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Incidence of Wound Sepsis and related Factors in Post-Operative Patients in Kampala International University Teaching Hospital Ishaka Bushenyi-Western Uganda

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ABSTRACT

Post-operative wound sepsis is among the commonest complications of surgery, especially in developing countries. This complication often increases the burden on patients; increases hospitalization duration, painful wound dressings and other procedures like debridement and secondary closure, drugs burden, and the associated increased hospital bills. To obtain the prevalence, and factors associated with wound sepsis among post-operative patients in KIUTH. A cross-sectional study design that is both descriptive and analytical was used. The study was carried out between August and December 2017 in Kampala international university teaching hospital, where participants were chosen according to our inclusion and exclusion criteria. The prevalence of post-operative wound sepsis in KIUTH was found at 25.3%, with a higher prevalence in Emergency compared to Elective surgeries (cOR 2.552, P=0.016, 95% CI, 1.194-5.456). Post-operative wound sepsis was found to be significantly associated with ineffective use of antimicrobial prophylaxis pre-operatively (aOR 0.176, P=0.010 95% CI 0.120-0.751). There was also noted a high association between post-operative wound sepsis and long Midline incisions, (cOR 2.308, P=0.116 95% CI 0.812-6.555), although this factor wasn't statistically significant. The condition was however not found to be associated with Age and Patients underlying illness in this study, as it had been reported in many previous studies. The study found a high prevalence Wound sepsis among post-operative patients, which was dependent ineffective use of Antimicrobial prophylaxis pre-operatively, and the use long midline incisions during surgery.

Keywords: Post-Operative, Wounds, Complications, Patients, Hospital**.**

INTRODUCTION

Post-operative wound sepsis, also referred to as surgical site infection (SSI) is an infection that develops within 30 days after an operation or within one year if an implant was placed, and the infection appears to be related to the surgery [1-3]. Wound sepsis, (locally, wound infection) may be defined as invasion of organisms through tissues following a breakdown of local and systemic host defenses. Major wound infection is seen when a wound discharges pus and may need a secondary procedure to be sure of adequate drainage; there may be systemic signs or delay in return home. In minor wound infection there is discharge of pus or serous fluid without associated excessive discomfort or systemic signs. Wound infection is the commonest and most troublesome disorder of wound healing [4-7]. This study aims at assessing the risk factors that are associated with surgical site infections and to identify the rate of surgical wound infections developed by post-operative patients in KIUTH. Post-operative wound infection has been a problem since surgery was started as a treatment modality. Advancement in medicine has resulted in the prevention and control of this infection. The introduction of antiseptics is considered to be an important milestone on route to safe surgery. The discovery of the antimicrobial agents also enables surgeons to perform surgery in many conditions that were previously thought to be impossible in the pre-antibiotic era due

