



**RETROSPECTIVE STUDY ON PRESENTATION,  
MANAGEMENT AND POST-TREATMENT OF PELVIC  
ABSCESSSES**

**A CASE STUDY OF PATIENTS ADMITTED TO THE  
UNIVERSITY TEACHING HOSPITAL LUSAKA, ZAMBIA**

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**DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZAMBIA IN  
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## **ABSTRACT**

A *pelvic abscess* is a pus filled cavity in the pelvis due to infection. It is typically the result of acute Pelvic Inflammably Disease (PID). Pelvic abscesses are a major gynaecological problem in contemporary gynaecological practice. This research paper made a retrospective study into a 3 levelled process of presentation, management and post-treatment of 113 sampled patient files at the Obstetrics and Gynaecological department at the University Teaching Hospital (UTH) in Lusaka, Zambia. Included in the sources of information were 8 doctors and 5 observations of laparotomy by the principal investigator.

The study reviewed the medical practitioners' awareness, knowledge, attitude and practice in assessing the presentation, determining the efficiency and effectiveness of management and evaluation of post-treatment periods of pelvic abscess at UTH. The study revealed that medical practitioners are well aware and have good knowledge and practice protocol in the 3 levelled processes. Nevertheless serious lapses were noted which included delay in administering surgical treatment due mainly to a lack of space in operating theatres. This delay compounded complications for patients resulting in morbidity and mortality. Another serious lapse in protocol was the number of attending surgeons during laparotomy. Lone surgeons pose a threat to the healthcare of patients as challenges during operations may go unreported and these challenges may not be addressed by authorities.

The study also revealed that there was a high frequency of pelvic abscess among the age range of 16 - 35 years, a prime reproductive period for women. This was in contrast with the threshold of 40 that Western literature state. The cause of this young age for Zambia could reside in extraneous factors such as abortions and STIs. It was discovered that the majority of patients resided in high density areas where literacy levels are low and thus health education is a great challenge.

## **DEDICATION**

This research paper is dedicated to my loving spouse Petronella for her unwavering love and support during my studies and to my adorable children Chishimba, Mwaba, Kafula, Kangwa and little Kabungo for their love and being a mirror of the innocence of life.

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## **ABBREVIATIONS AND ACRONYMNS**

|         |                                   |
|---------|-----------------------------------|
| IUCD    | Intrauterine Contraceptive Devise |
| PID     | Pelvic Inflammatory Disease       |
| CT Scan | Computerized Tomography Scan      |
| MRI     | Magnetic Resonance Imaging        |

# CHAPTER ONE

## BACKGROUND INTRODUCTION

### 1.0 INTRODUCTION

A *pelvic abscess* is a pus filled cavity in the pelvis due to infection. It is typically the result of acute Pelvic Inflammably Disease (PID) described by DeWitt (2010:5) as a “walled-off inflammatory mass in the pelvis.” Pelvic abscesses are a major gynaecological problem in contemporary gynaecological practice.

Globally, advances have been made regarding pelvic abscesses. DeWitt in the United States demonstrated a strong link between abscess size and treatment outcome. He also demonstrated that, the larger the size, the higher the incidence of development of complications including increased hospital stay (DeWitt 2010). Increased abscess size also increases the need for an operative management in association with antimicrobial (Reed 1991). In a study conducted by Landers et al (1985), pelvic abscesses presented in varied forms which included abdominal and pelvic pain, fever, vaginal bleeding and adnexal masses. However, in the Sub-Saharan region, there has been an inadequate study on pelvic abscess. In one of the few studies done in the region, Van Dyck (1992) concluded that multi resistant gonococci in the Congo (Central Africa) had reached very high levels (57%) leading to eventual medical failure of treatment of complications of PID which included pelvic abscess.

This researcher has endeavoured to make a systematic investigation into the presentation, management and post-treatment condition of pelvic abscesses at the University Teaching Hospital (UTH) in Lusaka, Zambia in an effort to increase knowledge on this three levelled process for medical practitioners in Zambia. There have been inadequate studies in Zambia as well on this process and this paper presents valuable information in presentation, management and post-treatment conditions of pelvic abscess patients. In this study *Presentation* refers to the state/condition or degree of infection existing in a patient at the time of hospitalization. *Management* refers to the diagnosis of the ailment in its present condition and the prescribed course of treatment either through antimicrobial regime or surgery. *Post-Treatment* refers to results of treatment which maybe (a) complications at surgery; (b) complete healing in time, or (c) death.



## **1.1 BACKGROUND TO THE PROBLEM**

In Zambia, though the cases of pelvic abscess are common, no systematic study has been conducted in this area. Medical practitioners rely on immediate experience and international medical journals to manage the disease. Regionally conditions vary and thus presenting diseases in different forms, Zambia is disadvantaged with regard to accurate information for effectively managing pelvic abscesses. With this inadequate local medical information, the wide symptomatology of pelvic abscess has created enormous challenges. This has been exacerbated by limited diagnostic facilities in our clinical practice environment. Furthermore, limitation exists in both investigative and management facilities usually leading to delayed diagnosis and intervention. This delay has a bearing on the morbidity and mortality of patients in our local medical facilities. Another challenge arising from this delay is long hospital stay of patients resulting in a negative impact on the cost of health financing on the part of government and its cooperating partners.

An additional challenge to inadequate information locally on pelvic abscesses is the emergence globally of antimicrobial resistant strains in achieving an effective antimicrobial treatment. Accurate local information will enable local medical practitioners in the selection of the type of antimicrobial regime that can effectively combat PID. This is most cardinal in our environment given the high levels of HIV infections that compromise patients' immunity.

In summary, Zambia is faced with an unfavourable environment to adequately manage pelvic abscesses. A lack of systematic studies that would provide information on a three levelled approach (presentation, management and post-treatment) has created challenges for medical practitioners in health institutions. This has inevitably disadvantaged patients with pelvic abscesses.

## **1.2 LITERATURE REVIEW**

### **1.3 STATEMENT OF THE PROBLEM**

The University Teaching Hospital being a major referral hospital in Zambia receives equally high volumes of patients in the Gynaecology department. Of these patients, Pelvic Inflammatory Disease (PID) which includes pelvic abscesses is a common

ailment. Observing a review on incidences of pelvic abscesses globally, it is recorded that 1 in 250 patients with Gynaecological conditions present with pelvic abscesses. The ratio is even higher in Africa where the incidence of PID varies from 1:100 and 1:150 by regions (Grammatikakis et al 2009). The magnitude of occurrence at the University Teaching Hospital, Lusaka is even higher. A review of records in the gynaecology department reveals that 9 in 100 patients seen between 2010 and 2012 had PID. Of these PID patients, 10% had pelvic abscesses. Added to these were 10% of patients with septic abortions who developed sepsis with pelvic abscess. With this high magnitude of pelvic abscesses, it has been noted that this ailment accounts for 8% of all emergency admissions in gynaecological wards at the University Teaching Hospital. This therefore calls for a critical analysis in the ailment's *presentation, management* and *post-treatment* at the University Teaching Hospital for an efficient and effective health care of this condition.

Currently, the *presentation* of pelvic abscesses at UTH is obscured in the general Pelvic Inflammatory Disease (PID) creating a delay in managing the acute condition on time. This obscurity can be attributed to a lapse on any of the four levels on the behavioural change scale namely awareness, knowledge, attitude and practise. Equally, the *management* of pelvic abscess at UTH is not adequately administered due to a lack of appropriate information (knowledge) on the prognosis and hence an element of trial and error clip in creating unfavourable outcomes on prescribed practices (treatments). Further, a lack of appropriate information also creates delays in surgical intervention and hence increases the possibilities of high mortality rates from pelvic abscesses. The *post-treatment* of pelvic abscesses at UTH has not been well documented. This has created a bankruptcy of knowledge as to whether the current practices in management of pelvic abscesses are appropriate and effective. Awareness and attitude to post-treatment long-term condition of pelvic abscess patients (even death) is a matter of serious concern and investigation among medical practitioners.

From the above observations, the problem at the University Teaching Hospital with regards to pelvic abscess ailment has been summed up as follows. Among medical practitioners in the Obstetrics and Gynaecology department, there is limited awareness and knowledge on the presentation of the ailment which leads to a lax

attitude in the diagnosis process and eventual poor management practices of the ailment. This poor management is compounded by inadequate knowledge on the ailment and thus impeding precise and critical practices to be performed. An absence of proper documentation (knowledge) on post-treatment condition of pelvic abscess patients leaves medical practitioners with little awareness of adverse outcomes of medical procedures resulting in a lax attitude towards improving current management practices. Below is a table indicating the areas of lapses in the healthcare of pelvic abscess ailment at the University Teaching Hospital.

Table 1:1 Problem Areas in Healthcare of Pelvic Abscess at UTH

|                  | Presentation                         | Management                                  | Post-Treatment                                  |
|------------------|--------------------------------------|---|---|
| <i>Awareness</i> | Limited awareness levels             |   | Unaware of long-term treatment outcome          |
| <i>Knowledge</i> | Limited knowledge                    | Limited knowledge on pelvic abscess ailment | Absence of proper post-treatment documentation  |
| <i>Attitude</i>  | Lax attitude in diagnosis            |   | Lax attitude in improving management of ailment |
| <i>Practice</i>  | Inappropriate treatment prescription | Delayed / ineffective treatment             |   |

#### 1.4 STUDY JUSTIFICATION

This study provides a comprehensive approach on the health care process of pelvic abscesses at the University Teaching Hospital in Lusaka, Zambia. The three level process of presentation, management and post-treatment of pelvic abscesses has been systematically reviewed and analyzed noting the lapses in the stages of the process in any of the key elements of awareness, knowledge, attitude and practice.

The study provides valuable information on making a precise identification of pelvic abscesses in a general PID *presentation* and treating it as such. This precise identification of pelvic abscess has been outlined in the disposition of medical practitioners' awareness, knowledge, attitude and practice towards the ailment as it is initially presented to them by a patient. Precise and efficient diagnosis will enhance effective management of the ailment and avoid delays experienced.

On the *management* of pelvic abscesses at the University Teaching Hospital, the study has highlighted the crucial need for an accurate knowledge on pelvic abscess

treatment in light of antimicrobial resistance strains. The study brings to fold and responds to the question of what is the best practise in managing pelvic abscess with either an exclusive antibiotic management or surgical practise or a combination of the two. This information will allow for efficient response to pelvic abscess ailments without unnecessary delays.

No study regarding *post-treatment* of pelvic abscess has been done at the University Teaching Hospital. This has created a situation where medical practitioners are less aware of the adverse effects of some management practices and with little or no knowledge experience of discharged patients. This ferments a general attitude among medical practitioners of ignoring even mortality rates from pelvic abscesses. This study has thus highlighted that awareness and knowledge during the post-treatment period is cardinal as it helps formulate better *departmental guidelines* in the management of pelvic abscesses. These guidelines eventually predispose medical practitioners to better attitudes towards post-treatment period of pelvic abscess patients. This ultimately will improve the health care for such patients.

## **1.5 STUDY HYPOTHESIS**

Patients with pelvic abscesses experiencing delayed and ineffective presentation and management of the ailment have a higher rate of morbidity and mortality in the post-treatment period.

## **1.6 RESEARCH OBJECTIVES**

### **1.6.1 General Objective**

To study the *presentation, management* and *post-treatment* of pelvic abscesses at the University Teaching Hospital.

### **1.6.2 Specific Objective**

1. To determine the *presentation* of pelvic abscesses at the University Teaching Hospital.
2. To determine the effectiveness of *management* of pelvic abscesses at the University Teaching Hospital.

3. To evaluate *post-treatment* period of pelvic abscess patients at the University Teaching Hospital.

### **1.7 RESEARCH QUESTIONS**

1. Is the *presentation* of pelvic abscess adequately assessed at the University Teaching Hospital?
2. How effective is the *management* of pelvic abscesses at the University Teaching Hospital?
3. Is there an efficient method of evaluating *post-treatment* period of pelvic abscess patients from the University Teaching Hospital?

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 INTRODUCTION**

Pelvic abscess is a common complication of Pelvic Inflammatory Disease (PID) in 15% of cases in the United States (DeWitt, 2010). The mortality associated with pelvic abscesses has decreased dramatically over the last 50 years globally. However, there is lack of accurate systematic documentation at the University Teaching Hospital to ascertain this decline in Zambia for patients presented at this hospital. As for morbidity associated with pelvic abscess, it remains significantly high globally with complications including infertility, ectopic pregnancy, chronic pelvic pain, pelvic thrombo-phlebitis and ovarian vein thrombosis (DeWitt, 2010). In the short term, complications also include, prolonged hospital stay, injury to intra abdominal and pelvic organs e.g. urinary bladder, bowel injury and ureteric injury etc. (Zekai, 2009). Again the University Teaching Hospital has not systematically documented morbidity cases caused by pelvic abscesses to provide accurate information for better prognosis and management of the ailment.

In this chapter, a review of global and local literature is made to establish the nature of pelvic abscess condition through its presentation, management and post-treatment. The desired awareness and knowledge of the ailment by medical practitioners is highlighted and the lacking for these two elements at the University Teaching Hospital is pointed out. Further, the review pinpoints the appropriate practices in the presentation, management and post-treatment levels of pelvic abscesses. Again there is a review of the lack of efficient and effective practices by medical practitioners at the University Teaching Hospital.

#### **2.1 PRESENTATION OF PELVIC ABSCESS**

##### **2.1.1 Pelvic Inflammatory Disease (PID)**

Pelvic abscess is an ailment that is part of the general pelvic inflammatory diseases (PID) in women. PID is a common cause of morbidity and accounts for 1 in 60 general practice consultation by women under the age of 45 (Fouda 2006). It normally presents with lower abdominal pain, tenderness, deep dyspareunia, abnormal vaginal or cervical discharge, cervical excitation and adnexal tenderness.

Body temperature of above 38°C is common (fever). Complications of PID include endometritis, salpingitis, parametritis, oophoritis, tuboovarian abscess and pelvic peritonitis (Fouda 2006).

### **2.1.2 Symptoms of Pelvic Abscess**

Pelvic abscess often presents with deep pelvic pain, tenderness, fever, increased urinary frequency and diarrhoea and/or vomiting. Late presentation may include septic shock especially in low economic set-up. End organ failure and systemic inflammatory response is often seen where both medical and surgical interventions are inadequate or lacking.

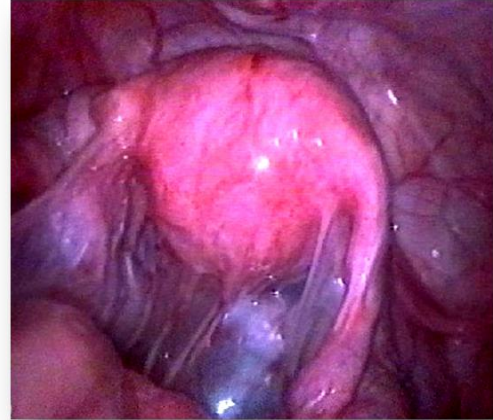


Figure 2:1 Pelvic Abscess

Therefore, as McNeely (1998) observes, it is a surgical/medical emergency whose delayed intervention often leads to the aforementioned consequences. There is a notable delay for such intervention at the University Teaching Hospital which creates adverse consequences for pelvic abscess patients admitted to its wards. This delay, as alluded to above, is as a result of lack of awareness and precise knowledge on the presentation of the ailment from the general PID. With this lack of awareness and knowledge it becomes difficult to prescribe accurate and appropriate management intervention at this hospital.

