## 2. Methodology

The proposed descriptive study was conducted at a tertiary care centre and teaching institute. Eighty consecutive patients, who attended for regular follow up in this hospital between September 2012 and October 2014, were studied. Informed written consent was taken from patients for the study participation. These patients were either in regular follow up in OPD or admitted either from emergency room or medical outpatient department.

Patients who were willing were screened for any gastrointestinal and hepatobiliary symptoms or signs and were further investigated. A data collection form was devised for clinical, biochemical, radiological, liver function test, & haematological parameters and was filled separately for each patient. Relevant symptoms related to gastrointestinal and hepatic disorders were re-examined. Patients were examined for icterus, pallor, oral thrush, cutaneous manifestations of HIV (eg. Molluscum contagiosum, seborrheic dermatitis, folliculitis, herpes). Abdomen was thoroughly examined for hepatomegaly, splenomegaly, free fluid in abdomen, or any palpable mass.

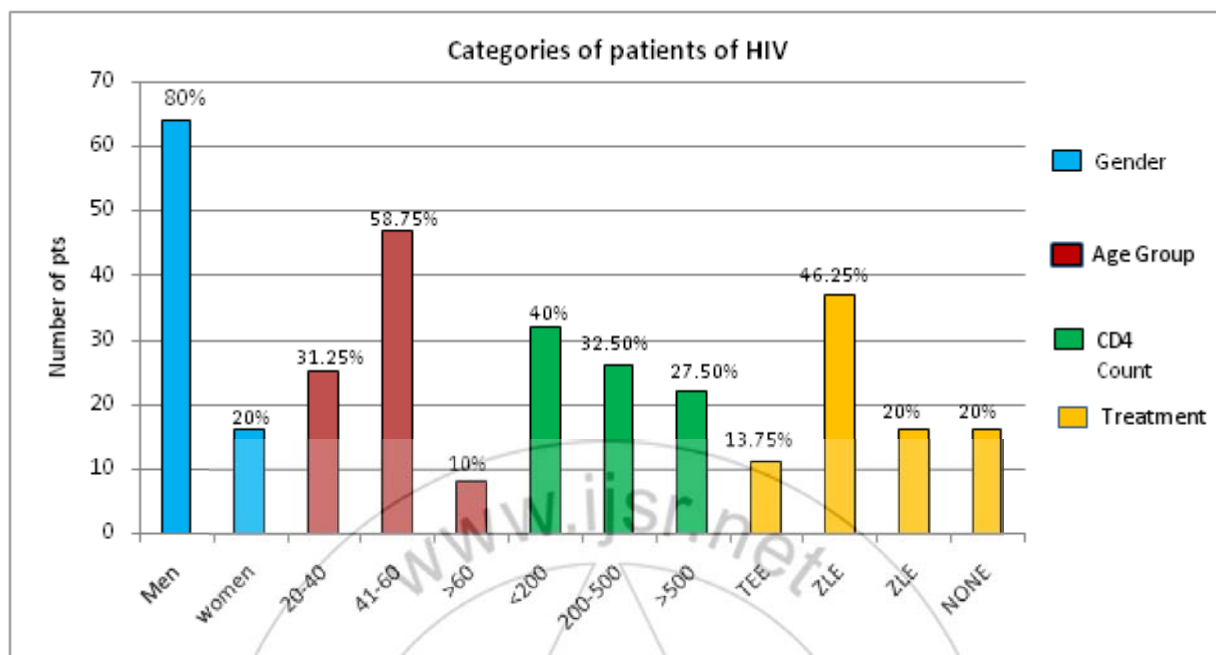
All patients were investigated with complete blood count, Liver function test, CD4 level, Stools were examined for ova or cyst and for Modified Kinyoun's / Cold Acid Fast test. Ultrasound Abdomen and Upper Gastrointestinal Endoscopy were done in patients who gave written consent for the procedure.

All patients of immuno-surveillance who were willing to participate in study irrespective of their presenting complaint above the age of 20 years, and patients who were either screened earlier or who were recently detected as HIV positive were included in the study. Patients less than 20 years of age; unwilling to participate and on immunosuppressive therapy were excluded.

