

**Frequency of immediate post-operative gynecologic and obstetric complications in a tertiary care center in Karachi**

**ABSTRACT**

**Objective:** Postoperative complications are commonly observed during gynecologic and obstetric surgeries that could be controlled by timely management. The factors that involve in these complications could be related with patient or surgeon as well. Therefore, the aim of this study was to determine the frequency of immediately reported postoperative complications in gynecologic and obstetric surgeries in a tertiary care center.

**Methodology:** A retrospective study was conducted in the Department of Obstetrics and Gynecology of Hamdard hospital, Karachi. The duration of this study was 1 year from July 2018 – June 2019. A total of 200 adult female patients of 18 to 65 years having elective or emergency surgical procedure were included in the study. Data was analysed by using SPSS version-16. Mean standard deviation was calculated for age and hospitalization stay. Frequencies and percentages were calculated for presence of comorbidities such as obesity, anaemia and diabetes mellitus and postoperative complications.

**Results:** The study results showed the mean age was reported  $32.04 \pm 7.79$  years and mean hospital stay was observed  $3.38 \pm 1.08$  days. Comorbidities revealed that 26(13.0%) were obese, 89(44.5%) were anemic and 6(3.0%) had diabetes. Postoperative Nausea and Vomiting was the most common complication observed in 110(55.0%) women followed by fever that was reported in 69(34.5%) cases. Three patients (1.5%) were found to have Paralytic Ileus, 23(11.5%) reported abdominal distention, postoperative gastritis was reported in 15(7.5%) cases, bleeding per vagina observed in 7(3.5%) women. Wound dehiscence was found in 2(1.0%) cases and Wound Infection in 10(5.0%) women.

**Conclusion:** The present study concluded that post-operative nausea and vomiting were observed in most of the patients followed by fever subsequent to gynecologic and obstetric surgeries. Additionally, the incidence of wound infection and wound dehiscence were observed low.

**Keywords:** Nausea, Vomiting, Postoperative complication, Diabetes, Anemia

UNDER PEER REVIEW

## INTRODUCTION

Risks of complications exist in any type of surgical procedure. The chances of postoperative complications depend on independent distinctive features such as age, coexisting illnesses and functional position.(1) These complications can happen both during operation and after operation. Ureters, bowels, nerves and vessels are in immediate contact to the uterus that makes them liable to injury. Complications that occur intraoperatively can be restored instantly if they are quickly recognized during the surgical treatment. It is predicted that gynecological surgeries are accounted for 75% of iatrogenic injuries to the urinary tract (2). Urinary tract injuries can complicate almost 0.2-1% of gynecological surgeries (2). Hysterectomy, salpingectomy, and cystectomy are the most common surgical procedures executed in gynaecology(3).

On the other hand, postoperative complications can occur at any time subsequent to surgery. These complications can be varied included pyrexia, upper respiratory illnesses, urinary tract infections, urinary retention, surgical site infections (SSIs), and abdominal distension as well. It is predicted that SSIs are accounted for 0.5-15% of the total postoperative complications (4). World Health Organization (WHO) stated that 11.8 out of 100 surgical procedures in lower- and middle socioeconomic countries are affected by the surgical site infections (5). The causes that are responsible for these unwanted complications could be either surgeon-related or patient-related. The patient's age, comorbidities, weight, compliance level, hygienic condition, nourishment, and functional status may demonstrate to be direct or indirect contributory factor. (4).

A center for Disease Control and Prevention (CDC) declared that any infections happening in 30 days following surgical operation is referred to surgical site infection (SSI) (6). The time period of the hospital stay and the frequency of hospital re-admission will increase due to having SSI that will lead to higher mortality and morbidity rate (7). Furthermore, obesity; high body mass index (BMI) during pregnancy (25 and over) have a greater risk for postoperative complications following Cesarean Section (8,9). Additionally, pregnant women with other coexisting illness like anemia, diabetes mellitus and hypertension have higher chances to develop SSI following Cesarean Section.(10)

Internationally, the number of cesarean sections performed annually is rising at a striking rate. As a result, postoperative care of these women needs attention. Cesarean delivery (CD) is one of the most frequent surgical procedures carried out in the United States, is accounted for 32% of all deliveries (11). Almost 1.3 million CDs were carried out in 2014

(11). Wound seroma or hematoma that is expressed in 2-5% of women following CD can cause wound dehiscence leading to wound infection (12,13). Wound dehiscence is described as disconnection of incision and it complicates 2-7% following CD (12,13). Moreover, wound infection shows by discharge, erythema, and abnormal hardening of the incision that complicates 2-7% of cases and usually grows 4 to 7 days following CD (14).

As far as comorbidities are concerned with respect to wound infection that includes diabetes mellitus, blood transfusion, obesity, smoking, age, malnutrition, ineffectiveness of immune system, immunosuppressive treatment and longer interval of preoperative hospitalization stay (15). Postoperative complications particularly associated with C-sections are deficient prenatal care, many pregnancies, history of previous C-section, chorioamnionitis, pre-labor breakage of the fetal membranes, labor dystocia, emergency/labored delivery, and obstetrical service carried out in the training hospitals (16).

