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Research Article

**TO STUDY THE DIABETIC ASSOCIATION WITH INCREASE
POSTOPERATIVE WOUND SITE INFECTION**Dr Tayyiba Wasim¹, Dr Kiran Qasim¹, Dr Nazish Shafi¹¹Services Hospital, Lahore, Gyane Unit II

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Abstract**Objective:** To find out the infection frequency in diabetic and non-diabetic patients in gynae abdominal surgeries**Methodology:** This descriptive case series evaluated the wound infection in diabetic versus non diabetic patients in abdominal surgeries of Services Hospital Lahore in one year from 1st January 2018 to December 2018. Questionnaire was made and filled with the help of patients. Inclusion criteria were all indoor patients of postoperative gynae abdominal surgeries, 25-70 years age, patients are included in it. Calculated sample size was 128 patients. Data was collected and SPSS was used for analysis. Patients were divided into two groups. Size of each group was 64. Infection rate was determined in each group.**Results:** 128 patients were included in the prospective descriptive study. Out of 128 patients 64 were diabetic and 64 were non diabetic patients. Overall infection rate was 47.15%. There were (37 PATIENTS) 57.81% infected cases in diabetic group while (13 PATIENTS) 20.31% patients were infected among non-diabetic.**Conclusion:** We conclude from this study that diabetes is an important risk factor in post-operative surgical side wound infection.**Key Words:** Wound infection, gynae abdominal surgeries, infection.**Corresponding author:****Dr. Tayyiba Wasim,**

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INTRODUCTION:

Surgical site wounds can have serious consequences, both for the patient and for the care facility. Surgical sites infection increases the length of postoperative stay, patient mortality, and need for reoperation (1). The most recent estimate suggest that 15.7% of hospital acquired infection are surgical site infection, making surgical site infection the third most prevalent form of health care associated infection (2). Despite advances in operative techniques and a better understanding of the pathogenesis of wound infections and wound healing, post-operative wound infection continue to be a major source of mortality and morbidity of patients undergoing operative procedure

Diabetes mellitus, is a group of metabolic disorder characterized by high blood sugar levels over a prolonged period (3.). Diabetes is due to either the pancreas not producing insulin or the cells of the body not responding properly to the insulin produce (4). There are three main types of diabetes mellitus (5-6)

Diabetes is characterized by recurrent or persistent high blood sugar and is diagnosed by demonstrating any one of the following (7-8)

- A. Fasting plasma glucose level ≥ 7 m.mol/l (126mg/dl).
- B. Plasma glucose ≥ 11.1 m.mol (200mg/dl) two hours after a 75 gm. oral glucose load as in a glucose tolerance test (OGTT)
- C. Symptoms of high blood sugar and casual plasma glucose ≥ 11.1 m.mol/l (200mg/dl).
- D. Glycosylated hemoglobin (HbA1c) ≥ 48 m mol /mol (≥ 6.5 DCCT) (8).

As Per the WHO, people with fasting glucose level from 6.1 to 6.9 m mol/l (110-125mg /dl) are consider to be impaired fasting glucose (9-10) people with plasma glucose at or above 7.8 m mol /l (140mg/l), but now over 11.1 m mol/l (200mg/dl), two hour after a 75 gm. oral glucose tolerance. (10). The American Diabetes Association (ADA) since 2003 uses a slightly different range for impaired fasting glucose of 5.6 to 6.9 m.mol/l (100 to 125mg/dl) (11).

Surveillance post-operative wound infections and surgical site infections are is useful tool to demonstrate the magnitude of the problem. By keeping the above points in mind, this study was conducted for early recognition of problems so that early interventions can be done for better management of post-operative wound infection in our problem.

The aim of our study was to evaluate the postoperative infection in diabetic patient and compare it with non-diabetic patient.

MATERIAL AND METHODS:

This descriptive study was conducted in Department of gynae-OBS unit 2, Services Hospital Lahore. The data was collected on one year period. (JAN2018-DEC1018)

Inclusion criteria

Surgery done in hospital, wound infection occurs within 30 days after operation.

Exclusion criteria

All those patients who were not operated in SHL.

DATA COLLECTION:

This descriptive study evaluated the wound infection in diabetic verses non-diabetic patients in gynecological surgeries, in unit 2 from JAN2018-DEC 2018, in Services Hospital Lahore Pakistan, which is a tertiary care hospital, which caters a large population belonging to different social status. Questionnaire was made and filled with help of patients. Inclusion criteria were all indoor patient of postoperative abdominal surgeries, 20-60 years patient. Patient having co-morbidities like obesity and steroids usage were excluded from the study. Calculated sample size was 128 patients.