### 3. Results

The mean age of patients was 47years. Range of CD4 count was 105-586. Most of the patients (80%) were receiving

antiretroviral therapy (ART) Figure1 shows the number and percentage of patients according to different parameters.



**Figure 1:** Categorisation of patients according to different parameters

#### Treatment Details

TEE- Tenofovir + Emtricitabine + Efavirenz;

ZLE- Zidovudine + Lamivudine + Efavirenz

ZNL- Zidovudine + Lamivudine+ Nevirapine

### 4. History and Examination

We found that stomach and small intestinal symptoms were more frequent (80%) followed by oesophageal (16%) and anorectal region (4%). The percentage of patients having one or more than one symptom was 61.25%.

**Table 1:** Types of symptoms and frequency found in HIV Patients

| Region                  | Symptom                | Percent frequency |
|-------------------------|------------------------|-------------------|
| Oesophageal             | Odynophagia            | 3.75              |
|                         | Vomiting               | 10                |
|                         | Dysphagia              | 2.5               |
| stomach/small intestine | Pain in abdomen        | 35                |
|                         | Decreased appetite     | 5                 |
|                         | Dyspepsia              | 15                |
|                         | Loose stools           | 25                |
| Anorectal               | Pain during defecation | 2.5               |
|                         | Bleeding per rectum    | 5                 |
|                         | Perirectal swelling    | 1.25              |

It was noted that patients with CD4 counts less than 200 had more frequent gastrointestinal symptoms than in patients with CD4 counts between 200 – 500 or > 500.

**Table 2:** GI symptoms and frequency relation with CD4 Count

| CD4 Count | N  | GI symptoms |         |
|-----------|----|-------------|---------|
|           |    | yes         | percent |
| upto 200  | 32 | 24          | 75      |
| 200-500   | 26 | 14          | 53.8    |
| above 500 | 22 | 11          | 50      |
|           | 80 | 49          | 61.25   |

The association between the GI symptoms and CD4 Count was not statistically significant (p value = 0.115).

Jaundice was seen in 10 (12.5%) patients. Out of 10 patients 4 each belonged to CD4 count below 200 and 200-500, while 2 patients belonged to count > 500. But this association was not statistically significant (df = 2, p value = 0.806).

**Table 3:** Association between CD4 Count and presence of Jaundice

| CD4        | Total number of patients | Presence of Jaundice n |
|------------|--------------------------|------------------------|
| Upto 200   | 32                       | 4                      |
| 200 to 500 | 26                       | 4                      |
| Above 500  | 22                       | 2                      |
| Total      | 80                       | 10                     |

In our patients, oral candidiasis was seen in 20 cases out of which 10 had associated oesophageal candidiasis too.

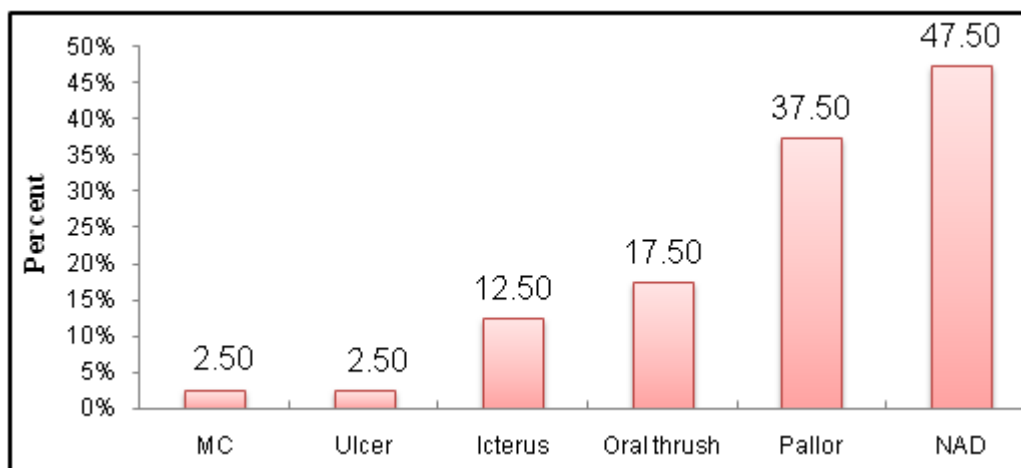


Figure 3: Frequency of general symptoms in HIV patients

## 5. Laboratory Investigations

It was found that 43 patients (53.75%) had abnormal liver function test; 48.75% patients had raised transaminases (SGOT/SGPT > 40 IU/L); 31.25% had raised alkaline phosphatase (> 170 IU/L) and 25% showed raised bilirubin

(Sr bilirubin > 1.2 mg/dl). Anicteric hepatitis was seen in 23 (28.75%) patients.