### **2.1.3 Major Associated Factors with Pelvic Abscesses**

#### ***2.1.3.1 Septic Abortions***

Globally, abortion mortality accounts for at least 13% of all maternal mortality. In Africa about 20 million abortions are performed annually, of these 5 million are septic and are associated with various complications including tuboovarian abscess (Suzanne 2006). Tuboovarian abscess is a recognized complication of septic abortion. It accounts for nearly a third of pelvic abscesses in developing countries. A study of septic abortions at a tertiary hospital in India revealed that maternal deaths secondary to septic abortions were as high as 10%. However, low social economic

status was a strong association accounting for 41% of the deaths. Among the early complications noted included, wound infections, secondary suturing, and intestinal obstructions. Late complications included chronic pelvic pain and secondary infertility. Hospital stay was also increased in patient presenting with septic abortions averaging 15-21 days. (Surendra et al 2002). Pelvic abscess is a recognized complication of septic abortion. It accounts for over 33% of gynaecological admissions in developing countries. Mortality may be as high as 25% especially those conducted at home (Surendra et al 2002).

### ***2.1.3.2 Intrauterine Contraceptive Device (IUCD)***

Intrauterine devices are highly effective methods of reversible contraception (Fouda 2010). However, it exposes the user to uterine perforation and infection especially at insertions. According to a trial conducted at Demietta General Hospital, it was concluded that uterine perforation during IUD insertion occurs at a rate of 0.6 to 1.6 per 1000 insertion (Surendra et al 2002). The women's health study data showed a relative risk of PID of 3.8 in the first month after insertion, reaching baseline risk after 4 months. The same study revealed that incidence of PID among IUD users is less than 2 episodes per 10 years of use in the general population. The insertion process and infection with sexually transmitted infections seems to be the ones responsible for increased relative risk of PID rather than the IUD itself in the first month of use. However, prolonged IUD use especially after age 40 significantly increases the risk by 10% (Landers 1985).

### **2.1.4 Incidences of Pelvic Abscess**

Incidences of pelvic abscess worldwide have been increasing especially with improved diagnostic procedures such as Computerized Tomography (CT) scans and Magnetic Resonance Imaging (MRT) which present accurate screening of ailments. Owing to these accurate screening techniques, associated factors (especially PID infection which is highly implicated in development of pelvic abscess) have been highly observed and recorded. The highest incidence is found in the age group 30 – 40 years, where PID which is highly associated with pelvic abscess is quite common (Chow et al 1975). Chow further points out that in Africa the high prevalence of PID has had a tremendous effect on pelvic abscess. Roberts et al (2008) points out that in one region of America, close to 30% of all gynaecological admissions were



secondary to severe PID, of which 10-15% developed tuboovarian abscess. On this matter however, Chow (1975) states that in Africa, limitations in methodology used in the literature has made it difficult to make formal conclusions on the incidence of tuboovarian abscess. This limitation has contributed to the lack of awareness and knowledge that medical practitioners at the University Teaching Hospital experience as well in dealing with pelvic abscesses.

Regionally not much has been done regarding pelvic abscesses directly. Zekang et al (1992) conducted a study of HIV prevalence in patients with sexually transmitted infection in Yaonde (Cameroon) and found a high prevalence of *N. gonorrhoea* as major cause of morbidity. Hence he recommended a national programme on STD control in order to reduce complications of STD's including pelvic abscesses. Van Dyck et al (1992) conducted another study in Congo (Zaire) in 1992 and reported on high level plasmid mediated Tetracycline resistance in Central Africa. The multi resistant gonococci in Congo (57%) was the leading cause of complications noted in STI infection leading to high prevalence of pelvic abscess with its long term sequence e.g. infertility and ectopic pregnancy. Chlamydia infection was very low in both studies.

Locally, Chavuma (2003) also demonstrated that Chlamydia infection is low in a study titled *Detection of HIV, Chlamydia gonorrhoea and herpes simplex by DNA, PCR in cervical vaginal fluid collelates of male to female transmission of HIV in primary infection in Zambia/Rwanda*. The team did not detect Chlamydia infection. This was replicated by Kasanda (2012) in his study on *Prevalence and Determinants of N. gonorrhea and Chlamydia Trachomatis* which did not detect any Chlamydia infections in all the patients sampled. However, gonorrhoea was detected in 37% of patients with PID with adnexal tenderness. The percentage was even higher (46%) in patients with adnexal masses. He thus pointed out that the choice of antibiotic must be targeted at *N. gonorrhoea*. Regionally and locally as noted above, research has not been conducted directly regarding pelvic abscess. This study hence highlights major gaps and recommends areas of improvements for medical practitioners.

## **2.2 MANAGEMENT OF PELVIC ABSCESSSES**

Typically 1 in 3 patients diagnosed with tuboovarian abscess have a history of PID in United States of America and Europe. While a majority of tuboovarian abscesses respond to antibiotic therapy, an approximately 25% of cases require surgery or drainage (DeWitt2010). Hence surgery and an initial antibiotic therapy are the main stay treatment of pelvic abscesses. In cases of small abscess or fluid collection in the pouch of Douglas, ultrasound-guided aspiration is less invasive and there is evidence that it is more effective compared to laparoscopy or Laparotomy (Ghaly 1994).

### **2.2.1 Antibiotic Use in Pelvic Abscess Management**

Originally treatment of pelvic abscess was thought to require bilateral oophorectomy and hysterectomy. However, over the years, medical management has evolved in the management of pelvic abscess. Use of broad spectrum antibiotics is now generally considered as the initial management for un-ruptured pelvic abscess (Landers 1983). However optimal treatment remains unclear.

The 2006 Centre for Disease Control (CDC) and Prevention of Sexually Transmitted Disease (PSTD) *Treatment Guidelines* recommends in-patients intravenous antibiotics for at least 24 hours. No specific in-patient antibiotic regime is suggested upon discontinuation of parenteral therapy, the CDC recommends broad spectrum antibiotics coverage including coverage of gram-negative, anaerobes for at least 24 hours. Oral antibiotic therapy and hospital discharge are acceptable when a patient has had a favourable clinical response to therapy.

### **2.2.2 Surgical Use in Pelvic Abscess Management**

Surgery or drainage is highly considered when a patient displays a failure to respond in 48 to 72 hours to antibiotic regime (Protopapars et al 2004). Drainage may be accomplished by Computerized Tomography Scan (CT) or ultrasound through the abdomen, vagina, rectum or transgluted. Gjellard et al (2005), in a retrospective review, observed that in 302 cases of transvaginal drainage of pelvic abscesses combined with antibiotics, 93% of patients avoided surgery and exhibited no major procedure-related complications. Perez-Medina et al (1996) randomized 40 women

to traditional conservative management versus antibiotic therapy plus early transvaginal drainage in un-ruptured tuboovarian abscesses and found that 90% had successful early response versus 65% in the control group. The study further demonstrated a shortened hospital stay time (averaging 7 days) compared to the control group  $\geq 10$  days.

Laparoscopic surgery is another management tool which has demonstrated remarkable benefits in terms of treatment outcome. Henry-Suchet (2002) as reported among 80 cases of pelvic abscess, laparoscopic drainage were successful in 72 (90%) of cases with minimal procedure-related complications. Yang et al (2002) also reported laparoscopic drainage was associated with shorter hospital stay and shorter period of postoperative complications compared to traditional Laparotomy drainage.

Garvais (2010) found out that, percutaneous drainage had 50% reduction in recurrent pelvic abscesses and the recovery period and hospital stay was dramatically reduced. New management options have further reduced complications and improves outcome. This was demonstrated in Germany and France where 384 patients with pelvic abscess were observed. The abscesses were drained using colpotomy under transvaginal guided ultrasound. Only 23 patients developed various complications and only 6 patients died (Garvais 2010).

## **2.3 POST-TREATMENT OF PELVIC ABSCESES**

### **2.3.1 Surgical Success or Failure in Relation to Abscess Size**

DeWitt et al (2010) found a strong association between pelvic abscess size and treatment outcome. They stated that the rate of development of complications and duration of hospitalization had a direct relationship with abscess size. The team concluded that the larger the size of the abscess, the increase in need for surgery or drainage as compared with smaller pelvic abscesses. Reed et al (1991) also found that increasing abscess size is associated with increasing need for operative management. DeWitt found that, there was a medical treatment failure rate of about 43% for abscesses greater than 8cm. Reed showed a failure rate of 35% for abscesses 7 to 9 cm and nearly 60% failure rate for abscesses more than 10 cm in diameter. Gjellard et al (2005) in contrast noted that treatment success was not affected by size

of the abscess or the presence of bilateral abscesses in a sample restricted to abscesses with maximal diameter of at least 3 cm.

### **2.3.2 A History of Previous Abdominal/Pelvic Surgery**

History of previous abdominal/pelvic surgery is a major risk factor for development of pelvic abscess (Granberg et al 2009). However, the risk of recurrent pelvic abscess was noted to be low when laparoscopic drainage was done compared to drainage at laparotomy. Pelvic surgery such as hysterectomy is invariably associated with a significant risk of post operation infection because it is virtually impossible to render vagina totally aseptic. Post – operative infection secondary to hematoma formation are not uncommon (McNeeley et al 1998).

### **2.3.3 A Lack of Statistical Data in Developing Countries on Pelvic Abscess**

Little statistics and information are available in Africa and other developing countries on pelvic abscess and related complications. Moreover, the lack of equipment to perform alternative management e.g. laparoscopy and ultrasound guided transvaginal drainage may increase co-morbidities in Zambia.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 INTRODUCTION**

This chapter outlines the methodology used in the research to obtain data and subsequent analysis of the same to produce results that would be interpreted appropriately.

#### **3.1 METHODS**

##### **3.1.1 STUDY DESIGN**

The study was retrospective cross section and involved a retrospective study of pelvic abscesses at the obstetrics and gynaecology department of the University Teaching Hospital in Lusaka, Zambia. A retrospective study for this research was justified due to the following factors. Pelvic abscess being a relatively rare disease presents with a relatively small number of patients. In the preceding six years, the obstetrics and gynaecology department had managed a number of patients with pelvic abscess creating detailed file records on the presentation, management and post-treatment of the ailment for each patient. These files became the only source of medical information in good quantity considering that only 8% of admissions at the department present with pelvic abscess. If patients would be the only source of information for the study, it would have required a very long period of time for the study to obtain adequate information for meaningful analysis and interpretation. A retrospective study affords an opportunity to utilize recorded files of preceding periods for study. The study frame as indicated above was a 6 year period from January 2009 to March 2015 covering a total of 75 months.

##### **3.1.2 VARIABLES**

Independent, dependent and extraneous (confounding) variables<sup>1</sup> were all considered during the study as follows:

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<sup>1</sup> The dependent variable represents the output or effect (or is tested to see if it is the effect). The independent variable represents the inputs or causes (or tested to see if they are the cause). In a statistics experiment, the dependent variable is the event studied and expected to change whenever the independent variable is altered. An extraneous variable may alter the dependent or independent variable though it is not the actual focus of the experiment (Everitt 2002)

### **3.1.2.1 Independent Variables**

The variables for patients that were kept constant are the following:-

- (i) Age -Age of pelvic abscess patients. Ailment mainly occurs in persons between the ages of 35 and 40.
- (ii) Sex -Pelvic abscess is an exclusively female ailment.
- (iii) Residence -Place of residence has bearing on healthcare such as abortion handling and STIs.

### **3.1.2.2 Dependant Variables**

#### *Presentation*

- (i) Abdominal pain -When abdominal pains persist for more than 7 days, it is a possible pelvic abscess ailment.  
-When abdominal pains are less than 7 days, pelvic abscess ailment may be absent.
- (ii) Fever -When fever persists for more than 7 days, it is a possible pelvic abscess ailment.  
-When fever is less than 7 days, pelvic abscess ailment may be absent.
- (iii) PV-discharge -When PV-discharge persists for more than 14 days, it is a possible pelvic abscess ailment.  
-When PV-discharge is less than 14 days, pelvic abscess ailment may be absent.
- (iv) Prolonged menses -When menses are prolonged for more than 1 year, it is a possible pelvic abscess ailment.  
-When prolonged menses are less than 1 year, pelvic abscess ailment may be absent.

#### *Management*

- (i) Antibiotics -When antibiotic regime is taken for 7 days, Pelvic abscess ailment is cured.  
- When antibiotic regime is taken for more than 7 days, pathogens are resistant to antibiotics.
- (ii) Laparotomy -When laparotomy for pelvic abscess is done within 48 hours of diagnosis, recovery is within 7 days of treatment.  
-When laparotomy for pelvic abscess is done beyond 48 hours of diagnosis, complications may arise.

### *Post –Treatment*

- (i) Recovery
  - When laparotomy for pelvic abscess is done within 48 hours of diagnosis, recovery is within 7 days of treatment.
  - When laparotomy for pelvic abscess is done after 48 hours of diagnosis, it may cause:-
    - a. Intensive Care Unit (ICU) admission
    - b. prolonged hospital stay
    - c. re-admission within 42 days<sup>2</sup>
    - d. re-laparotomy
- (ii) Complications (morbidity)
  - When laparotomy for pelvic abscess is done after 48 hours of diagnosis, it may cause complication of:-
    - a. severe anaemia
    - b. injury to internal organs (e.g. bowels) due to spread infection in tissues
    - c. wound infection
- (iii) Death (mortality)
  - When laparotomy for pelvic abscess is done after 48 hours of diagnosis, death may occur within 42 days from complications.

### **3.1.2.3 Extraneous (confounding) Variables**

- (i) Abortion
  - When an abortion is septic, it may lead to development of pelvic abscess.
  - When an abortion is not septic, it may not lead to development of pelvic abscess.
- (ii) IUCD
  - When, IUCD is inserted, it may lead to development of pelvic abscess.
  - When IUCD is not inserted, it may not lead to development of pelvic abscess.
- (iii) STIs
  - When STIs are present, it may lead to development of pelvic abscess.
  - When STIs are absent, it may not lead to development of pelvic abscess.
- (iv) Prior surgery (intra abdominal)
  - When an intra abdominal surgery less than 1 year, it may not lead to development of pelvic abscess.
  - When an intra abdominal surgery more is than 1 year, it may lead to development of pelvic abscess.

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<sup>2</sup> 42 days is the benchmark for maternal morbidity and mortality.

Table 3:1 Summary of Research Variables

|          | VARIABLES                          | BENCHMARK PERIOD    |                | PREDICTED RESULT IN BENCHMARK PERIOD  |   |
|----------|------------------------------------|---------------------|----------------|---------------------------------------|---|
|          |                                    | Appropriate Range   | Critical Range | Appropriate Range                     | Critical Range  |
| <b>A</b> | <b>INDEPENDENT VARIABLES</b>       |                     |                |                                       |   |
| 1        | Age                                | 35 - 40             |                |                                       |   |
| 2        | Sex                                | Female              |                |                                       |   |
| 3        | Residence                          | Urban               | Rural          |                                       |   |
| <b>B</b> | <b>DEPENDANT VARIABLES</b>         |                     |                |                                       |   |
|          | <b>Presentation</b>                |                     |                |                                       |   |
| 1        | Abdominal pain                     | 6 - 7 days          | < 7 days       | Pelvic abscess may be absent          | Pelvic abscess possibly present                                     |
| 2        | Fever                              | 6 - 7 days          | < 7 days       | Pelvic abscess may be absent          | Pelvic abscess possibly present                                     |
| 3        | PV-discharge                       | 7 - 14 days         | < 14 days      | Pelvic abscess may be absent          | Pelvic abscess possibly present                                     |
| 4        | Prolonged menses                   | 1 - 11 months       | ≤ 1 year       | Pelvic abscess may be absent          | Pelvic abscess possibly present                                     |
|          | <b>Management</b>                  |                     |                |                                       |   |
| 1        | Antibiotics                        | 7 days              | < 7 days       | Pelvic abscess is cured               | Pathogens are resistant to antibiotics                              |
| 2        | Laparotomy                         | > 48hours / 7 days  | < 48 hours     | Pelvic abscess is cured within 7 days | Complications may arise   |
|          | <b>Post-Treatment</b>              |                     |                |                                       |   |
| 1        | Recovery                           | > 48hours / 7 days  | < 48 hours     | Pelvic abscess is cured within 7 days | ICU, prolonged hospital stay, re-admission (42 days), re-laparotomy |
| 2        | Complications (Morbidity)          |                     | < 48 hours     |                                       | Severe anaemia, organ injury, wound infection                       |
| 3        | Death (mortality)                  |                     | < 48 hours     |                                       | Death within 42 days from complications                             |
| <b>C</b> | <b>EXTRANEIOUS VARIABLES</b>       |                     |                |                                       |   |
| 1        | Abortion                           | Non-Septic /sterile | Septic         | Pelvic abscess may be absent          | Pelvic abscess possibly present                                     |
| 2        | IUCD                               | No                  | Yes            | Pelvic abscess may be absent          | Pelvic abscess possibly present                                     |
| 3        | STIs                               | No                  | Yes            | Pelvic abscess may be absent          | Pelvic abscess possibly present                                     |
| 4        | Prior surgery<br>(Intra abdominal) | ≤ 1 year            | 1 year         | Pelvic abscess may be absent          | Pelvic abscess possibly present                                     |



### **3.1.3 QUALITATIVE RESEARCH TECHNIQUES**

#### ***3.1.3.1 In-depth Interviews***

The Principal Investigator interviewed 3 senior/resident doctors in the obstetrics and gynaecology department of the University Teaching Hospital to obtain in-depth information on the past and existing practices in the presentation, management and post-treatment of pelvic abscess patients in the department.