Gastrointestinal troubles are one of the common postoperative complications (17). Intestinal gas retention, nausea and abdominal pain, abdominal distension is caused by Ileus that occurs due to decreased peristalsis, intestinal manipulation and immobility of intestine (18). Moreover, flatulence, nausea and vomiting leads to mother's disappointment and make longer hospitalization stay (18).

There is an inadequate data available regarding immediate postoperative complications with coexisting diseases in women underwent gynecologic and obstetric surgeries. Hence, the aim of this study was to assess the frequencies of immediate and late gynecological and obstetric complications in a tertiary care hospital in order to overcome these complications.

## **METHODOLOGY**

A retrospective study was conducted in the Department of Obstetrics and Gynecology of Hamdard hospital, Karachi by using non-probability, purposive sampling technique. Study was carried out over a period of one year from July 2018 – June 2019. A total of 200 women were selected for this study. Adult female patients of 18 to 65 years having elective or emergency procedure were included in the study whereas minor patients admitted due to other pathology, pathological fractures, other benign diseases, Patients who simultaneously having any other pathology at the time of admission, medical or obstetric complications, inter-operative or immediate major postoperative complications

(for instance the need for blood transfusion for any reason, intolerance to oral fluid) were excluded from the study.

A standardized **Performa** was prepared for data collection. Retrospective Data was obtained from departmental records. Demographic information such as age, hospital stay, religion and socioeconomic status were documented. Type of comorbidities (obesity, anaemia and diabetes mellitus) **and postoperative** complications were also documented. Data was analysed by using SPSS version-16. Mean standard deviation was calculated for age and hospitalization stay. Frequencies and percentages were calculated for type of comorbidities such as obesity, anaemia and diabetes mellitus and postoperative complication.

## RESULTS

A total of 200 women were selected for this study their mean age was reported  $32.04 \pm 7.79$  years and mean hospital stay was observed  $3.38 \pm 1.08$  days. As far as religion is concerned, 182(91.0%) were Muslims, 15(7.5%) women were Hindu and 3(1.5%) women were Christian. Socioeconomic status showed 11(5.5%) belonged to lower class, 117(58.5%) belonged to middle class and 72(36.0%) belonged to upper class, **as shown in Table 1.**

Comorbidities revealed that 26(13.0%) were obese, 89(44.5%) were anemic and 6(3.0%) had diabetes. Postoperative Nausea and Vomiting was the most common complication observed in 110(55.0%) women followed by fever that was reported in 69(34.5%) cases. Three patients (1.5%) were found to have Paralytic Ileus, 23(11.5%) reported abdominal distention, postoperative gastritis was reported in 15(7.5%) cases, bleeding per vagina observed in 7(3.5%) women. As far as the surgical site infection is concerned, wound dehiscence was found in 2(1.0%) cases and Wound Infection in 10(5.0%) women, as shown in Table 2.

**Table 1: Mean Demographic characteristics of patients. (n=200) Frequency of religion and socioeconomic status of patients**

Variable		Mean±SD n(%)
Age (years)		32.04±7.79
Hospital Stay (Days)		3.38±1.08
Religion	Islam	182(91.0%)
	Hindu	15(7.5%)
	Christian	3(1.5%)

<b>Socio Economic Status Household income</b>	<b>Lower Class</b>	11(5.5%)
	<b>Middle Class</b>	117(58.5%)
	<b>Upper Class</b>	72(36.0%)

**Table 2: Frequency of Comorbidities and Postoperative complications.**

<b>Variable</b>		<b>n</b>	<b>%</b>
<b>Co-Morbid Obesity</b>	<b>Yes</b>	26	13.0
	<b>No</b>	174	87.0
<b>Co-Morbid Anemia</b>	<b>Yes</b>	89	44.5
	<b>No</b>	111	55.5
<b>Co-Morbid Diabetes</b>	<b>Yes</b>	6	3.0
	<b>No</b>	194	97.0
<b>Fever</b>	<b>Yes</b>	69	34.5
	<b>No</b>	131	65.5
<b>Postoperative Nausea and Vomiting</b>	<b>Yes</b>	110	55.0
	<b>No</b>	90	45.0
<b>Paralytic Ileus</b>	<b>Yes</b>	3	1.5
	<b>No</b>	197	98.5
<b>Abdominal Distension</b>	<b>Yes</b>	23	11.5
	<b>No</b>	177	88.5
<b>Wound Dehiscence</b>	<b>Yes</b>	2	1.0
	<b>No</b>	198	99.0
<b>Wound Infection</b>	<b>Yes</b>	10	5.0
	<b>No</b>	190	95.0
<b>Bleeding Per Vagina</b>	<b>Yes</b>	7	3.5
	<b>No</b>	193	96.5
<b>Post Operative Gastritis</b>	<b>Yes</b>	15	7.5
	<b>No</b>	185	92.5