Out of the total 62 patients' stool examination (symptomatic and asymptomatic), 48 (77.43%) samples were found to be AFB positive.

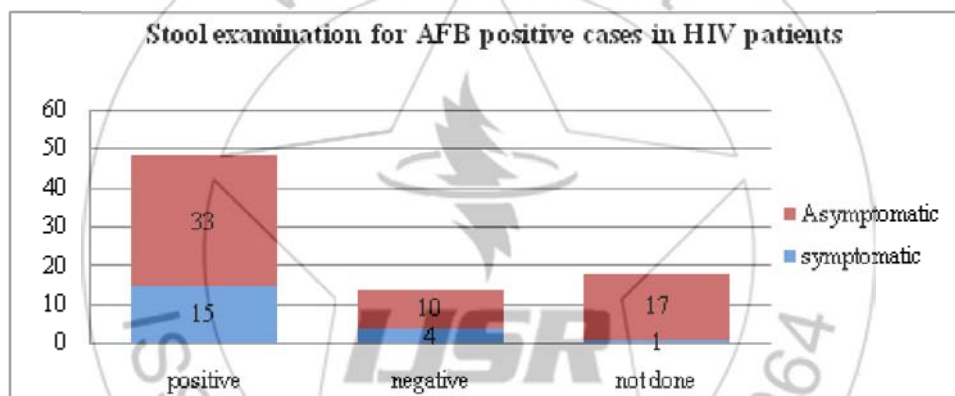


Figure 2: Stool examination for AFB positive cases in patients of HIV

### Chronic hepatitis and HIV

Only 5 out of 80 patients were HBsAg positive. None of our patients was Anti HCV positive. None of our patients had HIV associated neoplasm like lymphoma, Kaposi's sarcoma or nodular Gastric mucosa. Though there was very low prevalence of hepatobiliary symptoms, high rate of abnormal liver function test and hepatomegaly in HIV positive patients was present.

### USG Abdomen:

Majority (55%) of patients had normal ultrasonographic findings while hepatomegaly was seen in 27.5% and splenomegaly in 17.5%. Fatty liver was seen in 50% of patients of hepatomegaly.

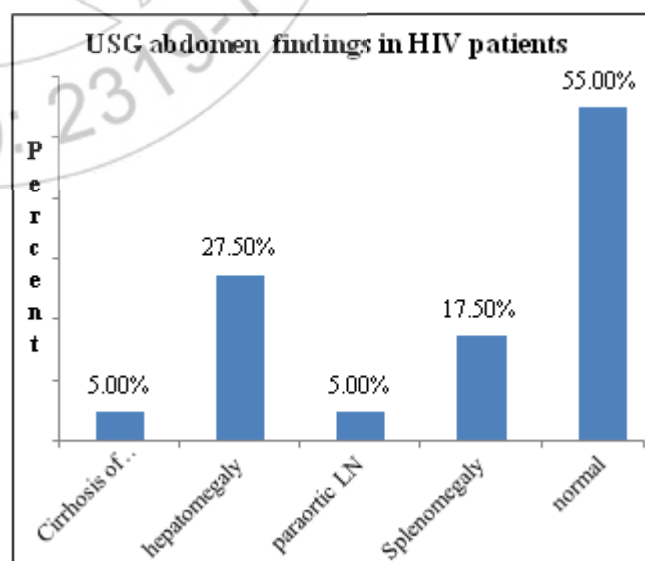


Figure 5: USG Abdomen findings in HIV patients

### Upper Gastrointestinal Endoscopy:

11.25% did not give consent for Endoscopy. Figure 4 shows the symptoms observed in Endoscopy.