- *Research Instrument 1*: Senior/Resident Doctors Interview on Pelvic Abscess at the University Teaching Hospital.

#### ***3.1.3.2 Questionnaires***

Questionnaires were administered to 5 junior doctors in the obstetrics and gynaecology department of the University Teaching Hospital to provide data on the past and existing practices in the presentation, management and post-treatment of pelvic abscess patients in the department.

- *Research Instrument 2*: Junior Doctors' Questionnaire on Pelvic Abscess at the University Teaching Hospital.

#### ***3.1.3.3 Participant Observer: Surgical Treatment***

The Principal Investigator being a member of the surgical team in the obstetrics and gynaecology department of the University Teaching Hospital participated in surgical treatment of pelvic abscess patients and recorded his observations on the research instrument designed for this purpose. Five observations were recorded after random selection. These observations were made in the period the principal investigation was doing his masters studies at the department.

- *Research Instrument 3*: Principal Investigator's Participation in a Pelvic Abscess surgery at the University Teaching Hospital.

### **3.1.4 QUANTITATIVE RESEARCH TECHNIQUES**

For quantitative data on pelvic abscess, patient files with a working diagnosis of pelvic abscess were retrieved from two sources at the University Teaching Hospital's Obstetrics and Gynaecological Department namely:-

- (i) Admission registers in the gynaecology admission ward, and

- (ii) Gynaecology surgical registers in the C-Block Operating Theatres (Operating Theatre Gynaecology).

Data from patient files was then recorded using the research instruments designed for the three levelled approach under study namely presentation, management and post-treatment as expounded below:-

#### ***3.1.4.1 Pelvic Abscess Presentation***

In this component, the researcher recorded data from the patient's file on recognition of PID through symptoms and signs and risk factors associated with pelvic abscess. Further, data on diagnosis and specific symptoms of pelvic abscess were retrieved. Hospital admission details and prescribed treatment were retrieved as well.

- *Research Instrument 4: Pelvic Abscess Presentation in Patients*

#### ***3.1.4.2 Pelvic Abscess Management***

Though simultaneously prescribed, the study made a distinction between antibiotic management and surgical (laparotomy) management of pelvic abscess. Therefore data collection for this component reflected the two treatments. For the antibiotic management, data included prescribed drugs and course. Retrieved data on surgical management included hospital admission and laparotomy details such as duration of operation and any complications arising during surgery.

- *Research Instrument 5: Pelvic Abscess Management in Patients*

#### ***3.1.4.3 Pelvic Abscess Post-Treatment***

Data for the post-treatment period lacked a depth for the longer period as discharged patients rarely re-visit the department. The researcher however managed to retrieve data on the responsiveness of patients to antibiotic treatment over a given period of time. Data was also retrieved on any complications that could have arisen after surgical treatment. This post-treatment period also includes mortality rates.

- *Research Instrument 6: Pelvic Abscess Post-Treatment*

## 3.2 SAMPLING PROCEDURES

### 3.2.1 Population and Study Site

The study targeted all patients who were attended to at the obstetrics and gynaecology department of the University Teaching Hospital in Lusaka, Zambia between January 2009 and March 2015.

### 3.2.2 Sample Frame and Study Group

The sample frame for the study was patients who presented with abdominal pain symptomatic of pelvic inflammatory disease (PID) at the emergency wards in the gynaecology department over the stated time period. From this category, a study group was formed comprising patients with working diagnosis of pelvic abscess clinically or at operation. Clinically refers to those patients for whom a diagnosis of pelvic abscess is made before any management is done. Diagnosing at operation refers to patients being operated for other conditions e.g. ovarian cyst but intra-operation turns out to be pelvic abscess.

### 3.2.3 Inclusion and Exclusion Criteria

The inclusion criteria was for only patient files diagnosed with pelvic abscess in the period 2009 and March 2015 admitted to the Obstetrics/Gynaecology department of the University Teaching Hospital. There were no exclusion criteria for this study.

### 3.2.4 Sample Size

For the sample size of the study, the following formula was used to arrive at the number of patient data investigated:-

$$N = \frac{Z^2 \times PQ}{D^2} = \frac{Z^2 \times P(1 - P)}{D^2}$$

Where Z is the confidence level at 95% (standard value of 0.005)

D is the specific margin of 42202 at 5% (standard value of 0.005)

P is the estimate of population with characteristic of interest

A review of records at UTH estimates a prevalence rate of 8%

Q = 1 - P

At 95% power, alpha 5%

N = 113.1

**N = 113 Patients**

The distribution of patients in each year varied as follows: 2009 – 15, 2010 – 18, 2011 – 28, 2012 - 15, 2013 - 19, 2014 – 13, and 2015 – 5.

### **3.2.5 Selected Sampling Method**

Non-probability (convenient) sampling was used in the study to select:-

- (i) The 3 senior doctors for in-depth interviews
- (ii) The 5 junior doctors to respond to questionnaires
- (iii) The 113 patient files for investigation

### **3.3 DATA GATHERING METHODS**

The study utilized designed research instruments specified for each particular data required in the various categories. The titles of the research instruments are specified below while the actual samples are featured in Appendix 2.

- *Research Instrument 1: Senior/Resident Doctors Interview on Pelvic Abscess at the University Teaching Hospital.*
- *Research Instrument 2: Junior Doctors' Questionnaire on Pelvic Abscess at the University Teaching Hospital.*
- *Research Instrument 3: Principal Investigator's Participation in a Pelvic Abscess Surgery at the University Teaching Hospital.*
- *Research Instrument 4: Pelvic Abscess Presentation in Patients*
- *Research Instrument 5: Pelvic Abscess Management in Patients*
- *Research Instrument 6: Pelvic Abscess Post-Treatment*

### **3.4 DATA ANALYSIS**

The data collected was analyzed using Statistical Package for Social Sciences (SPSS). Descriptive analysis was performed and appropriate cross reference table charts produced. The tables provided percentage and frequency distribution of studied incidents. For qualitative data obtained from in-depth interviews, cross-referencing tables were produced and aggregate views obtained from them.

### **3.5 ETHICAL CONSIDERATIONS**

Permission was sought in writing from the University Teaching Hospital (UTH) administration and the Head of department of Obstetrics and Gynaecology. Patients' records were assigned code numbers for identification and accountability purposes,

thus no patients' names were disclosed in the study upholding the doctor-patient confidentiality ethics. For the interviewed medical practitioners and those who responded to questionnaires, a consent letter was availed to them for signing and the information disclosed by them was used strictly for study purposes. Their identities were equally kept confidential by assigning them code numbers. Finally, before commencement of the study, ethical clearance was obtained from *ERES Converge*, an independent review board, as per standard requirement.

### **3.6 LIMITATIONS OF THE STUDY**

This study experienced a number of limitations. Pelvic abscesses are not a common ailment in relation to other gynaecological ailments at the department. Therefore to have a substantial sample of patients for a study, very long periods of time are required. Hence, for this study to have meaningful quantity of sampled patients, a retrospective approach was taken other than relying on existing patients admitted in the gynaecology wards. This aspect of relying mostly on past cases removed the vital element of firsthand experience with the ailment under study. A lack of interaction with patients limited the amount of information that can be obtained and be used for the study. Further, there was only a reliance on documented information implying any unrecorded data was missed out.

## CHAPTER FOUR

### PRESENTATION OF FINDINGS

#### 4.0. INTRODUCTION

Investigation was made into the presentation, management and post-treatment levels of Pelvic abscess patients in the obstetrics and gynaecological department at the university Teaching Hospital, Lusaka, Zambia. Being a retrospective study, 113 pelvic abscess patients' medical files from January 2009 to March 2015 were reviewed and data entered in the respective research instruments designed for the investigation. In addition, 3 senior doctors were interviewed and 5 junior doctors responded to questionnaires in order to provide information on their experiences and practices with regards to pelvic abscess in the department. Lastly, 5 laparotomy operations were observed by this researcher to obtain practical data on the procedures in surgical management of pelvic abscess. This chapter presents the findings of the investigation in response to the set objectives and research questions of the study. The results are presented for the three (3) levelled processes in the healthcare of pelvic abscess with particular interest on the elements of awareness, knowledge, attitude and practice as applicable at each level.

#### 4.1. PRESENTATION OF PELVIC ABSCCESS

##### 4.1.1 Description of Age, Location and Admission Variables

##### *4.1.1.1 Population Sample Age Distribution*

The age ranges for the patients assessed were 26 – 35 years (41 -36.3%) and those between 16 – 25 years (37 -32.7%). Interestingly there were 3 (2.7%) persons aged 0-16 years as well as indicated in the figure below:-

Table 4.1: Patients' Age Distribution

| Age Range    | Frequency  | Percent      |
|--------------|------------|--------------|
| 0-16         | 3          | 2.7          |
| 16-25        | 37         | 32.7         |
| 26-35        | 41         | 36.3         |
| 36-40        | 21         | 18.6         |
| Above 40     | 11         | 9.7          |
| <b>Total</b> | <b>113</b> | <b>100.0</b> |

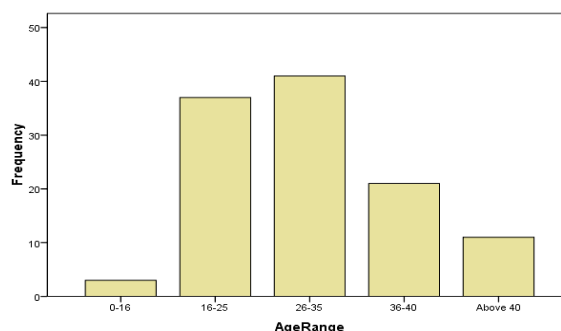


Figure 4.1: Patients' Age Distribution

#### 4.1.1.2 Population Sample Location Distribution

Patients from high density areas presented the highest frequency of 75 (66.4%). Rural areas had a marginal representation of 6 (5.3%) patients owing to the fact that UTH is a referral hospital. Low density areas (17 -15.0%) and medium density areas (15 -13.3%) had minimal frequencies as indicated in the figure below:-

Table 4.2: Patients' Location Distribution

| Location       | Frequency  | Percent      |
|----------------|------------|--------------|
| High Density   | 75         | 66.4         |
| Low Density    | 17         | 15.0         |
| Medium Density | 15         | 13.3         |
| Rural          | 6          | 5.3          |
| <b>Total</b>   | <b>113</b> | <b>100.0</b> |

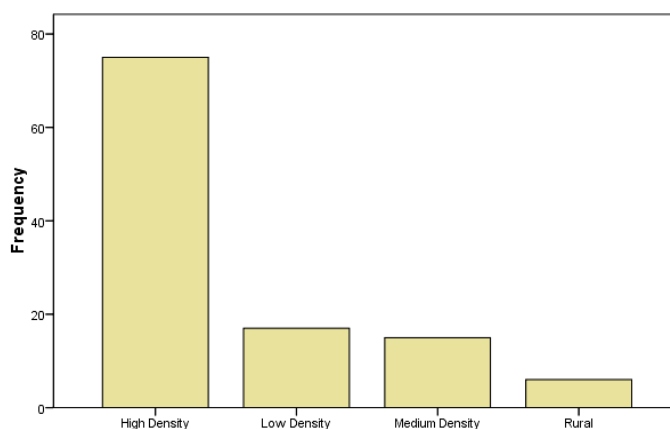


Figure 4.2: Patients' Location Distribution

#### 4.1.1.3 Patients' Admission Duration

Two notable admission ranges for patients were 1-5 days representing 38.9% (44) and 6-10 days representing 35.4% (40). It is also of serious concern that 10.6% (12) of the patients were admitted for almost a month as indicated in the figure below:-

Table 4.3: Patients' Admission Duration

| Adm. Duration | Frequency  | Percent      |
|---------------|------------|--------------|
| (a) 1 - 5     | 44         | 38.9         |
| (b) 6 - 10    | 40         | 35.4         |
| (c) 11 - 15   | 12         | 10.6         |
| (d) 16 - 20   | 3          | 2.7          |
| (e) 21 - 25   | 2          | 1.8          |
| (f) 26 - 30   | 12         | 10.6         |
| <b>Total</b>  | <b>113</b> | <b>100.0</b> |

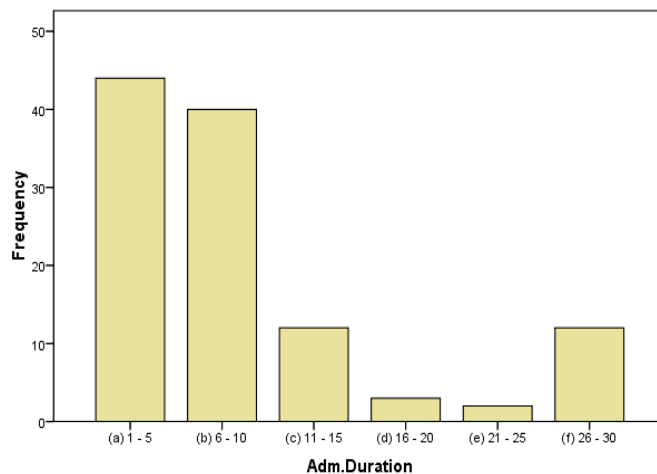


Figure 4.3: Patients' Admission Duration

#### 4.1.2 Description of the AKAP Elements in Pelvic Abscess Presentation

The study focused on assessing 4 elements (*awareness, knowledge, attitude and practice*) in the three fold study of presentation, management and post-treatment of pelvic abscess. The results are presented in two broad categories of quantitative and qualitative data. The quantitative data was obtained from patients file while qualitative data was obtained from interviews, questionnaires and participant observation. For participant observation, the findings have been collectively presented at the end of this chapter.

#### QUANTITATIVE ANALYSIS

##### 4.1.2.1 Awareness Levels in Pelvic Abscess Presentation

The findings on awareness levels are in 3 sections of recognition of PID, PID symptoms and signs and risk factors associated with pelvic abscess. Pelvic abscess was recognised in 93.8% of the presented cases. Lower abdominal pain (92.0%) and PV-discharge (86.7%) were the common symptoms. On the risk factors, it was discovered that general PID had the highest recording (51.3%) in the cases presented. There was 42.5% HIV+ as a risk factor. This has a particular aspect since it lowers immunity for recovery from pelvic abscess. The 38.9% of abortion as a risk factor presenting is also of a serious concern considering that the average age range of these patients are in the reproductive periods of their lives. Below are tables displaying the said results:-

##### (a) Recognition of PID

The findings indicated that there was a 93.8% (106) of recognition of Pelvic Inflammatory Disease (PID) in the sampled patients with 6.2% (7) being unrecognisable.