to the risk of infection [8, 9]. Infection in a wound is a manifestation of disturbed host-bacteria equilibrium that is in favor of bacteria [10]. This not only elicits a systemic septic response but also inhibits the multiple processes that are involved in the wound healing i.e. each of these processes is affected when bacteria proliferate in a wound. The absolute prevention of surgical wound infection seems to be an impossible goal. It is the second commonest nosocomial infection and causes patient discomfort, prolonged hospital stay, more days off work and increased cost of therapy and the cost of an operation [7, 8, 11, 12]. Postoperative wound infection is predominantly caused not by bacteria, but by surgeons. Moreover, in Africa, as elsewhere, most of the bacteria implicated are endogenous in origin. Poor surgical technique and inappropriate materials - thick silk and catgut sutures in the main –are the principal reasons for the high postoperative infection rate [13, 14]. Subsidiary reasons are of several kinds: severe wound contamination caused by the lack of theatre discipline (in spite of the rituals); the enthusiastic misuse of disinfectants; inadequate or non-existent lavage; a predilection for drains; unshakable trust in dressings; the reluctance to leave soiled wounds open; and the universal hope that, ultimately, antibiotics will eliminate and cure infections [2, 13, 15]. SSIs is among the major causes of morbidity and death among the operated patients and continue to represent about a fifth of all healthcare associated infections [5, 16, 17]. Although at least 5% of patients. Develop a SSI after surgery, these infections seem to cause remarkably little concern, remaining largely unreported in the media. Despite improvements in operating room practices, instrument sterilization methods, better surgical technique, and the best efforts of infection prevention strategies, surgical site infections remain a major cause of hospital-acquired infections and rates are increasing globally even in hospitals with most modern facilities and standard protocols of preoperative preparation and antibiotic prophylaxis. Moreover, in developing countries where resources are limited, even basic life-saving operations, such as appendectomies and cesarean sections, are associated with high infection rates and mortality [3, 12, 18]. In the developed countries, SSI has been reported to affect from 5% to 15% of hospitalized patients in regular wards and as many as 50% or more of patients in intensive care units (ICUs), while in developing countries the magnitude of the problem remains largely underestimated [19-21]. In Uganda, data about SSI is still scarce and the true incidence and cost per patient are unknown. In MRRH, research done to determine the incidence of SSI among elective surgeries on the surgical ward in 2007 found the postoperative incidence density to be 15.9% and no risk factors were associated with SSIs [3]. The risk of SSIs continues after discharge; SSIs develop in almost 2 percent of patients after discharge from the hospital and these patients are two to five times as likely to be readmitted to the hospital. In KIUTH; a medical training hospital that serves a big number of local population in Bushenyi District, western Uganda, many postoperative wounds complicate to sepsis when the patients are still on ward, while many others return to GOPD shortly after discharge due to the same problem.

Though a number of factors have been pointed out to be the cause of this debilitation, no single factor has been pointed out to be the outstanding cause, and the attempts to eradicate the problem are unsatisfactory (KIUTH GOPD Records). Therefore, the aim of this research is to study the prevalence and factors responsible for Post-operative wound sepsis in KIUTH.

Statement of Problem

There's little knowledge on the magnitude, consequences and the related risk factors of SSI in countries with fewer resources [22]. In 2012, major emergency operations contributed more than 43% of the total surgical operations in MRRH (theater records, 2012). Most of these patients are at risk of getting SSIs postoperatively because of the nature of their disease pre operatively, surgical aseptic technique,

and underlying comorbidities among others [3]. In KIUTH, a number post laparotomy and some of post caesarian section patients have developed a life threatening SSI, and the causes of this debilitation are attributed to be patient factors, iatrogenic errors, while others are environment related factors (KIUTH-Patient Records Surgical ward). The iatrogenic errors pointed out include; Poor surgical techniques (inappropriate wound closure), Poor postoperative wound management, and Inappropriate drug prescriptions.

Patient factors include; Poor adherence to postoperative treatment/drugs by the patient, Poor patient hygiene, underlying disease conditions such as Diabetes and Malignancies, and Patients' age (common in elderly patients). Environmental factors such as congestion in the hospital, poor hygiene (that may attract flies) are also contributory towards this problem [23]. The resulting SSIs have led to a number of complications such as; Incisional hernias, extra-peritoneal adhesions, abscess formation and generalized systemic infections due to bacteremia. In all major operations, aseptic techniques are obscured to reduce the risk of infections during surgery (KIU-TH Theatre records), however, no satisfactory study has been carried out to point out the leading factors associated with this problem, and therefore no appropriate attempts have been made to eradicate this life threatening complication. Therefore, this study will assess for the prevalence and factors associated with Post-operative wound sepsis in KIU-TH.

Aim of the Study

This study is typically academic for the attainment of Diploma in Clinical Medicine and Community health, unless if deemed necessary for other use(s) by any other agencies or authority.

Objectives of the Study

To determine the prevalence of wound sepsis and the associated factors among postoperative patients in KIUTH.