UNDER PEER REVIEW

## DISCUSSION

Postoperative complications after surgical procedure are a forthcoming challenge to the operating surgeon. The achievement in the surgical field with respect to innovation in surgical skill and the simple accessibility of surgery as a treatment preference have been ruined due to the rising frequency of wound dehiscence. Various external and internal factors affects wound healing which is a complicated process. The internal factors represent comorbidities such as hypertension and diabetes whereas external factors constitute wound infection, the general suturing techniques, suturing materials, and postoperative wound care.(19)This study demonstrated the instant postoperative complications that happens after gynecologic and obstetric surgical procedures.

One of the studies reported the average interval of hospitalization stay following gynecologic and obstetric surgery was  $10.79 \pm 7.91$  days because of major complications. (4) Our study was inconsistent with the above reported study and revealed that mean hospital stay was  $3.38 \pm 1.08$  days following surgery due to minor complications that was reflected in our study.

Similarly, one research reported the higher frequency of nausea that was 73.6% after 2 hours following cesarean delivery in spinal anesthesia.(20) This is due to the fact that high level of progesterone causes relaxation of smooth muscle, enhance gastrin secretion, reduction in gastrointestinal motility, and lower esophageal sphincter tones that leads to develop more frequently emetic symptoms..(21) Our study was in accordance with above mentioned study and revealed that postoperative nausea and vomiting was reportedly high in 110(55.0%) women.

Likewise, the frequency of Postoperative nausea and vomiting (PONV) in one research was relatively low (22) contrast to some researches from most parts of the globe (23-26)such as Asia, North America and Europe. This is regardless of the fact that a considerable number of these patients peri-operatively received opioids. The present study was inconsistent with the above reported studies and revealed that incidence of postoperative nausea and vomiting was high 110(55.0%) due to insufficient administration of opioids peri-operatively.

Postoperative wound infection is of huge significance for both patient and surgeon. Another research that was conducted in hospital of Nepal, determined the frequency of postoperative wound infection and to assess the risk factors that leads to wound infection in obstetrics and gynecology surgery. The incidence of wound infection was found in 5.87% cases. 70% patients had preoperative hospital stay that ranges to 0-2 days while 30% had observed 3-18 days (27) The present study was in agreement with the above reported study and showed that only 5.0% had postoperative wound infection and mean hospital stay was  $3.38 \pm 1.08$  days.

Frequency of wound dehiscence following obstetrical and gynecological surgeries can be considered as surgical crisis that can prolong the illness period and causes unnecessary anxiety to patients and can also raise the hospitalization expenses. Therefore, these complications can be prevented by handling the factors included in the progression of wound dehiscence.(28) One research demonstrated the frequency of wound dehiscence in their hospital was observed to be 3.05% and secondary suturing are required for all of these patients. They found the commonest coexisting morbidities were diabetes and hypertension. Among comorbidities, high frequency of wound dehiscence was observed in diabetes and hypertension. One more secondary effect was the usual stay of patients in hospital with wound dehiscence that reflected overall morbidity in these patients. Patients reflected prolong stay in the hospital who developed wound dehiscence.(29) As far as the present study is concerned, coexisting disease such as diabetes was reported only in 6(3.0%) cases and wound dehiscence was observed only in 2(1.0%) cases. Therefore, it was proved by our study that patients had low incidence of wound dehiscence reflecting shorter duration in hospital stay regardless of existence of co-morbidity like diabetes.

Post-operative fever is frequently observed following most of the gynecologic surgeries. Though mostly fever is physiological following surgery with self-resolution while few need thorough investigations.(30) Therefore, one retrospective study assessed the frequency and risk factors for postoperative febrile morbidity in 199 women subsequent to laparoscopic-assisted vaginal hysterectomy (LAVH). Their mean age was reported  $46 \pm 6$  years, a mean overall hospital stay of  $5 \pm 2$  days, and a mean hospital stay of  $3 \pm 2$  days postoperatively. Postoperative fever was recorded in 31(15.6%) cases thereby reflecting moderate frequency of febrile morbidity after LAVH (31). The present study was inconsistent with the above cited research and reported that mean age of studied women was  $32.04 \pm 7.79$  years and mean postoperative hospital stay of  $3.38 \pm 1.08$  days. Postoperative fever was documented in 69 (34.5%) cases thereby reflecting higher frequency of febrile morbidity.

## CONCLUSION

The present study concluded that post-operative nausea and vomiting were observed in most of the patients followed by fever subsequent to gynecological and obstetrical surgeries. Even though postoperative fever is common in gynecologic patients, the incidence of wound infection and wound dehiscence were observed low.

## Ethical approval

Ethical approval was taken from the ethical review board of Hamdard University, Karachi.

## Consent

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

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