##### (b) PID Symptoms & Signs

Table 4.4: PID Symptoms & Signs

|   | PID Symptoms & Signs       | Frequency |         |       | Percent |         |       |
|---|----------------------------|-----------|---------|-------|---------|---------|-------|
|   |                            | Valid     | Exclude | Total | Valid   | Exclude | Total |
| 1 | Lower Abdominal Pain       | 104       | 9       | 113   | 92.0    | 8.0     | 100   |
| 2 | Pain on Sexual Intercourse | 25        | 88      | 113   | 22.1    | 77.9    | 100   |
| 3 | PV-Discharge               | 98        | 15      | 113   | 86.7    | 13.3    | 100   |



### (c) Risk Factors

Table 4.5: Risk Factors for Pelvic Abscess

|   | Risk Factors                     | Frequency |         |       | Percent |         |       |
|---|----------------------------------|-----------|---------|-------|---------|---------|-------|
|   |                                  | Valid     | Exclude | Total | Valid   | Exclude | Total |
| 1 | STIs                             | 37        | 76      | 113   | 32.7    | 67.3    | 100   |
| 2 | PID                              | 58        | 55      | 113   | 51.3    | 48.7    | 100   |
| 3 | History Abdominal/Pelvic Surgery | 24        | 89      | 113   | 21.2    | 78.8    | 100   |
| 4 | Abortion                         | 44        | 69      | 113   | 38.9    | 61.1    | 100   |
| 5 | IUCD                             | 13        | 100     | 113   | 11.5    | 88.5    | 100   |
| 6 | RVT                              | 48        | 65      | 113   | 42.5    | 57.5    | 100   |

#### ***4.1.2.2 Knowledge Levels in Pelvic Abscess Presentation***

The findings on knowledge levels are in 2 sections of positive pelvic abscess diagnosis and pelvic abscess symptoms. In 94.7% of cases under study, a positive diagnosis of PID was made indicating a high knowledge level on the part of medical practitioners to whom patients present. Three major symptoms of pelvic abscess in the presented cases were abdominal pain with 112 (99.1%) patients out of the 113 of patients under study; 111 (98.2%) patients of 113 displayed high fever and 109 (96.5%) patients of 113 had PV-discharge.

#### (a) Positive Pelvic Abscess Diagnosis

The results revealed that there was a 94.7% (107) positive diagnosis of pelvic abscess in the sampled patients. Only 5.3% (6) of cases did not present a positive diagnosis of pelvic abscess.

#### (b) Pelvic Abscess Symptoms

Table 4.6: Pelvic Abscess Symptoms

|   | Pelvic Abscess Symptoms | Frequency |         |       | Percent |         |       |
|---|-------------------------|-----------|---------|-------|---------|---------|-------|
|   |                         | Valid     | Exclude | Total | Valid   | Exclude | Total |
| 1 | Abdominal Pain          | 112       | 1       | 113   | 99.1    | 0.9     | 100   |
| 2 | Fever                   | 111       | 2       | 113   | 98.2    | 1.8     | 100   |
| 3 | PV-Discharge            | 109       | 4       | 113   | 96.5    | 3.5     | 100   |
| 4 | Prolonged Menses        | 33        | 80      | 113   | 29.2    | 70.8    | 100   |
| 5 | Adnexal Mass            | 84        | 29      | 113   | 74.3    | 25.7    | 100   |

#### **4.1.2.3 Attitude Levels in Pelvic Abscess Presentation**

Though attitudes are a subjective quality and difficult to measure, the promptness of admission of a patient with pelvic abscess displays this attitude of medical practitioners. The findings indicated that in all 113 cases, admission was immediate.

#### **4.1.2.4 Practice Levels in Pelvic Abscess Presentation**

Except for the prescribed treatment in the 113 patients, findings on the practice level of pelvic abscess presentation were obtained from qualitative data of doctors' interviews, questionnaires and participant observation. Background information on the 8 doctors is presented before the results. The protocol practice at UTH is to prescribe both antibiotics and laparotomy for the treatment of pelvic abscess. The results indicated that in 72.6% (82) of the sampled cases, there was adherence to the protocol. Only 27.4% (31) had an exclusive antibiotic treatment.

The responses to interviews and questionnaires are presented in table form and generally indicate a similar pattern for respective questions as indicated below:-

### **QUALITATIVE ANALYSIS**

#### **(a) Background Information on Participating Doctors**

Table 4.7: General Doctors' Information

|   | <b>CODE</b>           | <b>JOB TITLE</b> | <b>RESPONSIBILITY AT<br/>OBS. &amp; GYN. DEPT.</b> | <b>LENGTH OF<br/>SERVICE</b> |
|---|-----------------------|------------------|--|------------------------------|
|   | <b>Senior Doctors</b> |                  |  |                              |
| 1 | OB/UTH/SD01           | Consultant       | Supervision / pt mx                                | 18 years                     |
| 2 | OB/UTH/SD02           | Consultant       | Patient mx / leadership                            | 25 years                     |
| 3 | OB/UTH/SD03           | Consultant       | Mx of patients                                     | 15 years                     |
|   | <b>Junior Doctors</b> |                  |  |                              |
| 1 | OB/UTH/JD01           | JRMO             | Managing patients                                  | 3 months                     |
| 2 | OB/UTH/JD02           | JRMO             | Clinical duties                                    | 6 months                     |
| 3 | OB/UTH/JD03           | JRMO             | Clinical / mx patients                             | 5 months                     |
| 4 | OB/UTH/JD04           | JRMO             | Patient management                                 | 6 months                     |
| 5 | OB/UTH/JD05           | JRMO             | Clinical duties                                    | 5 months                     |

## (b) Responses of Senior Doctors in the Interviews

For ease reference, the questions have been reproduced before the tables indicating the results.

1. Have you attended to patients who present with Pelvic Inflammatory Disease?
2. Are you readily able to diagnose pelvic abscess from a patient with PID?
3. What treatment do you prescribe for patients with pelvic abscess?

Table 4.8: Interview Responses on PA – Senior Doctors

| S/N | CODE        | Response Q1 | Response Q2                       | Response Q3                              |
|-----|-------------|-------------|-----------------------------------|--|
| 1   | OB/UTH/SD01 | Yes         | Yes – PA is a complication in PID | IV antibiotics + surgery                 |
| 2   | OB/UTH/SD02 | Yes         | Yes                               | IV antibiotics + surgery                 |
| 3   | OB/UTH/SD03 | Yes         | Yes – PA is a complication in PID | IV antibiotics + surgery<br>(laparotomy) |

## (c) Junior Doctors – Questionnaires

1. Have you attended to patients who present with Pelvic Inflammatory Disease?
2. Are you readily able to diagnose pelvic abscess from a patient with PID?
3. What treatment do you prescribe for patients with pelvic abscess?

Table 4.9: Interview Responses on PA – Junior Doctors

| S/N | CODE        | Response Q1 | Response 2                         | Response 3                                      |
|-----|-------------|-------------|------------------------------------|---|
| 1   | OB/UTH/JD01 | Yes         | Yes                                | IV antibiotics + surgery                        |
| 2   | OB/UTH/JD02 | Yes         | Yes                                | IV antibiotics, laparotomy, blood, an analgesia |
| 3   | OB/UTH/JD03 | Yes         | Yes, but sometimes it is difficult | IV fluids, IV antibiotics, laparotomy           |
| 4   | OB/UTH/JD04 | Yes         | Yes                                | IV antibiotics + surgery                        |
| 5   | OB/UTH/JD05 | Yes         | Not easy                           | IV antibiotics + surgery                        |

## 4.2. MANAGEMENT OF PELVIC ABSCESS

This section presents the findings on management of pelvic abscess in patients obtained from patient files and medical doctors who were interviewed and those presented with questionnaires. For management, only two elements of knowledge and practice were under assessment. As mentioned above, the treatment protocol of pelvic abscess at UTH is the use of both antibiotics and surgery. The section thus presents findings in these two categories.

### 4.2.1 Knowledge & Practice in Antibiotic Treatment of Pelvic Abscess

The findings on knowledge and practice of antibiotic treatment comprise of an assessment of the drug regime prescribed and the course period for their use by patients. The second drug regime of *Cefotaxime, Metronidazole* was commonly used presenting 68.1% (77). Regime 3 of *Cefotaxime, Metronidazole* for acute cases represented 14.2% (16) with the first mild regime of *Ciproflaxacin, Metronidazole, Doxycycline* representing 17.7% (20) of use. The drug usage thus formed a normal distribution curve. For drug course period, an average of 5 to 10 days was common representing 35.4% (40) and 34.5% (39) respectively as indicated in the figures below:-

#### (a) Antibiotics Prescribed

Table 4.10: Antibiotic Regime

| Antibiotic Regime | Frequency  | Percent    |
|-------------------|------------|------------|
| Regime 1          | 20         | 17.7       |
| Regime 2          | 77         | 68.1       |
| Regime 3          | 16         | 14.2       |
| <b>Total</b>      | <b>113</b> | <b>100</b> |

Regime 1: Ciproflaxacin, Metronidazole, Doxycycline

Regime 2: X-pen, Gentamycin, Metronidazole

Regime 3: Cefotaxime, Metronidazole

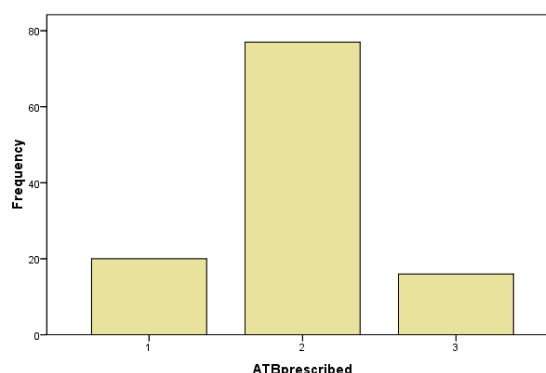


Figure 4.4: Antibiotic Regime

#### (b) Drugs Course Period

Table 4.11: Drug Course Period

| Course       | Frequency  | Percent      |
|--------------|------------|--------------|
| (a) Less 5   | 30         | 26.5         |
| (b) 5        | 40         | 35.4         |
| (c) 5 - 10   | 39         | 34.5         |
| (d) 11 - 15  | 4          | 3.5          |
| <b>Total</b> | <b>113</b> | <b>100.0</b> |

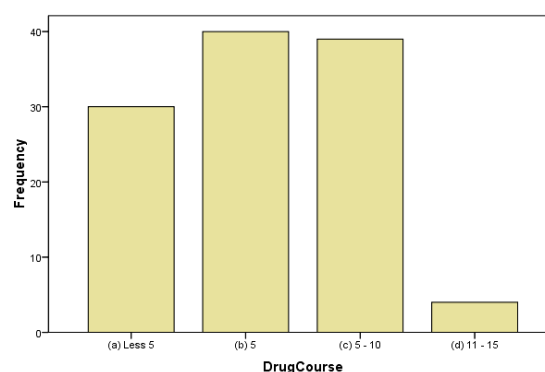


Figure 5.5: Drug Course Period

### 4.2.2 Knowledge & Practice in Surgical Management of Pelvic Abscess

The findings on knowledge and practice of surgical management comprise of hospital admission assessment and laparotomy assessment.

#### 4.2.2.1 Admission: Periods before and after Laparotomy & Admission Duration

##### (a) Period before laparotomy

The majority of patients were admitted into hospital before a laparotomy for a period of 1-3 days representing 70.8% (80). This is a standard protocol period in which preparations are made for the patient to be operated on. One patient (0.9%) represented an emergency case upon arrival at the hospital while 3 (2.7%) had 10 days or more of waiting calling into question the safety of this delay.

Table 4.12: Period before laparotomy

|              | Frequency  | Percent      |
|--------------|------------|--------------|
| 4 - 6        | 23         | 20.4         |
| 0            | 1          | 0.9          |
| 1 - 3        | 80         | 70.8         |
| 7 - 10       | 6          | 5.3          |
| above 10     | 3          | 2.7          |
| <b>Total</b> | <b>113</b> | <b>100.0</b> |

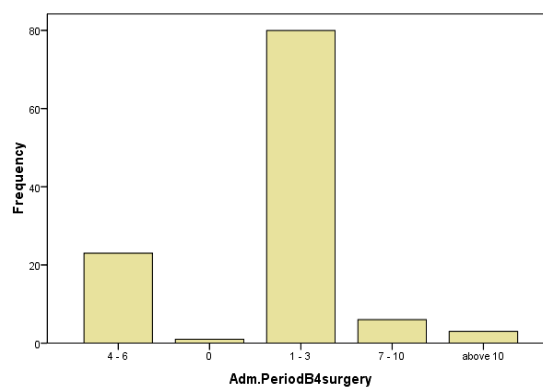


Figure 4.6: Period before laparotomy

##### (b) Period after laparotomy

Results for hospital stay after laparotomy indicated that generally most patients did not exceed 6 days in hospital for recovery as indicated in the figure below:-

Table 4.13: Period after laparotomy

|              | Frequency  | Percent      |
|--------------|------------|--------------|
| No surgery   | 36         | 31.8         |
| Died         | 1          | 0.9          |
| 1 - 3        | 23         | 20.4         |
| 4 - 6        | 27         | 23.9         |
| 7 - 10       | 13         | 11.5         |
| above 10     | 13         | 11.5         |
| <b>Total</b> | <b>113</b> | <b>100.0</b> |

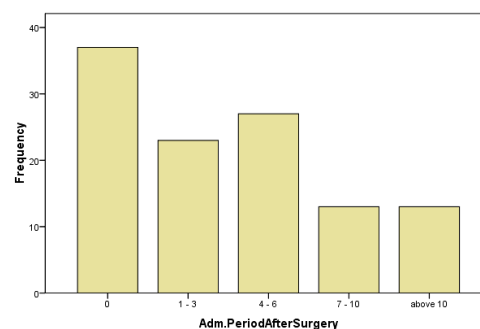


Figure 4.7: Period after laparotomy

(c) Admission Duration

The aggregate of admission in hospital for pelvic abscess treatment was on average less than 10 days. 38.9% (44) stayed less than 5 days which is ideal while 35.4% (40) stayed between 6-10 days. Serious concern is raised for those who stayed above 20 days with 1.8% (2) staying between 12-25 days and 10.6% (12) nearly a month. This last group calls for more investigation.