Specific objectives of the Study

I. To obtain the prevalence of surgical wound infections developed during hospital stay and after discharge.
II. To identify the risk factors associated with wound sepsis among postoperative patients in KIUTH.

Research Questions

- ✓ How may post-operative patients out of the total number that undergoes surgery in KIUTH get sepsis?
- ✓ Which factors contribute to the development of wound sepsis among post-operative patients in KIUTH?
- ✓ Which group of patients is most vulnerable to surgical wound sepsis among the patients that undergo surgery in KIUTH?

Justification of the Study

In all major and minor surgeries in KIUTH, aseptic techniques are obscured.

Surgeons always advise periodic wound dressing post operatively, using sterile gauze in order to prevent inoculation of microbes in the wound. However, the patient factors that contribute to Post-operative wound sepsis have not been addressed. Therefore, the purpose of this study was to address the patient factors that are associated with Post-operative wound sepsis.

METHODOLOGY

Area of Study

The study was carried out in Kampala International University- Teaching Hospital which is situated in Bushenyi District in the Western region of Uganda. The hospital has a bed capacity of 500 beds. It has outpatient, accidents and emergencies, in-patients, theatre, special clinics, psychiatry and intensive care unit departments. Data however will be collected from the surgical ward, obstetrics and gynecology ward, General outpatient records and accident and emergency department.

Study Design

A Cross-sectional study design that is both descriptive and analytical was used. The descriptive study was used to get the prevalence while analytical was used to assess for associated factors. The design

was appropriate for this study because of its affordability and its ability to be used to study a vast number of factors.

Sample Size Determination

The sample size was calculated using Fisher et al formula, which is:

$$N= Z^2pq/d^2,$$

Where;

N is the derived size of the population.

Z is the standard deviation at 95% of the degree of confidence which is 1.96

P is the proportion of the target group is estimated to be 15%

Q is1-p= 1-0.15= 0.85

D is the measure of anticipated error as a proportion of standard deviation about 0.05

Z =95% = 1.96, **p**= 15% (0.15), **q**=1-0.15=0.85, **d**=0.05.

$N= (1.96)^2 x\ 0.15\ x\ 0.85\ /\ (0.05)^2 = 196$

Therefore, N (sample size) = 196

Due to financial constraints and limited time, a sample size of 150 was used (because N was too large.)

Study Population

The study population was obtained according to selection criteria i.e. inclusion and exclusion criteria. A population of 150 respondents will be used.

Inclusion Criteria

All patients who get surgical wound sepsis in a period less than 30 days after surgery, in Surgical ward, Obstetrics and gynecology ward, Orthopedics ward and Pediatrics ward in KIUTH.

Exclusion Criteria

- Patients who have been admitted on wards for Post-operative wound sepsis but were not operated from KIUTH will not be considered in this study.
- Patients who have got wound sepsis secondary to skin/tissue grafting as a result of severe tissue injury such as major thermal burns.
- Also, patients who develop wound complications in a period beyond 30 days and have already been discharged in good condition.
- All the patients on these wards/department who have not undergone surgery.

Sampling Method

Consecutive enrollment of participants was used.

Study variables

These include the dependent variable and independent variables.

Dependent Variable

The dependent variable in this research study is post-operative wound sepsis.

Independent variables

These include, Patient factors; (Poor patient hygiene, Poor adherence to drugs, underlying medical conditions like diabetes, Socio-cultural practices).

- ✓ Environmental factors; (Overcrowding in hospitals. Unhygienic environment).
- ✓ Medical/surgical factors; (Poor Surgical techniques, Poor postoperative management, In-appropriate postoperative medication).

Data Collection

A structured questionnaire which is prepared in line with the objectives of the study and the conceptual frame work was employed to collect primary data from the respondents. Secondary data was obtained from the pre-existing medical records/files of the participants using a check list.

Pre-testing

In order to ensure quality control and detection of possible sources of error in the research, a half-day pre-testing data collection was carried out in the study area. This greatly helped in anticipation and creation of an avenue for possible precautions against the preventable errors.