Age of the patients ranges from 25-70 years. Majority of the population was housewives. Regarding the educational status more than half of patients were illiterate. The types of surgery done were total abdominal hysterectomy and laparotomy. Operative patients were followed up regularly, during the post-operative period. The wound was check on 4th post-operative day routinely and earlier or later according to the complaint of the respondent.

Wound swabs were sent for culture and sensitivity where discharge from the wound was present. Micro-organisms were identified and their antibiotic sensitivity were done. Treatment was started in accordance with the culture sensitivity report. Patients' progress and response to the drug treatment were monitored. If needed secondary suturing was done and noted. In secondary suturing refreshing of skin edges with excision of fibrosed granulation tissue was done after achieving hemostasis.

RESULTS:

128 patients divided into two groups of 64, group A

and group B. In group A were diabetic patients and group B were non-diabetic patients. Patients age 50 or more in group A were 47 while patient age less than 50 years were 17. Mean age of group A is 41.

In group B patients more than 50 years of age were 50 and patients less than 50 years of age were 14. Mean age group of group B was 34. In group A

37 patients were infected, in group B, 13 patients were infected, as shown in table 2

64 patients out of 128 were diabetic and 64 were non-diabetic. 37 are infected diabetic patients, 13 infected were non-diabetic patients. as shown in table 1.

TABLE 1

	Yes	No	Total
Diabetic	37	27	64
Non diabetic	13	27	64
Total	50	54	128

TABLE 2

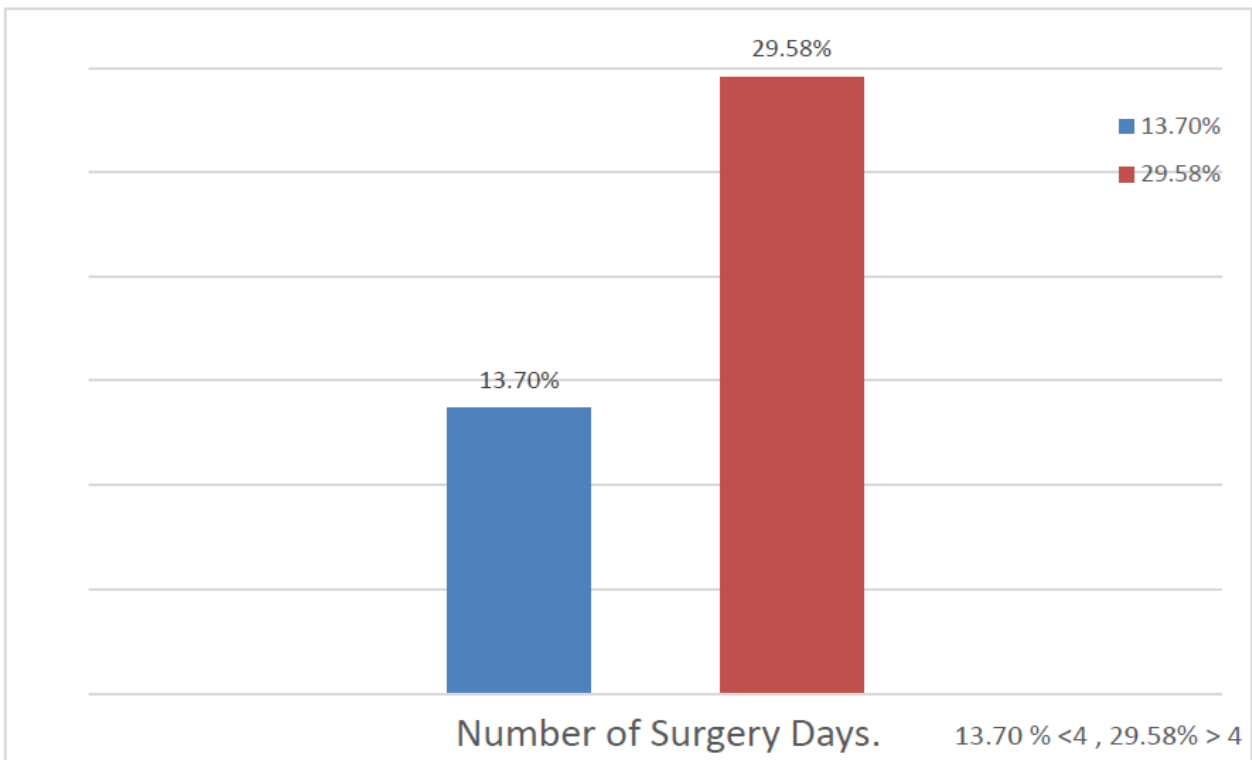
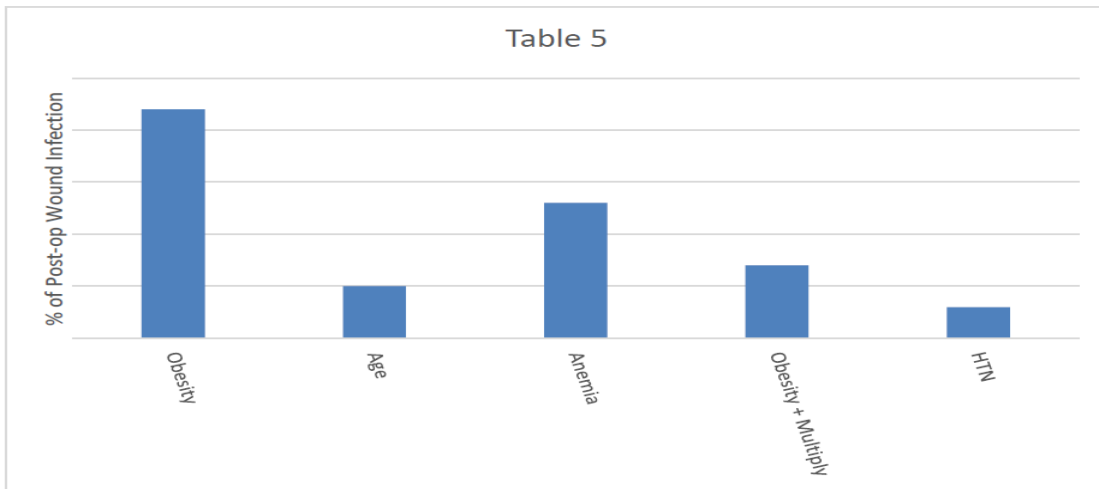
patient 50 years or above (A)	patient 50 years or less than 50 years (B)
47	50
17	14
64	64