Table 4.14: Duration of Admission

|              | Frequency  | Percent      |
|--------------|------------|--------------|
| (a) 1 - 5    | 44         | 38.9         |
| (b) 6 - 10   | 40         | 35.4         |
| (c) 11 - 15  | 12         | 10.6         |
| (d) 16 - 20  | 3          | 2.7          |
| (e) 21 - 25  | 2          | 1.8          |
| (f) 26 - 30  | 12         | 10.6         |
| <b>Total</b> | <b>113</b> | <b>100.0</b> |

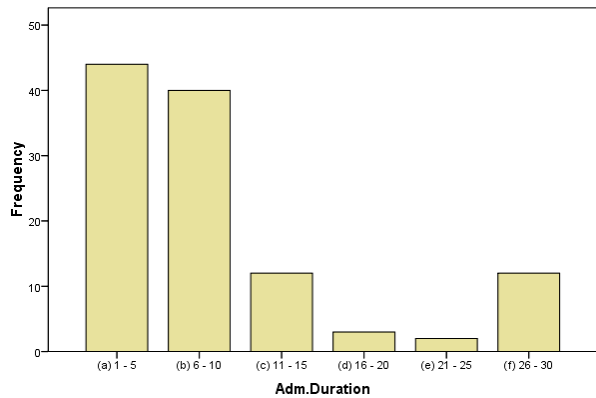


Figure 4.8: Duration of Admission

**4.2.2.2 Laparotomy**

(a) Laparotomy Duration

The duration of a laparotomy reflects the ease or difficulty of the operation. When complications arise, operations take longer than expected. The research results indicated that a good number of operations were within the acceptable 2 hours period (39.8% - 45). Concern should be raised for the 2 patients representing 1.8% who went for 4 hours as indicated in the figure below:-

Table 4.15: Laparotomy Duration

| Hours        | Frequency  | Percent      |
|--------------|------------|--------------|
| No surgery   | 36         | 31.9         |
| 2            | 45         | 39.8         |
| 3            | 30         | 26.5         |
| 4            | 2          | 1.8          |
| <b>Total</b> | <b>113</b> | <b>100.0</b> |

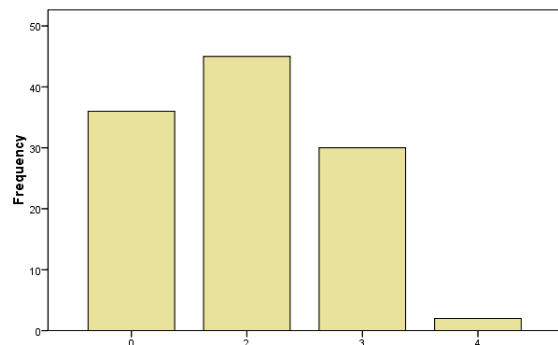


Figure 4.9: Laparotomy Duration

### (b) Number of Attending Surgeons

The practicing protocol at UTH for surgery is that there should always be at least two (2) surgeons attending to a patient. 29.2% (33) of patients under study did not undergo laparotomy. Of those who underwent laparotomy, 42.5% (48) were attended by one (1) surgeon. Those who had the acceptable standard of two (2) surgeons represented 25.7% (29) while 2.7% (3) refused to be operated on as indicated in the figure below:-

Table 4.16: Attending Surgeons

| Surgeons     | Frequency  | Percent      |
|--------------|------------|--------------|
| No surgery   | 33         | 29.2         |
| 1            | 48         | 42.5         |
| 2            | 29         | 25.7         |
| LAMA         | 3          | 2.7          |
| <b>Total</b> | <b>113</b> | <b>100.0</b> |

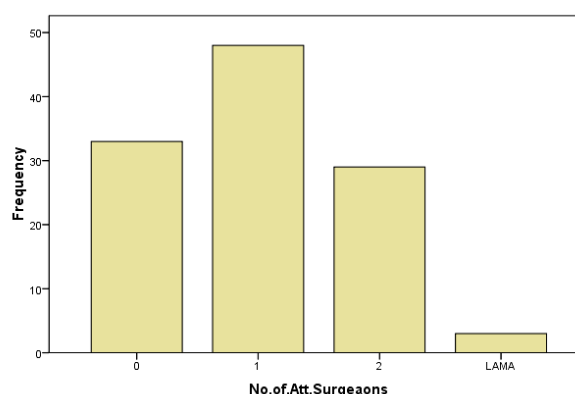


Figure 4.10: Attending Surgeons

### (c) Intra-Operation Complications

The study also assessed complications that arise during laparotomy. In the patients under study 2 major complications arose namely internal organ injury representing 10.4% and blood loss of  $\geq 1000$ mls representing 28.4% as indicated below:-

Table 4.17: Intra-operation Complications

|   | Intra-operation Complications | Frequency |        |       | Percent |        |       |
|---|-------------------------------|-----------|--------|-------|---------|--------|-------|
|   |                               | Present   | Absent | Total | Present | Absent | Total |
| 1 | Internal Organ Injury         | 8         | 69     | 77    | 10.4    | 89.6   | 100   |
| 2 | Blood Loss $\geq 1000$ mls    | 22        | 55     | 77    | 28.6    | 71.4   | 100   |
| 3 | Others                        | 51        | 26     | 77    | 66.2    | 33.8   | 100   |
| 4 | Intra-Operation diagnosis     | 7         | 0      | 70    | 9.1     | 90.1   | 100   |

### 4.2.3 Period Assessment in Efficiency of Managing Pelvic Abscess

One of the decisive aspects of successful management of pelvic abscess is the speed of responding to the patient presenting with the ailment. Because pelvic abscess is an internal ailment and spreads rapidly, quick diagnosis and surgical intervention effectively treats the ailment. The crucial periods thus are the period from admission of a patient to being diagnosed and the period from diagnosis to laparotomy. The results revealed that in 51.3% (58) of the sampled patients, diagnosis was immediate. What calls for concern are patients whose diagnosis occurred after more than 5 days and in particular the 5.3% (6) whom it occurred after 10 days. For the period between diagnosis and laparotomy, there was immediate operation in 31.0% (35) and a day's delay in 20.4% (23). Again concern should be raised on those whose delay was above 5 days as indicated in the figures below:-

Table 4.18: Period 1: Adm. - Diagnosis

| Period 1 (Days) | Frequency  | Percent    |
|-----------------|------------|------------|
| 0 -immediate    | 58         | 51.3       |
| 1               | 22         | 19.5       |
| 2               | 10         | 8.8        |
| 3 - 4           | 5          | 4.4        |
| 5 - 7           | 9          | 8.0        |
| 8 - 10          | 3          | 2.7        |
| Above 10        | 6          | 5.3        |
| <b>Total</b>    | <b>113</b> | <b>100</b> |

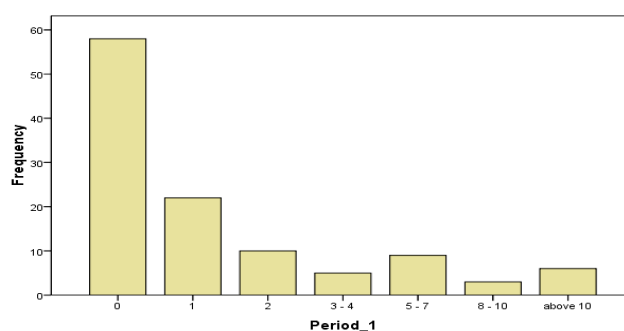


Figure 4.11: Period 1: Adm. - Diagnosis

Table 4.19: Period 2: Diagnosis – laparotomy

| Period 2 (Days) | Frequency  | Percent    |
|-----------------|------------|------------|
| 0               | 35         | 31.0       |
| 1               | 20         | 17.7       |
| 2               | 11         | 9.7        |
| 3 - 4           | 7          | 6.2        |
| 5 - 7           | 1          | 0.9        |
| 8 - 10          | 1          | 0.9        |
| Above 10        | 1          | 0.9        |
| Died            | 1          | 0.9        |
| LAMA            | 3          | 2.6        |
| Not prescribed  | 33         | 29.2       |
| <b>Total</b>    | <b>113</b> | <b>100</b> |

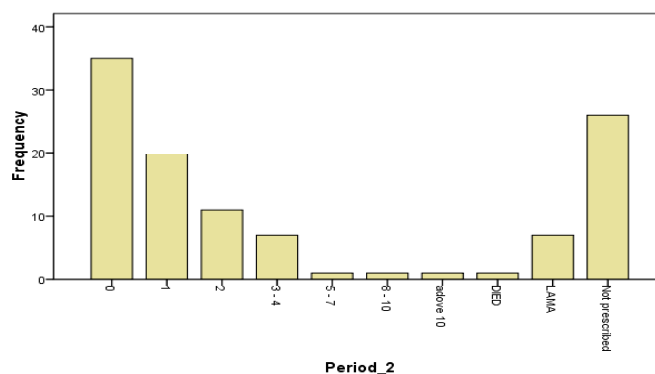


Figure 4.12: Period 2: Diagnosis – laparotomy.



## QUALITATIVE ANALYSIS

Qualitative data comprised of 3 components namely interviews of 3 senior doctors in the Obstetrics and Gynaecology department, questionnaires administered to 5 junior doctors in the same department and 5 observation of a laparotomy by the principle investigator. The results for these laparotomy observations are collectively presented at the end of the section on post-treatment. The results below reflect both senior doctors' interview responses and junior doctors' questionnaire responses. Each segment has 3 components namely (a) antibiotic management, (b) laparotomy management and, (c) complications. For ease of reference, the questions responded to have been reproduced before the results are displayed.

### 4.2.4 Senior Doctors Interview Responses

#### 4.2.4.1 Antibiotic Management

There was generally a positive affirmation of the use of antibiotic treatment from the 3 senior doctors. The success of antibiotics was rated above 85%. Even with recorded deaths from pelvic abscess, there was a future action taken for preventing deaths as indicated below:-

1. Have you administered antibiotics as a regime for pelvic abscess treatment?
2. Has antibiotic treatment been effective in pelvic abscess treatment?
3. Can you estimate a percentage of success of this drug regime?
4. Have you observed pelvic abscess patients dying due to non-response to antibiotics?
5. If yes, can you recall what course of action was taken for future treatment?

Table 4.20: Interview Responses on Antibiotic Management – Senior Doctors

| S/N | CODE        | Response Q1 | Response Q2                    | Response Q3                 | Response Q4                                  | Response Q5  |
|-----|-------------|-------------|--------------------------------|-----------------------------|--|--|
| 1   | OB/UTH/SD01 | Yes         | Yes when combined with surgery | Very good -90% with surgery | Yes, usually those who present late          | Counselled to seek medical help early  |
| 2   | OB/UTH/SD02 | Yes         | Yes if correct regime is used  | 85%                         | Yes, usually due to complications of disease | Review pt's file to ascertain cause of death & plan effective treatment next time. |
| 3   | OB/UTH/SD03 | Yes         | Yes                            | 90%                         | Yes, usually die of complications            | Do sensitivity patterns of swabs from pus from PA                                  |

#### 4.2.4.2 Laparotomy Management

Laparotomy treatment was indicated by the 3 senior doctors as the main stay treatment for pelvic abscess at UTH. There was a variation in the period between diagnosis and operation as indicated below:-

1. Have you prescribed laparotomy as a treatment for pelvic abscess?
2. What reason can you give for prescribing laparotomy than an antibiotic regime?
3. What period elapsed between your prescription time and the operation?
4. Have you participated in a pelvic abscess laparotomy?

Table 4.21: Interview Responses on Laparotomy Management – Senior Doctors

| S/N | CODE        | Response Q1                        | Response Q2                              | Response Q3                            | Response Q4 |
|-----|-------------|------------------------------------|--|--|-------------|
| 1   | OB/UTH/SD01 | Yes, it is the main stay treatment | It is the treatment protocol at UTH      | It varies between hours and 2 - 3 days | Yes         |
| 2   | OB/UTH/SD02 | Yes                                | For confirmed PA, protocol is laparotomy | 5 hours to 4 days sometimes            | Yes         |
| 3   | OB/UTH/SD03 | Yes                                | Large PA in sick patients                | Sometimes hours, sometimes days        | Yes         |

#### 4.2.4.3 Complications

It is noted that generally complications do occur for varied reasons. The senior doctors indicated the actions taken to resolve these complications such as IV-antibiotics and prompt laparotomy. A point of concern arises on the cause of delay for laparotomy as a lack of operating theatre. This is a concern considering that speed is key in the treatment of pelvic abscess.

1. Was the operation free of complications?
2. If yes, what measures were put in place to avoid complications?
3. If yes, what complications were experienced?
4. Why was there a delay in conducting a laparotomy?

Table 4.22: Interview Responses on Complications – Senior Doctors

|   | CODE        | Response Q1  | Response Q2                       | Response Q3                               | Response Q4  |
|---|-------------|--|-----------------------------------|---|--|
| 1 | OB/UTH/SD01 | Some were free, others not                         | Treat with antibiotics first      | Anaesthesia, bowel injury, bladder injury | No blood for transfusion, no OT space, bleeding        |
| 2 | OB/UTH/SD02 | Some were free, others not                         | IV-antibiotics, prompt laparotomy | Bowel injury                              | No space in OT for surgery to take place               |
| 3 | OB/UTH/SD03 | No –bleeding, injury to bladder, hysterectomy done | IV-antibiotics first to be given  | Injury to bladder & hysterectomy          | Reason for delay – operation space in OT not available |

## 4.2.5 Junior Doctors Questionnaire Responses

### 4.2.5.1 Antibiotics Management

Like the senior doctors, the 5 junior doctors affirmed the success of the use of antibiotics as a treatment for pelvic abscess. It was given an above 80% success rating. Only 2 junior doctors have observed a patient dying from pelvic abscess with 1 not knowing what future course of action should be taken to prevent deaths as indicated below:-

1. Have you administered antibiotics as a regime for pelvic abscess treatment?
2. Has antibiotic treatment been effective in pelvic abscess treatment?
3. Can you estimate a percentage of success of this drug regime?
4. Have you observed pelvic abscess patients dying due to non-response to antibiotics?
5. If yes, can you recall what course of action was taken for future treatment?

Table 4.23: Interview Responses on Antibiotics Management – Junior

| S/N | CODE        | Response Q1          | Response 2                   | Response Q3 | Response 4                 | Response 5                |
|-----|-------------|----------------------|------------------------------|-------------|----------------------------|---------------------------|
| 1   | OB/UTH/JD01 | Yes                  | Yes                          | 90%         | No – not due to resistance | Nil                       |
| 2   | OB/UTH/JD02 | Yes                  | Yes                          | 90%         | No                         | Nil                       |
| 3   | OB/UTH/JD03 | Yes                  | Yes after consulting seniors | 80%         | No                         | Nil                       |
| 4   | OB/UTH/JD04 | Yes                  | Yes                          | 80%         | Yes                        | Nil                       |
| 5   | OB/UTH/JD05 | No, but with surgery | Yes                          | 80%         | Yes                        | Sensitivity patterns done |

### 4.2.5.2 Laparotomy Management

Only 3 of the junior doctors have participated in a laparotomy mainly conducted by senior doctors. They had all however prescribed laparotomy for pelvic abscess treatment it being a standard protocol at UTH. This was in consultation with senior doctors. Again there was a variation in period between diagnosis and laparotomy occasioned by different factors.

1. Have you prescribed laparotomy as a treatment for pelvic abscess?
2. What reason can you give for prescribing laparotomy than an antibiotic regime?
3. What period elapsed between your prescription time and the operation?
4. Have you participated in a pelvic abscess laparotomy?

Table 4.24: Interview Responses on Laparotomy Management – Junior

|   | CODE        | Response Q1          | Response Q2  | Response Q3                             | Response Q4 |
|---|-------------|----------------------|--|---|-------------|
| 1 | OB/UTH/JD01 | Yes                  | Very sick patients with overwhelming infection               | 2 days                                  | No          |
| 2 | OB/UTH/JD02 | Yes                  | Septic patients with pelvic abscess                          | 3 days                                  | Yes         |
| 3 | OB/UTH/JD03 | Yes – by seniors     | Large pelvic abscess   | 1 hour – 4 days                         | No          |
| 4 | OB/UTH/JD04 | Seniors to prescribe | Sick patients with pelvic abscess                            | Hours to 5 days sometimes               | Yes         |
| 5 | OB/UTH/JD05 | Yes                  | Sick patients with large pelvic abscess & pelvic peritonitis | Sometimes just minutes, others days (3) | Yes         |

#### 4.2.5.3 Complications

There was acknowledgement of complications during laparotomy. Measures taken to resolve these complications included IV-antibiotics and early surgery. However, early surgery proved difficulty due to a lack of operating theatre as indicated below:-

1. Was the operation free of complications?
2. If yes, what measures were put in place to avoid complications?
3. If yes, what complications were experienced?
4. Why was there a delay in conducting a laparotomy?

Table 4.25: Interview Responses on Complications – Junior Doctors

| S/N | CODE        | Response Q1       | Response Q2  | Response Q3                  | Response Q4  |
|-----|-------------|-------------------|--|------------------------------|--|
| 1   | OB/UTH/JD01 | -                 | -  | -                            | -  |
| 2   | OB/UTH/JD02 | No                | IV-antibiotics, early OT but difficult to find OT space    | Injury to bowel, bleeding    | No theatre space, OT was busy with other emergencies |
| 3   | OB/UTH/JD03 | No                | IV-antibiotics, early surgery                              | Bowel injury, bladder injury | No theatre space at diagnosis                        |
| 4   | OB/UTH/JD04 | Some yes, some no | IV-antibiotics, IV-fluids, blood for patients going for OT | Blood loss                   | -  |
| 5   | OB/UTH/JD05 | No                | IV-antibiotics & IV-fluids                                 | Bleeding, anaesthesia        | -  |

### 4.3. POST-TREATMENT OF PELVIC ABSCESS

#### QUANTITATIVE ANALYSIS

##### 4.3.1 Awareness, Knowledge & Practice in Post-Treatment of Pelvic Abscess with Antibiotics

In all the 113 cases under study, there was a period of 0-3 months of antibiotic treatment. This is a standard period of antibiotic treatment for a patient to make a full recovery from pelvic abscess. No deaths were recorded due to unresponsive antibiotic treatment in the sampled patients.