Data Analysis

Data estimated in excel was exported to statistical package for social science [SPSS] for analysis, and presented inform of tables.

Quality control

It was obtained in consultation with experienced doctors and colleagues.

RESULTS

Socio-demographic characteristics of participants in the study population

A total of 150 participants were included in this study, and majority; 85(56.67%) were males compared to 65(43.33%) females. Their ages ranged from 8-71 years, with majority (29.33%) being Moslems. Participants were predominantly peasants; 34%, and majority (50%) were of a primary level of education. The biggest percentage (96.67%) had a normal body mass index for age, as summarized in the table below.

Table 1; socio-demographic characteristics of study population;

Variable	Frequency	Percentage (%)
Age (Years)		
1-10	2	1.33
10-20	26	17.33
20-50	94	62.67
Above 50.	28	18.67
Gender		
Female	65	43.33
Male	85	56.67
Occupation		
Student	20	13.33
Business	39	26.0
Doctor	0	0
Engineer	3	2.0
Peasant	51	34.0
Civil servant	13	8.67
Boda-boda	12	8.0
Housewife	7	4.67
Teacher	5	3.33
BMI		
Underweight	0	0
Normal weight	145	96.67
Overweight	5	3.33
Religion		
Catholic	41	27.33
Moslem	44	29.33
Protestant	26	17.33
Pentecostal	39	26.0
Education level		
Primary	75	50
Secondary	54	36
Post-secondary	19	12.67
Never went to School	2	1.33
Total	**150**	**100**

Bivariate analysis of the socio-demographic factors associated with wound sepsis among post-operative patients in KIUTH.

The prevalence of post-operative wound sepsis in KIU-TH was 25.3%. Unexpectedly, wound sepsis was 0.221 times higher among patients between 21-50 years of age, compared to those above 50 years, and this was statistically significant (P=0.001, 95% CI; 0.089-0.547). The condition was more prevalent among males compare to females (cOR 1.237), and more predominant among peasants (cOR 1.514), though this was not statistically significant; P=0.579 95% CI 0.0584-2.617 and P=0.888 95% CI 0.135-14.738 respectively. The prevalence was also unexpectedly high among patients with Normal BMI (cOR 4.714) compared to those with a high BMI (Overweight).

A summary of this is shown in the table below;

Table 2; Bivariate analysis of Socio-demographic factors associated with post-operative wound sepsis;

Statistically significant at 95% level of confidence

Variable		Number of participants, N (%)	Wound got healed N (%)	Got Wound sepsis N (%)	Crude OR (95% CI)	P-value
Age(years)						
	1-10	2(1.33)	2(100)	0(0.00.)	5.952E8(0.000-0.000)	0.999
	11-20	26(17.33)	19(73.08)	7(26.92)	0.368(0.118-1.152)	0.086
	21-50	94(62.67)	77(81.91)	17(18.09)	0.221(0.089-0.547)	0.001*
	>50	28(18.67)	14(50)	14(50)	1.000	
Sex						
	Male	85(56.57)	62(72.94)	23(27.06)	1.237(0.0584-2.617)	0.579
	Female	65(43.33)	50(76.92)	15(23.08)	1.000	
Occupation						
	Student	20(13.33)	15(75.0)	5(25.0)	1.333(0.131-16.781)	0.815
	Business	39(26.0)	34(87.18)	5(12.82)	0.588(0.054-6.381)	0.663
	Engineer	3(2.0)	2(66.67)	1(33.33)	2.000(0.078-51.593)	0.721
	Peasant	51(34.0)	37(72.55)	14(27.45)	1.514(0.135-14.738)	0.888
	Civil servant	13(8.67)	10(76.9)	3(23.08)	1.200(0.094-15.260)	0.587
	Bodaboda	12(8.0)	8(66.67)	4(33.33)	2.000(0.164-24.325)	0.99
	Housewife	7(4.67)	2(28.57)	5(71.43)	10.00(0.648-154.317)	0.099
	Teacher	5(3.33)	4(80)	1(20)	1.000	
Education level						
	Primary	75(50)	56(74.67)	19(25.33)	0.339(0.020-5.693)	0.453
	Secondary	54(36)	41(75.93)	13(24.07)	0.317(0.019-5.433)	0.428
	Post-secondary	19(12.67)	14(73.68)	5(26.32)	0.357(0.019-6.850)	0.495
	Uneducated	2(1.33)	1(50)	1(50)	1.000	
BMI						
	Underweight	0(0.0)	0(0.0)	0(0.0)	0.000(0.000-0.000)	0.000
	Normal weight	145(96.67)	110(75.86)	35(24.14)	4.714(0.757-29.364)	0.097
	Over weight	5(3.33)	2(40)	3(60)	1.000	

