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MANAGEMENT OF GASTROINTESTINAL SURGICAL DISORDERS IN RETROVIRAL PATIENTS - EXPERIENCE FROM A TERTIARY CARE CENTRE IN INDIA

Gastroenterology

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ABSTRACT

BACKGROUND: The nuances in anti retroviral therapy has resulted in a significant increase in the life expectancy of patients infected with HIV.A variety of gastro intestinal disorders occur in these patients, related or unrelated to HIV. We share our experience in the management of common gastrointestinal(GI) disorders in these patients.

AIMS AND OBJECTIVES: We intend to study the difference in management strategies for gastrointestinal surgical disorders between retroviral and non retroviral patients and also assess the outcome of treatment in retroviral patients.

MATERIALS AND METHODS: This is a prospective observational study of 34 retroviral patients treated for a heterogeneous group of GI disorders. All were treated on standard guidelines. The primary outcome measure was morbidity of any form. The secondary outcome measure was mortality.

RESULTS: There was no increase in morbidity and mortality when CD4 count >500.

CONCLUSION: Retroviral disease does not alter the management strategy or the course of the disease in patients with CD4 count >500 /cmm

KEYWORDS

HIV infection, CD4 count, Gastrointestinal disease

INTRODUCTION

Human Immunodeficiency Virus (HIV) infection is a pandemic and was first detected in India in a female sex worker in Chennai in 1986. The present national prevalence of HIV in India is 0.26% compared with a global prevalence of 0.20% [1]. In India the transmission is mainly through heterosexuals with other modes contributing to a minor extent. Our study is from the state of Tamilnadu in India which is classified as a high prevalence state (antenatal women >1% HIV positive).

As a result of tremendous research, the pathophysiology of HIV infection is now fully elucidated. A plethora of anti-retroviral drugs targeting various stages of its interaction with the immune system have significantly improved the life expectancy of patients with HIV infection. As a consequence of this, diverse diseases either related or unrelated to HIV infection affect these patients. Until recently and to the best of our knowledge, there have been no studies from the Indian subcontinent on the impact of HIV infection in surgical patients. This study is from a Surgical Gastroenterology unit. We intend to study the difference in management strategies for common gastrointestinal disorders between retroviral and non retroviral patients and also assess the outcome of treatment in retroviral patients.

MATERIALS AND METHODS

This is a prospective observational study of 34 retroviral positive patients (RPP) treated for a heterogenous group of GI disorders from January to December 2017. Our inclusion criteria was all patients presenting to us with HIV ELISA positivity and confirmed by a Western blot test irrespective of the age, sex and diagnosis of gastrointestinal disorder. An informed consent was obtained from all patients participating in the study. An approval from the Institutional Ethics Committee had been obtained. We excluded patients on highly active antiretroviral therapy (HAART) to avoid confounding of results.

All patients were admitted and baseline blood investigations like complete blood count, renal function test, liver function test and relevant radiological investigations to clinch the correct diagnosis were done. A CD4 cell count was also done for all HIV infected patients. Endoscopic procedures as appropriate, either upper or lower GI endoscopy was also done. Tissue samples were taken for histopathology to prove or refute the diagnosis when necessary. All patients were treated on standard treatment guidelines used for non retroviral patients depending on the disease. Surgical management was tailored to the individual patient's disease after thorough cardiopulmonary evaluation. Pulmonary tuberculosis was identified or ruled out using sputum acid fast staining, chest skiagram and a sputum CB-NAAT (Cartridge Based Nucleic Acid Amplificatin Test).

We collected and analysed all demographic data in the retroviral group. All RPP were compared to age and disease matched non retroviral patients as controls. All patients were followed up until discharge and 30 days after that. The discharge criteria was that patients tolerating a soft solid diet, voiding normally, ambulant and capable of self care. Those with malignancy were followed for 6 months after the planned treatment. The primary outcome measure was morbidity of any form and total duration of hospital stay. The secondary outcome measure was mortality. A subgroup analysis of patients with CD4 count less than 200 cells /cubic millimetre was done.