##### 4.3.2 Awareness, Knowledge & Practice in Post-Treatment of Pelvic Abscess with Laparotomy

The major factor that is of concern after treatment of pelvic abscess with laparotomy is the development of post-operative complications. In the 77 patients under that underwent surgery, anaemia was noted as a major complication recording a 46.7% occurrence. Wound infections recorded 35.1% with re-admission into hospital due to severe complication recorded 27.3% as indicated below:-

Table 4.26: Post-Operative Complications

|   | Post-Operative Complications | Frequency |         |       | Percent |         |       |
|---|------------------------------|-----------|---------|-------|---------|---------|-------|
|   |                              | Valid     | Exclude | Total | Valid   | Exclude | Total |
| 1 | Anaemia                      | 36        | 41      | 77    | 46.7    | 53.3    | 100   |
| 2 | Need for Re-lap              | 9         | 68      | 77    | 11.7    | 88.3    | 100   |
| 3 | Wound Infection              | 27        | 50      | 77    | 35.1    | 64.9    | 100   |
| 4 | Re-admission                 | 21        | 56      | 77    | 27.3    | 72.7    | 100   |
| 5 | Others                       | 11        | 66      | 77    | 14.3    | 85.7    | 100   |

#### QUALITATIVE ANALYSIS

##### 4.3.3 Senior Doctors Interview Responses

Apart from post-laparotomy complications, enquiry was made from the doctors on any follow-ups that are made from discharged patients.

##### 4.3.3.1 Complications Post-Laparotomy

The 3 senior doctors were unanimous on the point of complications arising after pelvic abscess treatment with laparotomy. Bleeding leading to anaemia was cited as a

major complication. There was also acknowledgement that patients did die even after laparotomy intervention. The main cause of death was indicated as anaemia.

1. If you had participated in a laparotomy, after the operation, did any complications arise?
2. If yes, describe the complications that arose?
3. Did the patient make a full recovery after the operation?
4. Did the patient subsequently die?
5. What was indicated as the cause of death?

Table 4.27: Interview Responses on Complication Post-Laparotomy – Senior Doctors

| S/N | CODE        | Response Q1 | Response 2  | Response Q3       | Response 4                    | Response 5                                     |
|-----|-------------|-------------|---|-------------------|-------------------------------|--|
| 1   | OB/UTH/SD01 | Yes         | Bleeding, wound infection bladder injury – repaired | Some yes, some no | Some yes                      | Pelvic abscess with anaemia (blood loss)       |
| 2   | OB/UTH/SD02 | Yes         | Bleeding, injury to bladder/ureters anaesthesia     | Yes               | Some patients have died (yes) | Peritonitis, pelvic abscess, anaemia           |
| 3   | OB/UTH/SD03 | Yes         | Anaemia, inability to pass stool                    | Some yes, some no | Yes                           | Severe anaemia, peritonitis, anaesthetic drugs |

#### ***4.3.3.2 Follow-Up Post-Laparotomy***

There was not a single follow up of patients who had been treated for pelvic abscess with laparotomy. Those who had been given appointments to return for review never came back. The lack of follow-up calls for very serious concern. The doctors were not even aware of any deaths that might have occurred due to the laparotomy treatment administered.

#### **4.3.4 Junior Doctors Questionnaire Responses**

##### ***4.3.4.1 Complications Post-Laparotomy***

Junior doctors also acknowledged that complications did arise after laparotomy treatment. Peritonitis and intestinal obstruction were cited as a persistent complication.

1. If you had participated in a laparotomy, after the operation, did any complications arise?
2. If yes, describe the complications that arose?
3. Did the patient make a full recovery after the operation?
4. Did the patient subsequently die?
5. What was indicated as the cause of death?

Table 4.28: Interview Responses on Complications Post-Laparotomy – Junior Doctors

| S/N | CODE        | Response Q1                        | Response 2                                       | Response Q3                          | Response 4                     | Response 5                                |
|-----|-------------|------------------------------------|--|--------------------------------------|--------------------------------|---|
| 1   | OB/UTH/JD01 | Yes (while patient caring in ward) | Bleeding, intestinal obstructions                | Some made full recovery, others died | Yes                            | Septicaemia (infections) & severe anaemia |
| 2   | OB/UTH/JD02 | Yes                                | Peritonitis, intestinal obstructions             | Yes –some patients recovered         | A few died of sepsis / anaemia | Sepsis / anaemia                          |
| 3   | OB/UTH/JD03 | Yes                                | Intestinal obstruction, fistulae development     | Other yes                            | One died of sepsis             | Sepsis                                    |
| 4   | OB/UTH/JD04 | Yes                                | Peritonitis, with patient admitted for one month | Yes                                  | Some died                      | Severe anaemia, peritonitis, bowel injury |
| 5   | OB/UTH/JD05 | No                                 | -  | Yes                                  | No                             | -   |

#### ***4.3.4.2 Follow-Up Post-Laparotomy***

It is alarming to note that absolutely no follow-ups were made on post-treatment with laparotomy by the junior doctors. This calls for serious concern since amendments cannot be made to treatments prescribed when there is a lack of knowledge on how the prescribed treatment eventually turn out for the patients.

#### **4.3.5 Principal Investigator – Participation in a Pelvic Abscess Surgery**

The principle investigator being a surgeon in the department had made observations while participating in 5 laparotomy treatments. The observation results reflect the patients’ background information, the symptoms and signs of pelvic abscess in the operated on patients and the intra-op complications that arose during laparotomy.

##### ***4.3.5.1 Patient’s Background Information***

The age range of the patients was between 25 and 35 years with a varied residence of both urban and rural. Except for 2 patients, the admission duration before laparotomy was acceptable (2 days). For 1 patient, there was only the principle investigator as the attending surgeon as indicated below:-

Table 4.29: Patient's Background Information

|   | CODE         | Age Range | Residence        | Adm. Duration | No. Attending Surgeons |
|---|--------------|-----------|------------------|---------------|------------------------|
| 1 | 2013/LP-OP01 | 36-40     | Mumbwa (rural)   | 10 days       | 1                      |
| 2 | 2013/LP-OP02 | 25-35     | Lusaka (urban)   | 2 days        | 2                      |
| 3 | 2014/LP-OP03 | 16-25     | Chibombo (rural) | 2 days        | 2                      |
| 4 | 2014/LP-OP04 | 25-35     | Lusaka (urban)   | 2 days        | 2                      |
| 5 | 2014/LP-OP05 | 25-35     | Kafue (rural)    | 7 days        | 2                      |

#### 4.3.5.2 Symptoms and Signs

Varied symptoms and signs were noted in the patients by the principle investigator. These included abdominal pains, fever and PV-discharge which is characteristic of pelvic abscess presenting with a foul-smell. Only one patient had prolonged menses another common symptom of pelvic abscess. The table below presents the results as observed by the principle investigator:-

Table 4.30: Symptoms and Signs

| S/N | CODE         | ABDOMINAL PAIN              | FEVER               | PV-DISCHARGE                | PROLONGED MENSES | SIZE                 | TEXTURE   | COMPOUNDING VARIABLES PRESENT       | OTHERS                                      |
|-----|--------------|-----------------------------|---------------------|-----------------------------|------------------|----------------------|-----------|-------------------------------------|---|
| 1   | 2013/LP-OP01 | Present on & off            | Present             | Present                     | Nil              | Abdominal mass       | nil       |                                     | vomiting                                    |
| 2   | 2013/LP-OP02 | Long standing               | Present for 5 days  | Present                     | Nil              | Small abdominal mass | Thick pus |                                     | -   |
| 3   | 2014/LP-OP03 | Present for 10 days         | On & off            | Present                     | Nil              | Abdominal mass       |           | Possibility of criminal abortion    | Foreign body in vagina                      |
| 4   | 2014/LP-OP04 | Present for 5 days & severe | Present for 10 days | Present – foul smelling     | Nil              | Nil                  | Nil       | Patient treated for PID a month ago |   |
| 5   | 2014/LP-OP05 | Present for 2 weeks         | Present             | Foul smelling & deep yellow | Present          | Nil                  | Nil       | Nil                                 | operated for similar condition 4 months ago |



#### ***4.3.5.3 Findings in Intra-Operation***

The principle investigator had a task of observing the following features during laparotomy for 5 patients (a) antibiotic regime being used, (b) the surgical procedure undertaken, (c) drainage of pus from the abscess in the pelvic, (d) intra-operation complications, and (e) the prescribed recovery period. Cefotaxime and flagyl was the major regime used to support treatment with laparotomy. The standard exploratory laparotomy procedure was used for all the operations. A range of 1000mls to 2000mls of pus was drained from abscesses during the operations. Intra-operation complications included blood loss of  $\geq 1000$ mls leading to anaemia. Organ injury (uterus perforation and bowel injury) was recorded in 2 patients. Generally the prescribed period of recovery was between 5 to 10 days. The table below presents the findings of the observation made by the principle investigator during 5 observed laparotomies.

Table 4.31: Findings in Intra-Operation

| S/N | CODE         | ANTIBIOTIC REGIME         | SURGICAL PROCEDURE     | DRAINAGE OF ABSCESS               | INTRA-OP COMPLICATIONS  | PRESCRIBED RECOVERY PERIOD |
|-----|--------------|---------------------------|------------------------|-----------------------------------|---|----------------------------|
| 1   | 2013/LP-OP01 | Ciprofloxacin / flagyl    | Exploratory laparotomy | Done about 1000mls of pus drained | -difficulties achieving haemostasis (stopping bleeding)<br>-recovery from anaesthesia prolonged<br>-blood loss $\geq$ 1000mls | 5 days                     |
| 2   | 2013/LP-OP02 | X-pen, flagyl, gentamycin | Exploratory laparotomy | Done surgically                   | Blood loss $\geq$ 1000mls   | 5 days, but lasted 10 days |
| 3   | 2014/LP-OP03 | Cefotaxime / flagyl       | Exploratory laparotomy | Done about 2000mls of pus         | -removal uterus done due to perforated uterus<br>-bowel injury – repair done<br>-infection in the abdomen present             | 10 days                    |
| 4   | 2014/LP-OP04 | Cefotaxime / flagyl       | Exploratory laparotomy | About 1,500mls of pus drained     | Nil   | 5 days                     |
| 5   | 2014/LP-OP05 | Cefotaxime / flagyl       | Exploratory laparotomy | About 2000mls of pus drained      | A lot of difficulties.<br>Bowel injury due to a lot of adhesions  | 10 days                    |

## **CHAPTER FIVE**

### **DISCUSSION OF FINDINGS**

#### **5.1 DISCUSSION ON PRESENTATION OF PELVIC ABSCESS**

The results indicated that the majority of sampled patients were in the reproductive age range of 16-35 years. Their residence also showed an inclination towards high density suggesting a correlation between the two. There was indication in the findings that the standard admission duration of 1-5days was applicable to the majority of the sampled patients. Awareness and knowledge levels of medical practitioners on pelvic abscess in the department were recorded as being high at the presentation level. On the overall, the standard protocol on treatment was being practiced in the department.

##### **5.1.1 Description of Age, Location and Admission Variables**

In the reviewed literature, the stated age prone to pelvic abscesses was 40 years (Founda 2006). This age tag is applicable to the Western world where women live in conditions different from the experience here in Africa and particularly Zambia. The findings indicated that the average age was in the range of 26-35 years representing 36.3% and added to this is the 16-25 years representing 32.7% (figure 5.1). Thus between these two age ranges there is a combined 69%. Added to this is the alarming fact that 3 of the patients were children (below 16 years). Only 9.7% were above the 40 years stated in the reviewed literature. Reasons that can be attributed for this pattern of a lesser age range can include various compounding factors which shall be discussed later. It suffices to mention that this age range is the active reproductive period and therefore abortions and STIs may be a contributing factor to a high level of pelvic abscess incidents.

High density areas presented a high frequency of 66.4% of the sampled cases (figure 5.2) while medium density areas presented a frequency of 13.3%. The combined percentage for the two areas is 79.7%. It may be argued that this high frequency is occasioned by a high population concentration in these areas and therefore it is apparent that even statistics on any subject can produce high frequencies. However, another argument can be presented in reference to the life style of people in these

areas. When criminal abortion and STIs are taken as major compounding factors in pelvic abscess, it can be argued that over populated areas are prone to these factors. Chavuma (2003) has argued for high levels of STIs as a compounding factor in PID. Illiteracy levels are high and thus solutions to unwanted pregnancies result in criminal abortions. Equally, unprotected sex is practiced which fuel STIs.

The standard period of admission into hospital is ranged between 1-5 days for pelvic abscess treatment. There was a 38.9% presentation of this period in the sampled patients (figure 5.3). This was indication of an efficient treatment period. However there was an equally high frequency for those whose admission period was between 6-10 days representing 35.4%. Serious concern is raised for those whose admission period exceeded 26 days (10.6%). Laparotomy complications account for these longer periods.

### **5.1.2 Description of the AKAP Elements in Pelvic Abscess Presentation**

#### ***5.1.2.1 Awareness & Knowledge Levels***

Awareness levels for medical practitioners on presentation of pelvic abscess in the sampled patients were assessed through their recognition of PID with the accompanying symptoms and signs. Their recognition of risk factors in the sampled patients was also considered an awareness aspect. It can be noted from the results that there was a 93.8% immediate recognition of PID. The medical practitioners were equally able to isolate the various symptoms and signs of pelvic abscess in the sampled patients (Table 5.1). The knowledge of pelvic abscess was equally displayed in the medical practitioners' positive diagnosis of the ailment which represented 94.7%. They were equally able to identify 5 major symptoms of pelvic abscess (Table 5.3). Adnexal mass which represented 74.3% is a good example of symptom identification as Kasanda's (2012) study also indicates.

#### ***5.1.2.3 Attitude & Practice Levels***

As indicated earlier, attitudes are a subjective quality and difficult to measure. Therefore the promptness of admission of sampled patients for treatment can be attributed as a positive attitude on the part of medical practitioners. In all the 113

sampled patients, admission was immediate after diagnosis. A delay in admission would have indicated a lax in attitude.

The practice protocol at the University Teaching Hospital in the treatment of pelvic abscess is prescription of both antibiotic medication and surgery. There was a 72.6% prescription of both antibiotics and surgery in the 113 sampled patients. This indicates an overall bias towards surgery as the effective method of treatment of pelvic abscess. This supports the findings of Henry-Suchet (2002) who reported that laparoscopic drainage were successful in 90% under review with minimal procedure-related complications. The 8 doctors also indicated that they were able to prescribe IV-antibiotics and laparotomy and the course of treatment action for patients with pelvic abscess (Tables 5.5 and 5.6).

## **5.2. DISCUSSION ON MANAGEMENT OF PELVIC ABSCESS**

### **5.2.1 Knowledge & Practice in Antibiotic Treatment of Pelvic Abscess**

The findings indicate that there was a decline in the frequency of patients who were prescribed antibiotics and surgery. The findings indicate that there was 27.4% prescription of antibiotics and 72.6% antibiotics/surgery while the actual treatment quantities of 30.1% antibiotics and 69.90% antibiotics/surgery were recorded. This could have resulted in patients who objected to surgery and opted for antibiotic treatment only. Another factor could be those who died before surgery. There was a regular use of regime 2 (X-pen, Gentamycin, Metronidazole) representing 68.1% an indication that the majority of the sampled patients experienced a moderate infection of the ailment. This supports the notion that Landers (1983) puts forward that antibiotics are generally considered as the initial management of un-ruptured pelvic abscess. Therefore the results indicate a successful use of antibiotics by medical practitioners at UTH implying that there is adequate knowledge and practice in the dispensation of antibiotic treatment. Equally, results for the drug course indicated that 5 days or less had a higher representation of 61.9%. Only 3.5% had to take the drugs for more than 11 days. These are cases in which the infection had reached advanced stages and required more rigorous treatment.

