

## Outcome of Emergency Surgery in HIV Infected Patients in Jos

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**Abstract:** Surgery in the immune compromised such as the HIV infected patients is a subject shrouded with some doubt and controversy because of the complications that are thought to arise following the surgery. The surgeries performed during the study period were not minimally invasive or highly specialized and was performed by general practitioners, general surgeons and gynecologist. We evaluated the outcomes of emergency surgeries among our patients using the CD4 cell count and the Hemoglobin concentration as predictors of outcome in HIV patients undergoing surgery in our clinic. This was a combined retrospective and prospective evaluation of HIV positive patients who underwent surgery at a Nongovernmental medical facility that renders free care to HIV positive patients in Jos Plateau State from January 2011- December 2013. All consenting patient and those with available medical records were recruited into the study. Non consenting patients, those with missing records and those lost to follow up were excluded from this study. Data was extracted on the type of surgery, duration of hospital stay, and complications was analyzed then matched with the hematological and immunological parameters of the patients. Obtained data was obtained using epi info version 7. Analysis was for means and standard. A total of 282 major surgeries were performed. 102(36.17%) of the patients had Obstetrics and Gynaecological surgeries, 68(24.11%) had appendectomies, 26(9.22%) had exploratory Laparotomies, 23(8.16%) Urologic, Orthopedic surgeries accounted for 13(4.61%); while Pediatric surgeries accounted for 11(3.90%), other minor procedures accounted for 39(13.83%). The study population had a mean CD4 count 168.8<sup>+</sup>. 140.5cell/ml and a mean Hemoglobin concentration of 12.3<sup>+</sup>. 4.9grms. One hundred and ten patients (39%) healed normally and were discharged without complications, while 114(40.3%) had delayed wound healing and were discharged home after two weeks. There was 20.7% mortality in this study (58 patients). Patients that had delayed wound healing had a mean CD4 count of 160, while mortality was seen in patients with a mean CD4 count of 150. Emergency surgery in HIV infected patients with a low CD4 cell count is associated with a high morbidity and mortality.

**Keywords:** Outcome, emergency, surgery, HIV infected

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### I. Introduction

Surgery in the immune compromised such as the HIV infected patients is a subject shrouded with some doubt and controversy because of the complications that are thought to arise following the surgery(1). A surgeon would want to optimize the hematological, immunological and the biochemical indices before performing surgery on the HIV infected patient (2-3). The indices for good outcome include Hemoglobin concentration of >10gram, CD4 cell of >500cells /ml, good liver and renal functions in a patient who is stable on Antiretroviral drugs(4). For patients going for elective surgery with no impending complication, one has the luxury of waiting till the desired indices are obtained in the patients (5-6),. In emergency situations the surgeon has to weigh the risk of operating versus not operating until the optimal parameters are reached (7). The decision is often a difficult one but where delay may put the patient in greater danger, the surgeon may consider operating on the patient. The outcome in elective case has been found to be better compared to the emergency cases(8).

Surgeons have explored various means of improving the outcome in those going for emergency; such measures include blood transfusion, judicious use of broad spectrum antibiotics, parenteral nutrition, injectable antiretroviral drugs, minimally invasive surgeries, highly specialized surgeries and short operating time(9). In low and middle income countries such as ours, minimally invasive and highly specialized surgeries, parenteral nutrition and injectable antiretroviral are not readily available. Where it is available are not affordable for the majority of the population. Despite the constraints surgeries are performed on the HIV infected patients for both elective and emergency cases. Our determinants for fitness to be operated upon are mainly based on the hematological, immunological and the biochemical indices. The surgeries performed during the study period were not minimally invasive or highly specialized and was performed by general practitioners, general surgeons and gynecologist. We evaluated the outcomes of emergency surgeries among our patients using the CD4 cell count and the Hemoglobin concentration as predictors of outcome in HIV patients undergoing surgery in our clinic.

## II. Patients And Methods

This was a combined retrospective and prospective evaluation of HIV positive patients who underwent surgery at a Nongovernmental medical facility that renders free care to HIV positive patients in Jos Plateau State from January 2011- December 2013. All consenting patient and those with available medical records were recruited into the study. Non consenting patients, those with missing records and those lost to follow up were excluded from this study.

Data was extracted on the type of surgery, duration of hospital stay, and complications was analyzed then matched with the hematological and immunological parameters of the patients. Obtained data was obtained using epi info version 7. Analysis was for means and standard

## III. Results

A total of 282 major surgeries were performed. 102(36.17%) of te patients had Obstetrics and Gynaecological surgeries, 68(24.11%0 had appendectomies, 26(9.22%) had exploratory laparotomies, 23(8.16%0 Urologic, Orthopedic surgeries accounted for 13(4.61%); wile Pediatric surgeries accounted for 11(3.90%), other minor procedures accounted for 39(13.83%). See fig 1

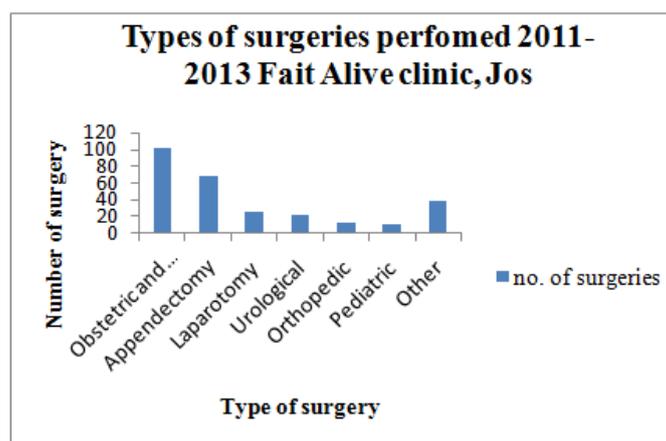


Fig. 1 showing types of emergency surgeries performed

The study population had a mean CD4 count  $168.8 \pm 140.5$  cell/ml and a mean Hemoglobin concentration of  $12.3 \pm 4.9$  grms. One hundred and ten patients (39%) healed normally and were discharged without complications, wile 114(40.3%) ad delayed wound healing and were discharged home after two weeks. There was 20.7% mortality in this study (58 patients). Patients tat ad delayed wound healing had a mean CD4 count of 160, while mortality was seen in patients with a mean CD4 count of 150.

## IV. Discussion

The main finding in this study is that low CD4 counts are associated with high morbidity and mortality. Clinical AIDS is state of depressed immunity from a low CD4 count and is generally associated with poor wound healing. Zhang L et al reported similar findings among HIV patients who had major abdominal surgeries (10-11). Delayed healing was found in patients with a mean CD4 count of 160 cell/ml wile a high mortality was seen in patients with CD4 counts of 150 cells /ml and below. Su, J et al, found that major surgery and a low CD4 cell count positively correlated with high rate of post operative infection, sepsis and a delayed healing (12-13) . This finding can be explained by the fact that HIV infected patients requiring emergency surgery are likely to be moribund, have poor nutritional status in addition to the low CD4 cell count, low Hemoglobin concentration and are of poor anesthetic risk making them candidates for increased morbidity and mortality(14-15) . To reduce this high morbidity and mortality associated with emergency surgery in the AIDS patients with a low CD4 count, administration of broad spectrum antibiotics, and correction of fluid and electrolyte derangement, appropriate blood transfusions and use of supplemental parenteral nutrition is advocated.

## V. Conclusion

Emergency surgery in IV infected patients with a low CD4 cell count is associated with a high morbidity and mortality.

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