



## Study of Surgical Disease Spectrum in Retro-Virus Infected Patients

Authors

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### Abstract

*Retroviral disease is a common condition in developing countries. Patients affected with Human Immunodeficiency Virus (HIV) are admitted in hospitals for conditions related or unrelated to HIV. This study was done to assess surgical disease spectrum in HIV infected patients and their common clinical features. A prospective observational study was carried out in a tertiary care hospital. All retroviral patients with surgical illness and above 13 years of age irrespective of their sex were enrolled after their consent. They were investigated, treated and observed in relation to response to treatment till their recovery. The study found infectious diseases as most common condition and most of them requiring emergency surgical intervention along with a good antibiotic coverage. The severity of the presentation is related to the duration of the complaints, as in non-HIV patients but also to CD4 count in this group of patients.*

### Introduction

HIV has a dramatic effect on the practice of surgery. It is estimated that 20- 25% of HIV affected patients require surgery during their illness<sup>1</sup>. HIV infected individuals may suffer from any condition related or unrelated to HIV and may present with surgical problems common to the general population<sup>2</sup>. The male to female ratio in surgical disease in HIV patients is 3:1<sup>3</sup> and age group mostly affected is 31- 40 yrs.<sup>4</sup>

### Material and Methodology

This was a prospective observational study carried out from May 2010 to December 2012 in a tertiary care hospital. Patients presenting with surgical conditions were screened and those with recently diagnosed HIV infection or known cases of

retroviral disease were enrolled. Patients above 13 years of age irrespective of sex were included. Patients' demographic data, clinical presentation of surgical conditions, other concurrent infection, physical findings, laboratory parameters, interventions, complications and their outcomes were analyzed.

### Results

The present study comprised of 100 cases of surgical diseases in retroviral patients. Out of these 24 cases were females and 76 males. The study found that patients affected with HIV and having surgical disease belonged maximum to age group of 36-40 yrs. Almost 79% of the patients belong to the age group of 31-50 yrs. (Figure 1)

The commonest disease was abscess in which liver abscess predominated. This was followed by inflammatory conditions with 7 cases each of cellulitis & cholecystitis and 6 each of gastritis & appendicitis. We found Liver abscess in 35% (8 cases), Psoas abscess in 13% (3 cases) and splenic abscess in 9% (2 cases). All the cases of splenic abscess had multiple microabscesses. Figure 2 shows the disease pattern in retroviral patients with respect to the incidence.

Out of 100 patients, 40% were managed conservatively. Total 60 patients underwent surgical intervention with 37 being emergency surgeries while the remaining 23 were elective surgeries.

Among the different emergency procedures done; incision and drainage was the commonest done (in 13 patients) for various abscesses followed by debridement which was done in 10 cases and 2 patients required below knee amputation. Exploratory laparotomy was done in total 6 cases, 3 each of intestinal perforation and intestinal obstruction. Emergency open appendicectomy was done in 6 cases. Figure 3 shows pattern of surgical and nonsurgical management required in retroviral patients in the study.

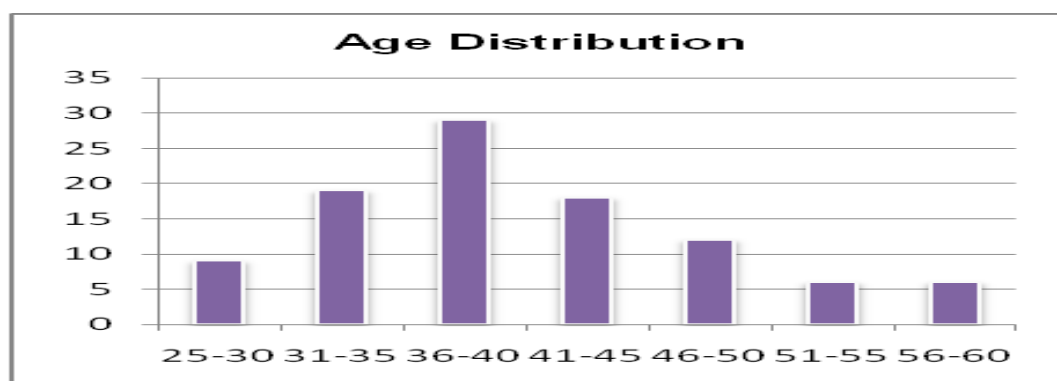


Fig 1: Histogram showing Age Distribution

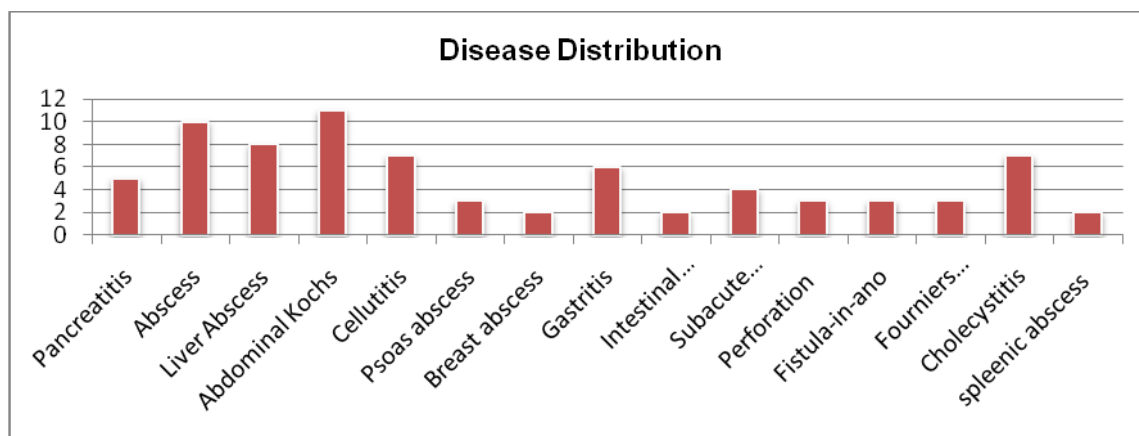
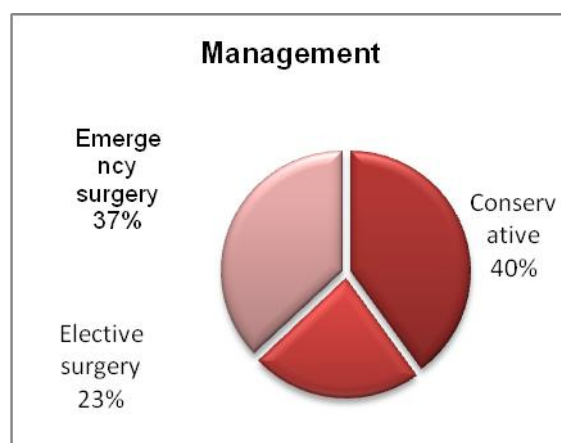