### **5.2.2 Knowledge & Practice in Surgical Management of Pelvic Abscess**

In evaluating the knowledge and practice in the surgical management of pelvic abscess by medical practitioners, a review was made on the periods that elapse from one process to the next. As mentioned earlier, the speed of pelvic abscess treatment entails the success or failure of the treatment. Results indicated that a 1-3 day period of admission was common representing 70.8% (figure 5.6). This is a moderate period if the pelvic abscess is not presented with severe complications. Otherwise immediate surgery is the best standard and unfortunately represents only 0.9% in the sampled patients. Anything above 7 days (a week) is alarming with the results indicating 8% for this period in the sampled patients. Mortality rate may increase with such delays.

For periods after surgery, results indicate that a good number of the sampled patients were discharged immediately after surgery representing 37.2% (figure 5.7). However 23 % stayed in hospital for over 7 days indicating serious signs of post-treatment complications. For the combined duration of admission, a good number of the sampled patients spent between 1 to 5 days (figure 5.8) in hospital which is an acceptable standard. Those who stayed for 26 to 30 days, serious concern is raised for complications associated with long hospital stay.

Laparotomy duration indicated that there was a 71.7% representation within the acceptable 2 hour or less period. The 3 hour period representing 26.5% could indicate those laparotomy in which complications arose and needed to be resolved. A serious concern is raised for the 1.8% whose duration reached 4 hours. This must have been serious cases of complications and required the intervention of other experts to mend damaged internal organs.

The number of attending surgeons in 77 sampled patients who underwent surgery calls for concern. The standard protocol at the University Teaching Hospital is for 2 surgeons to be present at surgery. The results show that only 29 of the 77 patients were attended by 2 surgeons. The other 48 had 1 surgeon in attendance. This single practice has implications of failure to notice botched operations and corrective measures that should be put in place.

For the 77 sampled patients who underwent laparotomy all had a form of complication ranging from internal organ injury to blood loss of  $\geq 1000$ mls. What the medical files do not indicate are the interventions that were carried out to resolve the complications. This information is vital to record for future management of similar complications.

### **5.2.3 Period Assessment in Efficiency of Managing Pelvic Abscess**

The difference of the duration period discussed here from the one discussed above is that this take cognisance of the 2 periods existing between time of admission in hospital to time of surgery. The earlier discussed durations covered the entire period from admission to discharge from hospital after treatment. In the duration being considered here, there are 2 distinct periods between *admission* and *laparotomy*. The significance of this is the speed or efficiency of surgical treatment for the patients. The results indicate that in the first period (admission – diagnosis) there was immediate diagnosis in 51.3% (figure 5.11). This shows a good efficiency level in the process of pelvic abscess management. Serious concern is raised for the 20.4% whose diagnosis occurred above 3 days of admission. It is even more alarming for the 5.3% for whom it took more than 10 days for a diagnosis to be made. Such delays have serious implications for the patients and the success rate of pelvic abscess management by surgery. For the second period (diagnosis – laparotomy), a period above 2 days delay is serious enough as complications compound the operation. Only 31.0% (figure 5.12) were immediately operated on after diagnosis while 20.4% had to wait for a day. This delay is usually caused by a lack of space in the operating theatres. For those who had to wait for over 8 – 10 days, this calls for thorough investigation into the causes of this unacceptable and potentially fatal delay.

### **5.2.4 Discussion on Doctors' Experience in Antibiotics & Laparotomy Management**

The experiences of the sampled 8 doctors in antibiotic and laparotomy management of pelvic abscess revealed a similar pattern. As mentioned earlier, there was admittance in the exclusive use of antibiotic treatment with a success rate of above 85% (Tables 5.8 and 5.11). However all the 3 senior doctors and 2 junior doctors have observed patients die due to a non-responsiveness to antibiotics. This calls in question as to why surgery had not been prescribed for these patients than

exclusively depending on antibiotics. The senior doctors provided methods of preventing further mortality while the junior doctors lacked this initiative.

Laparotomy prescription for pelvic abscess treatment was indicated by the sampled doctors as a standard protocol at the University Teaching Hospital (Tables 5.9 and 5.12). The doctors also indicated that there is an average range of some hours to about 2 or 3 days between prescription and actual surgery. However there are unexpected delays that include lack of space in operating theatres and complications with patients themselves such as being anaemic. These delays, as mentioned before calls for serious concern and appropriate interventions. Except for 2 junior doctors, all the other doctors have participated in a laparotomy. This has given them adequate experience in laparotomy management.

#### **5.2.5 Discussion on Doctors' Experience in Laparotomy Complications**

The sampled doctors acknowledged that laparotomy complications were a common feature. These complications were varied ranging from anaesthesia to internal organ injury (Tables 5.10 and 5.13). Interventions to resolve the complications that arose ranged from administration of IV-antibiotics to prompt laparotomy. A serious concern should be raised as mentioned earlier on the delay experienced for laparotomy caused by a lack of space in operating theatres. This was raised by the doctors as a major cause for delays in laparotomy.

#### **5.2.6 Discussion on Principal Investigator's Laparotomy Observation**

The principal investigator's observation results of 5 laparotomy operations indicated similar trends as those presented in the 113 sampled patients and the 8 sampled doctors. The age range for the patients was between 25 and 35 years (Table 5.17). And as mentioned earlier, this is the prime reproductive period of a woman. There was also an acceptable duration period of admission before laparotomy of 2 days with 2 exceptions. Concern is raised for 1 patient (2013/LP-OP01) whose admission duration was 10 days. On the number of attending surgeons, it was only in 1 case that the principle investigator was alone. This was the same patient (2013/LP-OP01) whose admission duration was 10 days. The delay was caused by her anaemic condition. When the situation became critical and emergency laparotomy had to be done, the principle investigator was the only surgeon available.



The symptoms and signs were also the same as those highlighted in the sampled patients' files and affirmed by the 8 sampled doctors. The notable aspect on this was the possibility of criminal abortion with a foreign body lodged in the vagina of one of the patients (Table 5.18). Notable features in intra-operation findings were the quantities of pus drained from the abscesses ranging from 1000mls to 2000mls. This indicated that the abscesses were of considerable sizes. Another notable feature was the complication of blood loss of  $\geq 1000$ mls. This is a serious complication that induces anaemic conditions in patients. Except for 2 patients whose recovery period lasted 5 days, the others had a 10 days recovery period. This was quite above the recommended period.

### **5.3. DISCUSSION ON POST-TREATMENT OF PELVIC ABSCESS**

Results in the post-treatment of pelvic abscess indicate a general level of awareness and knowledge. The experiences of the 8 doctors indicate that standard protocol is put in place after management of pelvic abscess which include hospital stay and continued drug use. An area that is alarming is the lack of prolonged follow up on patients who have been discharged from hospital.

#### **5.3.1 Awareness, Knowledge & Practice in Post-Treatment of Pelvic Abscess with Antibiotics**

In all the 113 cases under study, there was a period of 0-3 months of antibiotic treatment. This is a standard period of antibiotic treatment for a patient to make a full recovery from pelvic abscess. No deaths were recorded due to unresponsive antibiotic treatment in the sampled patients. These results indicate a good awareness, knowledge and practice levels on the part of medical practitioners.

#### **5.3.2 Awareness, Knowledge & Practice in Post-Treatment of Pelvic Abscess with Laparotomy**

The major factor that is of concern after treatment of pelvic abscess with laparotomy is the development of post-operative complications. In the 113 patients under study, anaemia was noted as a major complication recording a 31.9% occurrence (Table 5.14). Wound infections recorded 23.9% with re-admission into hospital due to severe complications recorded 18.6%. These recordings in the files indicated that

medical practitioners had appropriate awareness, knowledge and practice levels in the periods of post-laparotomy.

### **5.3.3 Discussion on Doctors' Experience in Post-Laparotomy Complications**

The 3 senior doctors were unanimous on the point of complications arising after pelvic abscess treatment with laparotomy. Bleeding leading to anaemia was cited as a major complication (Table 5.15). There was also acknowledgement that patients did die even after laparotomy intervention. The main cause of death was indicated as anaemia. Junior doctors also acknowledged that complications did arise after laparotomy treatment (Table 5:16). Peritonitis and intestinal obstruction were cited as a persistent complication.

### **5.3.4 Discussion on Doctors' Experience in Post-Laparotomy Follow-Ups**

There was not a single follow up of patients who had been treated for pelvic abscess with laparotomy. Those who have been given appointments to return for review never came back. The lack of follow-up calls for serious concern. The doctors were not even aware of any deaths that might have occurred due to laparotomy treatment administered. This calls for serious concern since amendments cannot be made to treatments prescribed when there is a lack of knowledge on how these prescribed treatment eventually result in.

## **CHAPTER SIX**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **6.0 INTRODUCTION**

This final chapter presents conclusions and gives recommendations on the presentation, management, and post-treatment of pelvic abscess in 113 medical files of patients from January 2009 to March 2015 at the obstetrics and gynaecological department at the university Teaching Hospital, Lusaka, Zambia. It also presents conclusions and recommendations on the information presented by the 8 doctors in the department. Conclusions and recommendations are also made on laparotomy practices as observed by the principle investigator.

#### **6.1 CONCLUSIONS AND RECOMMENDATIONS ON PRESENTATION OF PELVIC ABSCESS**

##### **6.1.1 Variable Factors in the Presentation of Pelvic Abscess**

On the age of the sampled patients under study, it was noted that, except for 9.7%, all were under the age of 40 years, a range that is prime in the reproduction of offspring. Concern is thus raised as to the effect this continues to have on the reproductive health of young women. It is therefore recommended that measures are put in place to educate young women on factors that cause pelvic abscess such as criminal abortions and STIs which are left untreated for prolonged periods. This can be done through public health campaigns targeting schoolgirls, college and university students and in places with a high concentration of women like markets

Women residing in high density areas are prone to pelvic abscess due to compounding factors such as criminal abortion and STIs. Health education campaigns should be conducted in these areas by the public health department highlighting the dangers of criminal abortions and untreated STIs. This education should include information on signs and symptoms of pelvic abscess and the need to urgently seek medical attention.

Generally in a total of 74.3% patients sampled, there was an acceptable duration period of 1-10 days. Those whose admission duration exceeded 26 days (10.6%) calls for serious concern. The Obstetrics and Gynaecological department must put in

place a monitoring system to ensure there are adequate treatment facilities for pelvic abscess patients to reduce on the duration of admission into hospital.

### **6.1.2 The AKAP Elements in the Presentation of Pelvic Abscess**

The study has revealed that medical practitioners are generally good at being aware of the condition of pelvic abscess in patients presented before them. They equally have good knowledge on the symptoms and signs of pelvic abscess as it have been noted in their identification and appropriate diagnosis of the ailment. The recommendation on this can therefore be a continued enforcement on medical practitioners to identify and diagnose pelvic ailments in an efficient manner as this has a bearing in the later management of the ailment.

There is a positive attitude on the part of medical practitioners towards patients presenting with pelvic abscess as can be noted from the prompt admissions in the 113 sampled patients. This calls for continued encouragement to enforce this positive attitude. The practice in the course of treatment prescribed also indicates good knowledge on medical practitioners. They uphold the standard protocol established at the hospital. Therefore, there should be continued encouragement for this practice in the presentation level of pelvic abscess.

On the overall, in response to the research question *how adequately are pelvic abscesses presented at the University Teaching Hospital*, the research has revealed that there is adequate presentation of pelvic abscesses at the institution in the obstetrics and gynaecological department. In a few cases of lapses, measures should be put in place to ensure all cases are effectively and adequately presented and appropriate treatment course prescribed.

## **6.2. CONCLUSIONS AND RECOMMENDATIONS ON MANAGEMENT OF PELVIC ABSCESS**

### **6.2.1 Knowledge & Practice in Retrospective Management of Pelvic Abscess**

On the management of pelvic abscess exclusively with antibiotics, it can be concluded that medical practitioners have good knowledge and practice about it. Non-responsiveness to antibiotic treatment had a marginal frequency. The above 80% success rate of antibiotic treatment is indication that the antibiotic regimes in

use are efficient and effective in the treatment of pelvic abscess. It is therefore recommended that there be a continued usage of the same drug regimes and the same prescription practice on it.

On the overall, the admission duration periods were within acceptable limits. For those that fell outside these limits, it is recommended that measures be put in place in the department to enforce protocol periods of admission and treatment. The measures would be in form of guidelines that would compel all medical practitioners to follow and thus regulate the unnecessary delays for management of pelvic abscess.

On the aspect of attending surgeons, there was a serious breach of established protocol of at least 2 surgeons for an operation. Lone surgeons are a serious danger to the profession as botched operations will go unnoticed and criminal aspects unredeemed. It is recommended that the standard protocol be enforced to ensure all laparotomy operations have at least 2 attending surgeons.

### **6.2.2 Doctors' Management of Pelvic Abscess**

The experience of the 8 sampled doctors presented this research with a current overview of management practices in pelvic abscess cases. Their experience on antibiotic treatment showed a high frequency of success and therefore it can be recommended that this method of treatment should be continued. Their experience in laparotomy indicated a general satisfaction with the procedure. However, their major concern was the delays in surgical treatment caused by a lack of operating theatres. It is thus recommended that more facilities for operations be made available in the obstetrics and gynaecological department.

### **6.2.3 Complications in Management of Pelvic Abscess**

Complications were noted as a major factor in the management of pelvic abscesses. One factor that was associated with development of complication is the delay in operating on patients. It is therefore recommended that adequate space be created for operating theatres to prevent delays for the patients.

#### **6.3.4 Principal Investigator Laparotomy Observation**

The observations made by the principle investigator where similar to the 113 sampled patient records and the 8 sampled doctors. This similarity indicates that the management of pelvic abscess has been standardized. However the aspect of delayed operation has equally bee raised by the principle investigator. Again here the same recommendation presented above is given i.e. increase in facilities to accommodate an increased population.

On the overall, in response to the research question *how efficient and effective is the management of pelvic abscess at the University Teaching Hospital*, the research has revealed that there is a general efficiency and effectiveness in the management of pelvic abscesses at the institution in the obstetrics and gynaecological department. However, lapses are still present in critical areas such as delay in implementing the prescribed course of treatment. These gaps in efficient and effective treatment do contribute to the mortality rates in pelvic abscess cases.

### **6.3. CONCLUSIONS AND RECOMMENDATIONS ON POST-TREATMENT OF PELVIC ABSCESS**

#### **6.3.1 Awareness, Knowledge & Practice in Post-Treatment Period**

It can be generally concluded that, in spite of some serious lapses in post-treatment period of pelvic abscess, medical practitioners maintained as much as possible the established protocols at the University Teaching Hospital in the obstetrics and gynaecological department. It is recommended that workshops be held with experts in this field to enhance knowledge and practice on post-treatment period of pelvic abscess.

#### **6.3.2 Complications in Post-Treatment Period**

It has been noted that complications are a common feature in laparotomy for varied reasons. These complications continue into the post-treatment periods for some patients. If not resolved in the post-treatment period, they may lead to morbidity of patients. It is therefore recommended that specialized treatment should be done by specialists in the field.

### **6.3.3 Follow-Ups in Post-Treatment Period**

There was not a single follow up made on patients who had been treated for pelvic abscess with laparotomy. Those who had been given appointments to return for review never came back. The lack of follow-up calls for very serious concern. The doctors were not even aware of any deaths that might have occurred due to the laparotomy treatment administered. This calls for serious concern since amendments cannot be made to treatments prescribed when there is a lack of knowledge on how these prescribed treatment eventually result in. It is therefore recommended that a proper review protocol be created that will give feedback on the recovery of discharged patients.

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## APPENDIX 1

### INFORMATION SHEET

**Title:**

**Retrospective Study on Presentation, Management and Post-Treatment of Pelvic Abscesses: A Case Study of Patients at the University Teaching Hospital Lusaka, Zambia.**

**Principle Investigator: Dr. Chishimba Kalandanya**

**Sponsor: GRZ**

Dear Participant,

May I invite you to participate in this study being conducted by Dr. Chishimba Kalandanya as part of the requirement for the award of a Masters Degree in Medicine – Obstetrics and Gynaecology. I am a medical officer employed by the ministry of Health at the University Teaching Hospital.