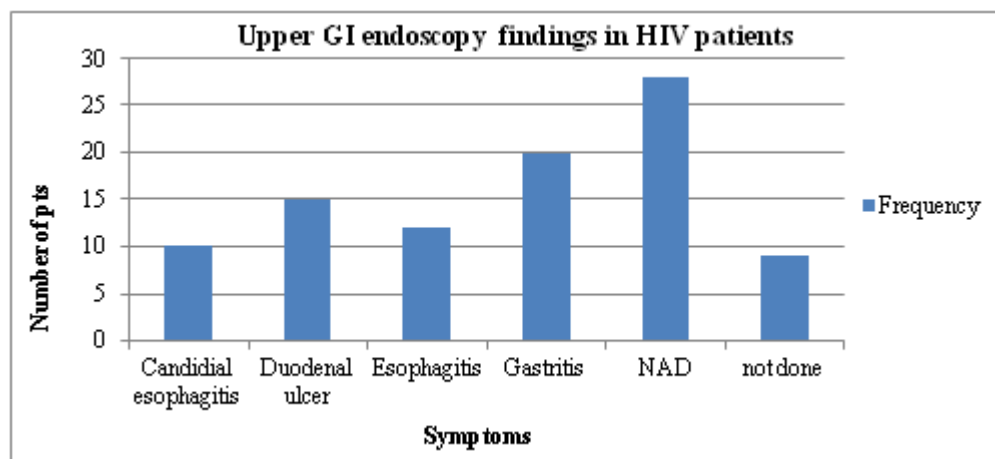


Figure 4: Upper GI endoscopy findings in patients of HIV

## 6. Discussion

In our studies prevalence of various gastrointestinal and hepatobiliary manifestations in HIV patients in tertiary care hospital were seen. Gastrointestinal symptoms remain frequent presenting symptoms in HIV positive patients. Pain in abdomen, loose stools, dyspepsia and vomiting are more common. The reported incidence of gastrointestinal manifestation in the literature is about 50 - 93 % and hepatobiliary manifestation in 22.8% of patients.<sup>[5]</sup> In our study, gastrointestinal complaints like pain in abdomen (35%) was seen in the majority of patients followed by loose stools (25%). Corley D.A et al<sup>[6]</sup> has reported pain in upper abdomen in 34% of patients while vomiting in 32% of patients.

Association between CD4 count and GI symptoms was compared in this study. It was seen that patients with CD4 counts less than 200 had more frequent gastrointestinal symptoms than in patients with CD4 counts between 200 – 500 or > 500, but this association was not statistically significant (p value = 0.115).

A high prevalence (77.43%) of AFB positive protozoa's (Cryptosporidium / Isospora / Cyclospora) in HIV patients (diarrheal and non-diarrheal) in our study correlates well with the study by Masarat et al.<sup>[7]</sup> They found that all individuals (symptomatic or asymptomatic) were infected with cryptosporidium.

In general examination, pallor was most common followed by oral candidiasis. Esophagitis, gastritis or duodenal ulcer was seen in 30 (37.5%) patients out of whom 22 (73%) patients were receiving Anti-retroviral therapy.

Hepatobiliary symptom was mainly characterised by jaundice which was seen in 10 (12.5% patients). Asymptomatic disturbed liver function test is the most frequent hepatobiliary manifestation in patients of HIV, most common being raised transaminases (48.75%) followed by raised alkaline phosphatase (31.25%). Thus in our study there was very low prevalence of hepatobiliary symptoms, but high rate of deranged liver function test and hepatomegaly in HIV positive patients.

In one study carried out by Lizardi-Cervera J,<sup>[5]</sup> majority of patients (77%) did not show clinical signs of liver damage. Twenty nine percent patients had alkaline phosphatase above normal while alkaline phosphatase plus aminotransferases was raised in 45%.

Hepatomegaly (27.5%) followed by splenomegaly (15.5%) is most common ultrasonographic finding in our study. In one study the authors have reported a significantly higher proportion of lymphadenopathy (18%), splenomegaly (12%), splenic infiltration (9%), and hepatomegaly (7%).<sup>[8]</sup>

There are some potential biases in this study. Maximum patients were on HAART and were having better follow up. These patients had good hygiene and belonged to urban area. This was a cross sectional descriptive study and patients were not followed up, so causality of association of CD4 and GI or hepatobiliary symptoms cannot be commented upon. These factors may be responsible for low prevalence of opportunistic infections in this study.

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