Patient factors associated with wound infection among post-operative patients

Out of the 150 participants, 7(4.67%) had an underlying illness, including Diabetes (0.67%), HIV (1.33%), Anemia (1.33%), and other illnesses (1.33%) while the biggest number (95.33%) had no underlying illnesses.

Majority of the patients 146(97.33%) had good adherence to drugs as per prescription, though a few 4(2.67%) defaulted the treatment. Similarly, the largest percentage of the participants; 147(98.0%) never used herbs, but a few; 3(2.0%) applied local herbs on their wounds, as shown in the table below;

Table 3; bivariate analysis of patient factors associated with post-operative wound sepsis.

Variable	Number of participants, N (%)	Wound got healed N (%)	Got Wound sepsis N (%)	Crude OR (95% CI)	P-value
Patient underlying illness					
Diabetes	1(0.67)	0(0)	1(100)	5.604E9(0.000-0.000)	1.000
HIV	2(1.33)	0(50)	2(50)	5.604E9(0.000-0.000)	0.999
Anemia	2(1.33)	0(0)	2(100)	5.604E9(0.000-0.000)	0.999
Any other illness	2(1.33)	1(50)	1(100)		0.384
No illness	143(95.33)	111(77.62)	32(22.38)	3.469(0.211-57.018)	
Drugs adherence;					
Good adherence	146(97.33)	111(76.03)	35(23.97)	0.105(0.011-1.043)	0.054
Poor adherence	4(2.67)	1(25)	3(75)		
Usage of local herbs					
Applied herbs	3(2.0)	3(100)	0(0.0)	1.486(0.131-16.781)	0.749
Never used herbs	147(98.0)	147(100)	0 (0.0)		

Medico-surgical factors associated with wound sepsis among post-operative patients

The participants were post-operative patients, who underwent different surgeries, including Caesarian section (26.67%), Explorative Laparotomy (21.33%), Prostatectomy (98.87%), Herniorrhaphy (10.67%), orthopedic surgeries (16.67%), Incision and drainage (6.67%), Appendicectomy (4.67%) and Hysterectomy (4.67%). Majority of these; 41(27.33%) were operated through midline incisions, and others through Pfannestil incisions; 49(32.67%), inguinal incisions; 17(11.33%), MC-Burney's incision; 7(4.67) and other specific incisions; 36(24%). 69(46%) operations were emergency cases, whereas 81(54%) were elective Surgeries. Patients who underwent Emergency operations were 2.552 times more likely to develop sepsis compared to those who underwent elective Surgeries, this was statistically significant (P=0.016. 95% CI; 1.194-5.456). In majority of the surgeries (84%), patients were given Prophylactic antibiotics prior to surgery, compared to 24% who were not given prophylactic antibiotics. Those patients (who were not given Prophylactic antibiotics) were 3.846 times more likely to develop wound sepsis compared to those who were given prophylaxis, this was statistically significant (P=0.04. 95% CI; 1.550-9.546) as summarized in the table below.