Age of the patients was 25-70 years, most of the patients were illiterate and housewives as shown in table 3

Age	
25-30	8
30-40	14
40-50	27
50-60	49
60-70	28
Education	
Illiterate	53%
0-5 Years of schooling	22.4%
5-10 years of schooling	12.06%
High schooling	10.5%
Employment	
Housewife	78.6%
Employed	21.4%

Table 4

Risk factor	No. of post operative wound infection
Obesity	22
Age	5
Anemia	13
Obesity + multiply	7
HTN	3



E.coli(38.9%)was the most common organism found in wound swab culture. Sensitivity for amoxyclave (39.44%was found to be more.Other drugs found to be sensitive were gentamycin (20.66%) and cefotaxime(27.72%).

From tab 4 and 5, obesity was present in 22patients, anemia in 12patients; obesity and multiparity in 7 patients, advanced age in 5 were found to be common risk factor. From tab 6, we found that post of wound infection was noted more commonly after day 4.

We conclude that DM is an important risk factor in post-operative wound infection

DISCUSSION:

The study was conducted to find out the incidence of post-operative wound infections in gynecology wound infection.

In this study we compare postoperative infection in diabetic and non-diabetic patients ‘total of 128 patients was included, of which 64 patients were diabetic and 64 were non-diabetic. Diabetes is a pervasive health issue in today society. It induces complex negative effect on multi organ system functions and processes, including issue related to wound healing.

The probability of wound infection is determined largely by the interaction of microbial burden, local wound condition and the patient’s systemic host defenses. The conditions of antimicrobial therapy, both prophylactically and therapeutically, can only be defined when these other factors are under control (12).

In our study, in group of diabolic patients, infection was observed in 37 patients and infection was not present in 27patients. In non diabolic patients’ infections were found in 13 but non infective patients were 51.

The study showed the appearance of infection between 4 and 8 post-operative days in more than half of the population. Similar results was found in a study by Matin ASMR (1981).(13).Haddad V and Macon WLN(1980)(14- 15)showed in their studies that the occurrence of wound infection was on average of 6.8 post-operative day, which was similar to that of ours.E.coli is most common cause of infection accounting for38.9%of cases of the others are Klebsiella 7.10%and Pseudomonas7%.Staph aureus present in 4.1% in ours study which is nearly similar to (Wassef et al)(17).Only single stain of MRSA was found in the study, This study correlates with the study of Anila Ansar(16) and Wassef et al(17)

We conclude from study that DM is an important risk factor for post op wound infections. This correlates with the Fahey et al study {18}} this data also corroborate with reports from Goodson and Hunt{ 19-22}}that implicate a defective inflammatory response to wounds in the pathophysiology of delayed wound healing are associated with diabetes

CONCLUSION:

Surgical site wound infection determines the final outcome of an operation apart from the morbidity and mortality they cause.The surgical care is very important to prevent wound infection but some pre and post-operative steps can reduce post-operative wound infection also.We conclude from our study that incidence of post of wound infection was more common in diabolic patients than non diabolic.

The absence or deficiency of insulin in diabetes mellitus causes impaired metabolism if carbohydrates, fats and proteins,which are necessary for cellular activities and tissue synthesis in wound healing (21)

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