RESULTS

Among the RPP there were 23 males and 11 females giving a male to female ratio of approximately 2:1. The age of the patients ranged from 15 to 72 years with a clustering of cases in the third and fourth decades of life. There were 15 patients with upper GI and small intestinal disorders, 10 with hepatobiliary and pancreatic diseases and 9 with colorectal diseases. The diagnoses and the number of patients are as shown in Table.1. In the retroviral group 19 patients underwent surgical management, 7 underwent palliative chemotherapy for advanced malignancy and 8 underwent conservative management. Of the 34 patients, 20 patients had CD4 count >500 cells/cmm, 4 had between 200-500 cells/cmm and 10 had < 200 cells/cmm. None of the patients tested positive for tuberculosis in the RPP group.

Table.1

Upper GI /SI Diseases	
Corrosive esophageal stricture	1
Carcinoma OG junction	1
Carcinoma stomach	4
GIST stomach	1
Small bowel lymphoma	4
Small bowel stricture	1
Ileal fistula	1
Entero vesical fistula	1
Sub acute intestinal obstruction	1
Colorectal diseases	
Appendicitis	1
Colostomy prolapse	1
Carcinoma rectum	3
Fistula in ano	3
Anal Condyloma	1
Hepatobiliary & Pancreatic diseases	
Liver abscess	2
Calculous cholecystitis	2
Acute pancreatitis	4
CCP	1
CBD stricture	1

Of the 19 patients who underwent surgery, 10 had CD4 count >500/cmm, 5 had < 200 /cmm and the rest were in the intermediate group. It was seen that in the retrovirus positive surgical group the mean duration of hospital stay was 7.7days (Table.2). The mean duration of hospital stay was 4.7days in the age and disease matched control group. But the mean duration of hospital stay in the RPP group is skewed by the presence of patients with CD4 count <200 who had prolonged hospital stay(mean 14.6 days ;n=5) because of post operative morbidity. On excluding RPP with CD4 counts <200, the mean hospital stay was comparable with the control group at 5.2 days. The mean hospital stay in the patients with CD4 count between 200-500 was 3.75 days; n=4.As we are dealing with a heterogenous group of surgical diseases the above mean must be interpreted with caution as all these 4 patients underwent only minor surgical procedures. A comparison with age and disease matched controls (mean 4 days; n=4) showed no significant difference in the duration of hospital stay or the post operative course despite the lower CD4 counts. But the sample size is too small to arrive at any solid conclusion. We found an increased incidence of hypoalbuminemia in patients with CD4 counts <200 in the RPP group. There was a good correlation between hypoalbuminemia and post operative morbidity in this group. There was a mortality in the surgically managed patients in the RPP group due to severe cholangitis not responding to biliary decompression by internal drainage procedure. This patient had a CD4 count <200. In the rest of the 4 patients with CD4 count <200 the post operative morbidity was due to severe wound infection in two patients who underwent open appendicectomy and open cholecystectomy. In the other two one had minor anastomotic leak following small bowel resection and managed conservatively and the other had post operative pneumonia.

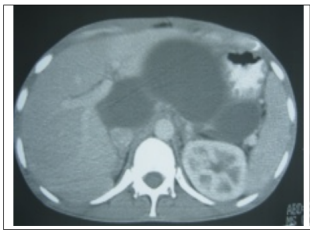

Fig.1Contrast CT showing Acute Pancreatitis with Pseudocyst

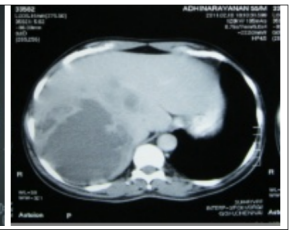

Fig.2Contrast CT showing Liver Abscess in right lobe

In the conservatively managed RPP group, 2 patients with Acute pancreatitis (Fig.1)with CD4 counts <200 died of septicemia due to infected pancreatic necrosis not responding to a step up approach. Another patient with metastatic carcinoma of the stomach died 2 months after discharge due to his disease. Two patients with liver abscess (Fig.2) and one with chronic calcific pancreatitis with normal CD4 counts had an uneventful recovery. The duration of hospital stay was high, plagued with profound morbidity in the patients with low CD4 counts.