Table 4: Bivariate analysis of Medico-surgical factors associated with post-operative wound sepsis

Variable	Number of participants, N (%)	Wound got healed N (%)	Got Wound sepsis N (%)	Crude OR (95% CI)	P-value
Type of operation					
Laparotomy	32(21.33)	20(62.5)	12(37.5)	1.500(0.251-8.977)	0.657
C-Section	40(26.67)	33(82.5)	7(17.5)	0.530(0.085-3.311)	0.497
Prostatectomy	13(8.87)	8(61.54)	5(38.46)	1.563(0.215-8.977)	0.659
Herniorrhaphy	16(10.67)	13(81.25)	3(18.75)		0.602
Orthopedics	25(16.67)	19(76)	6(24)	0.577(0.73-4.550)	0.805
I&D	10(6.67)	9(90)	1(10)	0.789(0.121-5.170)	0.341
Appendicectomy	7(4.67)	5(71.43)	2(28.57)		1.000
Hysterectomy	7(4.67)	5(71.43)	2(28.57)	0.278(0.020-3.884)	
				1.000(0.98-10.166)	
Type of incision					
Midline	41(27.33)	26(63.41)	15(36.59)	2.308(0.812-6.555)	0.116
Pfannestil	49(32.67)	38(77.55)	11(22.45)	1.158(0.812-6.555)	0.788
MC-Burney	7(4.67)	5(71.43)	2(28.57)		0.616
Inguinal	17(11.33)	14(82.35)	3(17.65)	1.600(0.255-10.045)	0.840
Specific incisions	36(24)	29(80.56)	7(19.44)	0.857(0.192-3.830)	
Antimicrobial prophylaxis	24(16)	12(50)	12(50)	3.846(1.550-9.546)	0.04*
Not given	126(84)	100(79.37)	26(20.63)		
Given					
Operation plan					
Emergency	69(46)	45(65.22)	24(34.78)	2.552(1.194-5.456)	0.016*
Elective	81(54)	67(82.72)	14 (17.28)		

*statistically significant at 95% level of confidence

Multivariate analysis of factors associated with wound sepsis among post-operative patients in KIUTH

Multivariate logistic regression analysis was done on factors that were statistically significant ($p< 0.05$) at bivariate analysis. The statistically significant factors associated with post-operative wound sepsis were; Age of the patient, Operation plan and Antimicrobial prophylaxis.

Patients who underwent elective surgeries were 76.1% less likely to get wound sepsis compared to those who underwent emergency surgeries, this was statistically significant (p=0.004, 95% CI; 0.091-0.628). The patients who were given prophylactic antibiotics preoperatively were 82.4% less likely to get wound sepsis compared to those who were not given Prophylactic antibiotics, this was statistically significant (p=0.001, 95% CI; 0.061-0.506) when other factors are held constant. However, there is no statistically significant relationship between postoperative wound sepsis and age on

multivariate analytical regressions, as shown in table 4 below;

Table 5: Multivariate of risk factors affecting immunization status of children

Predictors	Adjusted OR	95% CI	P-value
Operation plan			
Emergency	0.239	0.091-0.628	0.004*
Elective	1.000		
Antimicrobial prophylaxis (AMP)			
AMP not given	0.176	0.061-0.506	0.001*
AMP given	1.000		
Age (Years)			
1-10	4.614E8	4.614E8-4.614E8	0.000
11-20	6.405	1.634-26.108	0.008
21-50	11.297	3.638-35.083	0.000
>50	1.000		

*Statistically significant factors at 95% level of confidence.

DISCUSSION

Postoperative SSI remains one of the most important causes of morbidity in surgically treated patients. These patients incur higher cost because of longer hospitalizations, more nursing care, additional wound care, potential readmission to the hospital, and further surgical procedures. In this study, basing on our inclusion criteria, a total of 150 operated patients were eligible for analysis (80 elective surgeries and 70 emergency surgeries) that underwent different kinds of major surgeries, including abdominal surgeries, orthopedic surgeries, C-section, and others as in most studies in Africa and other developing continents, the incidence of SSI in our study was high at 25.3%. This was however higher than 16.4% reported in Mbarara regional referral hospital by Lubega *et al.* [3], 15.5% by Osakwe *et al.* [22] in Nigeria, and 13% by Amoran, *et al.* [24]. The differences in the findings could be due to the differences in the Sample sizes used in the studies, methods used to generate data, and the time scope of the studies.