Fig 2: Histogram showing Common Diseases



**Fig 3:** Pie chart showing management of the diseases

### Association with CD4 count

The present study had 11 patients with active abdominal Kochs most of them had CD4 count less than 300 cells/mm<sup>3</sup>. Five patients underwent emergency exploratory laparotomy (3 for perforative peritonitis and two for intestinal obstruction) out of which 3 patients had CD4 count <100 cells/mm<sup>3</sup> one of intestinal obstruction and two for perforative peritonitis.

Acute cholecystitis was seen in 7 cases with 3 patients of acalculus cholecystitis having CD4 count less than 200. The 4<sup>th</sup> patient of acalculus cholecystitis had CD4 count of 290. The remaining 3 cases were of chronic calculus cholecystitis. All of the 7 patients were managed conservatively with IV antibiotics during acute attack and were asked to follow up later for elective cholecystectomy.

Out of 7 patients with cellulitis most of the patients had CD4 count less than 350 with only 2 patients having their CD4 count more than 400.

In 6 patients of Gastritis 5 patients had CD4 count less than 350 and were on ART.

The patients who had acute appendicitis had their CD4 count less than 350. One patient had perforation of the appendix with CD4 count less than 200. All the three patients with CD4 count less than 200 developed surgical site infection on 4<sup>th</sup> or 5<sup>th</sup> postoperative day.

The present study had 5 cases of pancreatitis and all had CD4 count less than 350 and all of them were managed conservatively but required IV antibiotics for a longer time (14 days).

### Co-relation with ART

In the present study there were 45 old cases of HIV out of which 24 underwent surgery. Out of these only 2 patients were on ART and the recovery period was comparable to those with good CD4 count without ART.

### Morbidity and Mortality

In all the patients who underwent elective surgeries the recovery was comparable to that of nonretroviral patients. Among all abdominal surgeries 6 patients developed surgical site infection and all of them had CD4 count less than 250. Four patients had undergone emergency open appendectomy and two of exploratory laparotomy for intestinal obstruction. Patients with good CD4 count recovered well as compared to those with low CD4 count.

The present study had 2 mortalities both had perforative peritonitis with CD4 count below 100 and presented late with septicemia.

### Discussion

In the present study, it was found that, 49% patients were in the age group of 31-40 yrs which

is almost equivalent to other studies<sup>3</sup>. The study had male to female ratio of 3.17:1 (76 male, 24 female) which is similar to a study done by Kulkarni *et.al.*<sup>5</sup>

A study done by Tom Heller *et.al.*<sup>6</sup> on abdominal tuberculosis in HIV patients found that maximum patients had CD4 count less than 200. In present study also 90.9% of the 11 patients with abdominal Kochs had CD4 count less than 250. This reiterates the fact that Kochs bacilli which may be in dormant state in the body get activated when immunity is low. This fact has to be kept in mind while treating these patients.

In the present study, cellulitis was seen most commonly in HIV patients with low CD4 counts and lower limb was predominantly involved in these patients which is corroborative with the findings of Manfredi R, Chiodo F's<sup>7</sup> study which found that most patients had low CD4 count and lower limb involvement was more common.

Cacciarelli *et.al.*<sup>8</sup> found that the incidence of acalculous cholecystitis is more in patients having CD4 counts less than 200. In the present study all the patients with acalculous cholecystitis had CD4 count below 200. This again confirms the fact of Cacciarelli *et.al.*'s study.

In a study done by Flum D R *et.al.*<sup>9</sup>, 90% of the cases of appendicitis had CD4 count below 200, whereas in the present study 50% patients had CD4 count below 200.

In a study on surgical site infection (SSI) by Zhang L *et.al.*<sup>10</sup>, 47.5% of the HIV patients who had undergone some abdominal surgery developed SSI. The present study found 40% cases with the SSI with the increasing risk with fall in CD4 count at the time of surgery. Also the recovery period was more in patients with low CD4 count.

Mortality was seen in patients with very low CD4 count (<100) which is similar to the study by Zachariah R *et.al.*<sup>11</sup>

### Conclusion

The present study concludes that most of the patients with HIV visiting surgical clinics or

wards have infective pathological condition. Most of them require emergency surgical intervention along with a good antibiotic coverage. The severity of the presentation is related to the duration of the complaints as in non-HIV patients but also to CD4 count in this group of patients.

If the patient has good CD4 count and is compliant with Highly Active anti-retroviral Therapy (HAART) the recovery period is almost equivalent to the non-HIV patients.

The two mortalities of present study were in the patients who presented late to the hospital with very low CD4 count and were in sepsis.

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