Table.2 Comparison of RPP with control group

Surgical Procedure	Cd4 count Cells/cmm	Duration of hospital stay RPP group in days	Duration of Hosp stay control group in days
Sub total gastrectomy	700	10	11
Proximal gastrectomy	1024	11	10
Small bowel resection	986	6	8
Small bowel resection	980	7	6
Small bowel resection	169	15	5
Ileostomy and mucus fistula	1200	5	5
Loop ileostomy	1100	6	4
Feeding jejunostomy	990	3	3
Feeding jejunostomy	1020	4	4
Open cholecystectomy	187	16	3
Open cholecystectomy	452	6	4
Choledochoduodenostomy	195	18	5
End colostomy & mucus fistula	180	12	5
Diversion colostomy	297	4	3
Fistulectomy &seton insertion	470	3	3
Fistulectomy &seton insertion	800	4	3
Condyloma excision	356	2	2
Fistulectomy	890	3	3
Appendicectomy	185	12	4
		Mean = 7.7	Mean = 4.7
		Mean excluding CD4 counts <200= 5.2	

In the RPP group with malignant disease treated with chemotherapy, no solid conclusion could be drawn. Their duration of hospital stay and course of disease was not much influenced by their retroviral status when they were compared to age and disease matched controls. But the sample size is too small and also heterogenous.

An overall analysis of the RP patients classifying them based on CD4 counts, the mean duration of hospital stay in patients with CD4 counts >500,200-500 and <200 were 6.7 days,3.7 days and 14.9 days respectively. There was no morbidity or mortality in the first and second groups. Patients with CD4 counts <200 definitely had some form of complication mandating prolonged hospital admission irrespective of the line of management. These patients were also hypoalbuminemic increasing their morbidity.

DISCUSSION

Our study is from a high prevalance state in India. Our analysis of the demographic data shows a male predominance of HIV positivity in contrast to the female predominance[2] in the sub-Saharan Africa which accounts for a major share to the world prevalence of HIV infection. The African population is similar to the Indian population in that the major route of spread is heterosexual in contrast to the Western population where homosexual contact is the major cause. There is a clustering of cases in the third and fourth decades of life which shows the sexually active age group.

In our present study we have addressed two important issues a) influence of HIV positivity on the outcome of treatment in a heterogenous group of patients presenting with gastrointestinal disorders not related to HIV infection and b) significance of the stage of HIV disease based on CD4 count and its impact on outcome in terms of morbidity and mortality on this heterogenous cohort. There is considerable stigma in deciding on surgical management for patients with HIV infection because of the immunocompromised state. There are studies which showed the decreased incidence of sepsis related mortality in HIV infected patients because of the immune alterations[3,4]. These are controversial studies.

HIV infects cells with the CD4 cell surface receptor which serves for its binding to host cells. As the infection advances there is a progressive qualitative and quantitative decline in these cells. The centre for disease classification (CDC) stages HIV infection depending on the CD4 count. Patients with CD4 counts <200 cell/cmm are said to have full blown AIDS. The WHO staging system is different as it predominantly relies on the clinical features of oppurtunistic infections and malignancies related to HIV infection. In our study and following the CDC we categorised patients into three groups, based on the CD4 counts to assess the effect of HIV infection on treatment outcome. Patients with AIDS are profoundly immunosuppressed. In our study we also found the serum albumin levels to be very low in this group with a mean of 2.4 gm/dl. We found a good correlation between post operative morbidity and mortality with CD4 counts and the co-existing hypoalbumionemia in this group of patients. We found an increased risk of septic complications and early progression to multiple organ failure in the same group. All this is in contradistinction to the other two groups with CD4 counts > 200cell/cmm. In the latter group, there is no impact of HIV infection either on the course of disease or on the outcome irrespective of the line of management.

The observations of our study complies with and is in concurrence with that of other researchers worldwide[5-10].The secondary outcome measure of mortality occurred only in patients with CD4 counts <200cell/cmm. In general the surgical management of patients with acute abdomen is contentious because of the immunosuppressed state. We want to bring to lime light the fact that only the patients with AIDS must be handled with caution. The rest can be managed according to standard guidelines. The morbidity and mortality related to surgery in RP patients with CD4 counts >500 cells/cmm is similar to that of non infected patients. In the intermediate group further studies can provide valuable information.

There are some inherent limitations in our study because of the heterogeneous patient population and the sample size. But it can be construed that the results and hence the conclusions have a scientific basis.

CONCLUSION

Retroviral disease does not alter the management strategy or the course of the disease in patients with CD4 count >500 /cmm. Patients with CD4 counts <200 cells/cmm must be handled with caution because of the profoundly immunosuppressed state. Further studies are needed to draw a solid conclusion in the patients with CD4 counts between 200-500 cells/cmm. The CDC staging is a pragmatic system to risk stratify the patients with HIV infection. The role of CD4 count in risk stratification in patients on HAART will be an area of research for the future.

Conflict of interest: Nil

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