The prevalence was highest among post explorative laparotomy patients (37.5%), followed by post-caesarian section (17.5%) patients, compared to other operations. The prevalence was also 0.239 times high in Emergency surgeries (24%) compared to Elective surgeries, and this was statistically significant in both bivariate and multivariate analytical regressions (P=0.004, 95% CI, 0.091-0.628). This was in agreement with the findings by Rao and Chakravarthy [25] who reported similar relationship.

Factors associated with wound sepsis among post-operative patients in KIUTH

Findings reflect a significant association between Antimicrobial prophylaxis and post-operative wound sepsis. The odds of developing sepsis in patients who were not given antimicrobial prophylaxis preoperatively were 0.176 times high, compared to those who were given prophylaxis, and this was statistically significant in both bivariate and multivariate analytical regressions (P=0.001, 95% CI 0.061-0.506). This coincides with the findings by Manyahi [26], who also reported a significant relationship. Antimicrobial prophylaxis helps to combat against infections that may complicate surgery and also cover un-identified infections such as Stapylococcal skin infections (like in cases of inadquate scrubbing of patient's skin), Streptococcal nose infections (from the surgical team or patient, and other infections that can un-noticebly complicate surgery-incase prophylactic treatment is not given. Post-operative wound sepsis was also found to be associated with operation via long midline incisions (cOR 2.308) compared to other short incisions such as those used in

I&D and appendicectomy, though this factor was however not statistically significant (P=0.116 95% CI 0.812-6.555). Long midline incisions (often done in Explorative laparotomy) subject the patient to a risk of delayed tissue apposition/wound healing, and also increase the surface area for bacterial proliferation. About this factor however, no comparative studies were found. In our study, there was no significant relationship between post-operative wound sepsis and premorbid illness as it had been reported before. This finding contradicts with that by Osakwe *et al.* [22], who found out that this relationship was insignificant. This difference may be due to a comparatively small number of the sample size in our study. It had also been documented by [27, 28, 29], that Age above 50 years was associated by post-operative wound sepsis. However, this was not so in our study. The significant relationship shown on bivariate regression analysis was due to other factors that are mentioned above, as proved on multivariate regression analysis. The difference in these findings is probably due to the difference in the Study design used, the study area and the comparatively less time scope for this study.

Strength and Weaknesses

It was a little hard to conduct the data collection part of this study at the same time when I was supposed to be in Kilembe mines hospital for my community placement. The cost of the study was also elevated beyond the estimated budget due to necessity of repeated travels from Kilembe to KIUTH. With the help of research assistants however, I was able to get data from the individual patients, despite the gaps between my travels.

CONCLUSION

The prevalence of wound sepsis among post-operative patients in KIUTH was high, at 25.3%, with a higher prevalence in Emergency operations (aOR 0.239) compared to Elective surgeries. The condition was significantly associated with the ineffective use of antimicrobial prophylaxis (aOR 0.176, P=0.001, 95% CI 0.061-0.506), and operation via long midline incisions, although the former was not statistically significant. (P=0.116 95% CI 0.812-6.555). There was no significant association between post-operative wound sepsis and Patients Age, BMI and pre-morbid illnesses as it had been reported in previous studies.

Recommendations

Basing on the findings of this study, I recommend that quality assurance should be improved, with emphasis on the use of antimicrobial prophylaxis prior to all major surgeries. Also, surgeons should employ the best skills possible out their knowledge, in order to avoid the risk of long midline incisions. There is also need for a further study about post-operative sepsis, for a longer duration of time and a wider sample size, in order to find out other associated factors.

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