**What is the Purpose of the study?** - The study mainly focuses on the presentation, management and post-treatment of pelvic abscesses at our institution – UTH. You have been chosen because you have met our inclusion criteria. The procedure of the study is mainly a retrospective study based on patient files at the obstetrics and gynaecology department at UTH. However in the interest of the present context, interviews and questionnaires of medical personnel in the department have been included. The interviews will be of a duration of around 30 minutes and will be held in the department of Obs. & Gyn. UHT. Refreshments in the period of the interview will be provided.

**Potential benefits of the study** - The findings of this study will help us formulate guidelines which will improve management of pelvic abscesses in this institution and the country at large.

**Are there any risks to the participants in this study?** There are no risk involved in the study for the participants.

**Are there any benefits to the participants in this study?** Participation is on a voluntary basis and will not carry any financial or material benefits for the participants.

**Right to Withdraw** – The participant is at liberty to withdraw at any time form the study.

**Confidentiality** - The information you provide will be strictly kept confidential and will solely be used for the purposes of the study.

If there are any clarifications or questions kindly contact any of the following:

**PRINCIPAL INVESTIGATOR:**

Dr. Chishimba Kalandanya  
c/o The University Teaching Hospital  
Department of Obstetrics and Gynaecology  
Private Bag 1X  
RW Lusaka.  
Mobile Number: 0977 440845  
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**RESEARCH SUPERVISOR:**

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c/o The University Teaching Hospital  
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Rhodes Park  
Lusaka.  
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Tel: +260 955 155633

---

**Dr Chishimba Kalandanya**

## RESEARCH CONSENT FORM

**RESEARCH TITLE:**

**Retrospective Study on Presentation, Management and Post-Treatment of Pelvic Abscesses: A Case Study of Patients at the University Teaching Hospital Lusaka, Zambia.**

**PRINCIPLE INVESTIGATION: DR. CHISHIMBA KALANDANYA**

**If you agree to participate in this study, kindly consent by signing this document:**

### **ATTESTED CONSENT**

I understand all that has been explained to me as above and it is clear to me what this study is all about. So I voluntarily consent to take part in the study. I agree to provide information for the study on my own without coercion.

Participant Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Witness Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**APPENDIX 2**

**RESEARCH INSTRUMENTS**

**Research Instrument 1**

**SENIOR/RESIDENT DOCTOR'S INTERVIEW ON PELVIC ABSCESS AT UTH**

Date: \_\_\_\_\_

**DOCTOR CODE:** \_\_\_\_\_

| <b>Doctor General Information</b> |  |
|-----------------------------------|--|
| 1                                 | What is your job title?                  |
| 2                                 | Your Responsibility in Obs. & Gyn. Dept. |
| 3                                 | Length of service in Dept:               |

**(a) PELVIC ABSCESS PRESENTATION**

4. Have you attended to patients who present with Pelvic Inflammatory Disease?

\_\_\_\_\_

5. Are you readily able to diagnose pelvic abscess from a patient with PID?

\_\_\_\_\_

6. What treatment do you prescribe for patients with pelvic abscess?

\_\_\_\_\_

\_\_\_\_\_

**(b) PELVIC ABSCESS MANAGEMENT**

6. Have you administered antibiotics as a regime for pelvic abscess treatment?

\_\_\_\_\_

7. Has antibiotic treatment been effective in pelvic abscess treatment?

\_\_\_\_\_

8. Can you estimate a percentage of success of this drug regime?

\_\_\_\_\_

9. Have you observed pelvic abscess patients dying due to non-response to antibiotics?

\_\_\_\_\_

10. If yes, can you recall what course of action was taken for future treatment?

11. Have you prescribed laparotomy as a treatment for pelvic abscess?

---

12. What reason can you give for prescribing laparotomy than an antibiotic regime?

---

13. What period elapsed between your prescription time and the operation?

---

14. Have you participated in a pelvic abscess laparotomy?

---

15. Was the operation free of complications?

---

16. If yes, what measures were put in place to avoid complications?

---

17. If not, what complications were experienced?

---

**(c) PELVIC ABSCESS POST-TREATMENT**

1. If you had participated in a laparotomy, after the operation, did any complications arise?

---

2. If yes, describe the complications that arose?

---

3. Did the patient make a full recovery after the operation?

---

4. Did the patient subsequently die?

---

5. What was indicated as the cause of death?

---

6. If the patient was discharged from hospital, have you followed up what recovery they have made to date?

---

7. Are you aware of any previously operated on patients who died in the course of time?

---

## Research Instrument 2

### JUNIOR DOCTOR'S QUESTIONNAIRE ON PELVIC ABSCESS AT UTH

Date: \_\_\_\_\_

DOCTOR CODE: \_\_\_\_\_

| Doctor General Information |  |
|----------------------------|--|
| 1                          | What is your job title?                  |
| 2                          | Your Responsibility in Obs. & Gyn. Dept. |
| 3                          | Length of service in Dept:               |

#### (a) PELVIC ABSCESS PRESENTATION

7. Have you attended to patients who present with Pelvic Inflammatory Disease?

\_\_\_\_\_

8. Are you readily able to diagnose pelvic abscess from a patient with PID?

\_\_\_\_\_

9. What treatment do you prescribe for patients with pelvic abscess?

\_\_\_\_\_

\_\_\_\_\_

#### (b) PELVIC ABSCESS MANAGEMENT

18. Have you administered antibiotics as a regime for pelvic abscess treatment?

\_\_\_\_\_

19. Has antibiotic treatment been effective in pelvic abscess treatment?

\_\_\_\_\_

20. Can you estimate a percentage of success of this drug regime?

\_\_\_\_\_

21. Have you observed pelvic abscess patients dying due to non-response to antibiotics?

\_\_\_\_\_

22. If yes, can you recall what course of action was taken for future treatment?

23. Have you prescribed laparotomy as a treatment for pelvic abscess?

\_\_\_\_\_

24. What reason can you give for prescribing laparotomy than an antibiotic regime?

\_\_\_\_\_



25. What period elapsed between your prescription time and the operation?

---

26. Have you participated in a pelvic abscess laparotomy?

---

27. Was the operation free of complications?

---

28. If yes, what measures were put in place to avoid complications?

---

29. If not, what complications were experienced?

---

**(c) PELVIC ABSCESS POST-TREATMENT**

8. If you had participated in a laparotomy, after the operation, did any complications arise?

---

9. If yes, describe the complications that arose?

---

10. Did the patient make a full recovery after the operation?

---

11. Did the patient subsequently die?

---

12. What was indicated as the cause of death?

---

13. If the patient was discharged from hospital, have you followed up what recovery they have made to date?

---

14. Are you aware of any previously operated on patients who died in the course of time?

---

### Research Instrument 3

## PRINCIPAL INVESTIGATOR'S PARTICIPATION IN A PELVIC ABSCESS SURGERY AT THE UNIVERSITY TEACHING HOSPITAL

Observation Date: \_\_\_\_\_

PATIENT CODE: \_\_\_\_\_

### PATIENT BACKGROUND DATA

| S/N | PARTICULARS        | INFORMATION  |
|-----|--------------------|--|
| 1   | Sex                |  |
| 2   | Age Range          | (i) $\leq 16$ (ii) 16 – 25    (iii) 25 – 35    (iv) 36 – 40    (v) $\geq 40$ years |
| 3   | Place of Residence |  |
| 4   | Admission Date     |  |
| 5   | Admission Time     |  |
| 6   | Admission Duration |  |
| 7   | Ward               |  |

### Presentation of Pelvic Abscess

|   | CONDITION        | DESCRIPTION | COMMENTS |
|---|------------------|-------------|----------|
| 1 | Abdominal pain   |             |          |
| 2 | Fever            |             |          |
| 3 | PV-discharge     |             |          |
| 4 | Prolonged menses |             |          |
| 5 | Size             |             |          |
| 6 | Texture          |             |          |
| 7 | Other            |             |          |

## Laparotomy Observation

|   | <b>OBSERVATION COMPONENT</b>                 |  |
|---|--|--|
| 1 | Number of attending surgeons                 |  |
| 2 | Extraneous (compounding) variables obtaining |  |
| 3 | Antibiotics regime                           |  |
| 4 | Surgical procedure                           |  |
| 5 | Drainage of abscess                          |  |
| 6 | Complications arising during surgery         |  |
| 7 | Prescribed recovery method                   |  |

## Research Instrument 4

### PELVIC ABSCESS PRESENTATION IN PATIENTS

PATIENT CODE:

#### PATIENT BACKGROUND DATA

| S/N | PARTICULARS        | INFORMATION  |
|-----|--------------------|--|
| 1   | Sex                |  |
| 2   | Age Range          | (i) $\leq 16$ (ii) 16 – 25    (iii) 25 – 35    (iv) 36 – 40    (v) $\geq 40$ years |
| 3   | Place of Residence |  |
| 4   | Admission Date     |  |
| 5   | Admission Time     |  |
| 6   | Admission Duration |  |
| 7   | Ward               |  |

#### PELVIC ABSCESS PRESENTATION DATA

|   |     | PARTICULARS                                | INFORMATION  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
|---|-----|--|--|--|-----|--|----|-------------------------------------|---|--|--|----------------------------------|--|--|--|--|--|--|--|--------------|--|--|--|--------------|--|--|--|---|--|--|
| <i>Awareness</i>                              | 1   | Recognition of PID                         |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
|   | 2   | Symptoms & Signs presenting in PID         | (i) lower abdominal pain    (ii) pain when having sex    (iii) pv-discharge  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
|   | 3   | Risk Factors<br><i>History of Any of:-</i> | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #d9e1f2;"> <th style="width: 70%;"></th> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%;"></th> <th style="width: 10%; text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>(i) Sexually transmitted infections</td> <td style="text-align: center;">S</td> <td></td> <td></td> </tr> <tr> <td>(ii) Pelvic inflammatory disease</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(iii) Past history of abdominal/pelvic</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(iv) Surgery</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(v) Abortion</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(vi) Intrauterine contraceptive device (IUCD)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> |  | YES |  | NO | (i) Sexually transmitted infections | S |  |  | (ii) Pelvic inflammatory disease |  |  |  | (iii) Past history of abdominal/pelvic |  |  |  | (iv) Surgery |  |  |  | (v) Abortion |  |  |  | (vi) Intrauterine contraceptive device (IUCD) |  |  |
|   | YES |  | NO   |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| (i) Sexually transmitted infections           | S   |  |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| (ii) Pelvic inflammatory disease              |     |  |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| (iii) Past history of abdominal/pelvic        |     |  |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| (iv) Surgery                                  |     |  |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| (v) Abortion                                  |     |  |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| (vi) Intrauterine contraceptive device (IUCD) |     |  |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| <i>Knowledge</i>                              | 4   | Positive Pelvic Abscess diagnosis          | Yes: _____ No: _____   |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
|   | 5   | Date of diagnosis                          | Date: _____ Time: _____  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
|   | 6   | Pelvic Abscess Symptoms                    | (i) Abdominal pain    (ii) Fever    (iii) Pv-discharge    (iv) Prolonged menses    (v) Adnexal mass  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| <i>Attitude</i>                               | 7   | Was admission immediate?                   |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
|   | 8   | If delayed, any reasons indicated          |  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |
| <i>Practice</i>                               | 9   | Prescribed treatment                       | (i) Antibiotic<br>(ii) Surgical  |  |     |  |    |                                     |   |  |  |                                  |  |  |  |  |  |  |  |              |  |  |  |              |  |  |  |   |  |  |

**Research Instrument 5**  
**PELVIC ABSCESS MANAGEMENT IN PATIENTS**

PATIENT CODE:

**PELVIC ABSCESS MANAGEMENT DATA**

|   | PARTICULARS                       | INFORMATION   |   |  |                                 |  |                         |  |                        |
|---|-----------------------------------|---|---|--|---------------------------------|--|-------------------------|--|------------------------|
|   | Treatment Type                    | (i) Antibiotic<br>(ii) Surgical   |   |  |                                 |  |                         |  |                        |
| <i>Knowledge Practice</i>                 | <b>ANTIBIOTIC MANAGEMENT</b>      |   |   |  |                                 |  |                         |  |                        |
|   | 1 Antibiotics Prescribed          |   |   |  |                                 |  |                         |  |                        |
|   | 2 Drugs course period             |   |   |  |                                 |  |                         |  |                        |
|   | 3 Completed course                |   |   |  |                                 |  |                         |  |                        |
|   | 4 Discontinued & reasons          |   |   |  |                                 |  |                         |  |                        |
| <i>Knowledge Practice</i>                 | <b>SURGICAL MANAGEMENT</b>        |   |   |  |                                 |  |                         |  |                        |
|   | 1 Admission period before surgery | (i) 1- 3 days    (ii) 4 – 6 days    (iii) 7 – 10 days    (vi) $\geq$ 10 days  |   |  |                                 |  |                         |  |                        |
|   | 2 Admission period after surgery  | (i) 1- 3 days    (ii) 4 – 6 days    (iii) 7 – 10 days    (vi) $\geq$ 10 days  |   |  |                                 |  |                         |  |                        |
|   | 3 Total admission days            | (i) 1- 3 days    (ii) 4 – 6 days    (iii) 7 – 10 days    (vi) $\geq$ 10 days  |   |  |                                 |  |                         |  |                        |
|   | 4 Laparotomy Date                 |   |   |  |                                 |  |                         |  |                        |
|   | 5 Laparotomy Duration             | Start Time:                      End Time:                      Period:   |   |  |                                 |  |                         |  |                        |
|   | 6 No. of Attending Surgeons       |   |   |  |                                 |  |                         |  |                        |
|   | 7 Intra-Operation Complications   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top;">(i) Bowel injury or other internal organs</td> <td style="width: 70%;"></td> </tr> <tr> <td style="vertical-align: top;">(ii) Blood loss <math>\geq</math> 1000 mls</td> <td></td> </tr> <tr> <td style="vertical-align: top;">(iii) Others – specify:</td> <td></td> </tr> <tr> <td style="vertical-align: top;">(iv) Intraop diagnosis</td> <td></td> </tr> </table> | (i) Bowel injury or other internal organs |  | (ii) Blood loss $\geq$ 1000 mls |  | (iii) Others – specify: |  | (iv) Intraop diagnosis |
| (i) Bowel injury or other internal organs |                                   |   |   |  |                                 |  |                         |  |                        |
| (ii) Blood loss $\geq$ 1000 mls           |                                   |   |   |  |                                 |  |                         |  |                        |
| (iii) Others – specify:                   |                                   |   |   |  |                                 |  |                         |  |                        |
| (iv) Intraop diagnosis                    |                                   |   |   |  |                                 |  |                         |  |                        |

## Research Instrument 6

### PELVIC ABSCESS POST-TREATMENT IN PATIENTS

|               |
|---------------|
| PATIENT CODE: |
|---------------|

#### PELVIC ABSCESS POST-TREATMENT DATA

|   |         | PARTICULARS                    | INFORMATION           |
|---|---------|--------------------------------|-----------------------|
| <i>Awareness<br/>Knowledge<br/>Attitude</i> |         | ANTIBIOTIC TREATMENT           |                       |
|   | A       | 0 – 3 Months                   |                       |
|   | B       | 4 – 12 Months                  |                       |
|   | C       | Unresponsive                   |                       |
|   | D       | Death                          |                       |
| <i>Awareness<br/>Knowledge<br/>Attitude</i> |         | SURGICAL TREATMENT             |                       |
|   | A       | Surgical Outcome               |                       |
|   |         | 1 Post-operative complications | (i) Anaemia           |
|   |         |                                | (ii) Need for Re-lap  |
|   |         |                                | (iii) Wound infection |
|   |         |                                | (iv) Admission        |
|   |         |                                | (v) Others – specify  |
|   | 2 Death |                                |                       |
|   | B       | 0 – 3 Months                   |                       |
|   | C       | 4 – 12 Months                  |                       |
|   | D       | < 12 Months                    |                       |