

**A STUDY REGARDING POST-OPERATIVE COMPLICATIONS OBSERVED AT A  
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**ABSTRACT**

**Aim of study:** To evaluate post-operative complications during hospital stay of patients in a general surgical ward at a tertiary care teaching hospital of Punjab. **Methodology:** It is a cross-sectional observational study conducted at a tertiary care center. Duration of the study was 3 months from April 2017 to June 2017. All the patients who underwent surgery due to any reason were included in the study after taking informed consent. Detailed history, examination, treatment and post-operative observed complications were noted on preformed proforma. All the data was analyzed using SPSS version 18.0. **Results:** Total 342 patients underwent surgical procedures which included 150(43.8%) elective and 192(56.2%) emergency procedures. Most common surgical procedure done was exploratory laparotomies 65(19%). Appendectomy was performed in 56 (16%), hernia repair in 34(9.9%), cholecystectomy including open and laparoscopic in 38 (11.1%), thyroidectomy in 25 (7.3%) and ano-rectal surgery including peri-anal fistula, hemorrhoids and sinuses in 40 (11.6%) of the patients. Complications were found in 198 (57.8%) of the patients. Most of the complications occurred after emergency surgeries in 130 (65.6%) patients as compared to 68 (34.3%) patients in elective procedures. Most common was postoperative pyrexia in 130 (38%) patients followed by postoperative nausea and vomiting in 98 (28.6%), prolonged paralytic ileus 42 (12.2%), intra-abdominal bleeding 33(9.6%) wound infection in 50 (14.6%), respiratory tract infection in 18 (5.2%) and thromboembolism phenomenon was observed in 3 patients. Two patients developed fecal fistula while 3 patients developed wound dehiscence. 8 patients died postoperatively in the hospital during the study period. **Conclusion:** We found that the most common postoperative complication was fever followed by post-operative nausea/vomiting, spinal headache, wound infection and respiratory tract infection. Post-operative complications are more common in emergency surgery than elective. It is important that the resident staff should be aware of these complications and how to manage them.

**KEYWORDS:** Complication, appendectomy, cholecystectomy, post-operative nausea, post-operative fever, wound infection.

**INTRODUCTION**

Surgical complications can occur after any operation, there is no surgical procedure in this world free from complication. A healthy outcome is needed on both sides but a cascade of complications may face even on a simple procedure. The surgeons should be intellectually honest and tackle the complications with wisdom.<sup>[1]</sup> Postoperative complication may be defined as any negative outcome as observed by the surgeon or by the patient.<sup>[2]</sup> Various factors can contribute to the post-operative complications but common ones are patient's condition himself, technique and surgical expertise, resuscitation, careful surgical technique, age, any co-morbid condition (coronary artery disease, diabetes mellitus, hypertension, any chronic illness), anesthesia technique and pre or post-operative care etc. These

complications range from simple wound infection or unusual pain at operation site to the extremes like death or permanent handicapping of the patient.<sup>[3]</sup> Surgical site infections (SSIs) are known to be one of the most common causes of hospital acquired infections worldwide and account for nearly 20% to 25% of all hospital acquired infections.<sup>[4]</sup> Pulmonary complications after abdominal surgery, including pneumonia, atelectasis and respiratory failure, are significant because for patient suffering, prolonged hospital stay and increased mortality rate.<sup>[5,6,7]</sup> Adverse events that are closely related to processes of care, such as postoperative complications, may be a better measure of quality than death rates or other intermediate outcomes. This study was conducted to find out different postoperative complications in a general surgical ward so that effective

measures could be suggested in order to decrease the morbidity and mortality associated with surgical procedure and provided an opportunity to early detect and prompt management of post-operative complication.

## METHODOLOGY

All the patient who underwent elective or emergency surgery for various causes in general surgical ward, Jinnah Hospital Lahore, were included in the study. Duration of the study was 3 months from April 2017 to June 2017. Total 342 patients were enrolled in the study. Patients who were admitted but no surgery was performed were excluded. The data recorded included age, sex, presentation at time of surgery (emergency or elective), surgery performed, complications during postoperative period and outcome. A detailed history and clinical examination was conducted. The data was noted on a predesigned proforma. Baseline investigations like complete blood count, urinalysis, serum urea/ creatinine, serum electrolytes, CXR, electrocardiograph, hepatitis B and C profile, blood grouping and blood sugar (random) were noted. Abdominal radiographs and ultrasonography of abdomen was also done where required. After initial conservative management including IV fluid

resuscitation with ringer's lactate solution/foley catheterization/nasogastric intubation, pre-anesthetic assessment was made. The post-operative complications were noted. Patients were evaluated for both local and systemic complication. Persistent postoperative fever (>48 hrs.), post-operative nausea and vomiting etc. were monitored regularly. Examination of the wound was started from second postoperative day. The clinical signs of redness, edema, serous discharge, and presence of pus or discharge of intestinal contents (enter cutaneous fistula) were noted. The stomal orifices (colostomy/ileostomy) were inspected from the first postoperative day and monitored regularly. Septicemia was also noted in post-operative period and mortality associated with it was also recorded. The abdomen was also examined for early detection of any leakage from the site of intestinal repair. The 30 day mortality was recorded. The late complications like incisional hernia formation and post-operative adhesive intestinal obstruction were noted for 3-6 months after surgery through follow ups. Data was analyzed with the help of SPSS. Descriptive statistics of patients were analyzed. Frequencies of different surgeries performed and post-operative complications were noted.

**Table 1: Surgeries performed during three month of period.**

Surgery	No. of patients	Percentage
Hernia repair	34	9.9%
Appendectomy	56	16%
Laparotomy	65	19%
Cholecystectomy	38	11.1%
Incision drainage	29	8.4%
Thyroidectomy	25	7.3%
Chest intubation	14	4%
Breast surgery	19	5.5%
Ano-rectal surgery	40	11.69%
Miscellaneous surgeries	22	6.4%

**Table 2: Post-operative complications observed during three month of period.**

Complication	No. of patients	Percentage
Fever	130	38%
Nausea/vomiting	98	28.6%
Wound infection	50	14.6%
Wound hematoma	17	4.9%
Respiratory complication	18	5.2%
Prolonged paralytic ileus	42	12.2%
Spinal headache	12	28.5%
Intra-abdominal bleeding	33	9.6%
Fistula formation	11	3.2%
Septicemia	18	5.2%
Myocardial infraction	3	0.08%
Urinary tract infection	21	6.1%
Thromboembolism/DVT	3	0.08%
Death	8	2.3%
Miscellaneous	34	9.9%

## RESULTS

Total 342 patients were admitted during three months of period underwent different surgical procedures, which included 150(43.8%) elective and 192(56.2%) emergency procedures. Most common surgical procedure done was exploratory laparotomies 65(19%) in the surgical emergency departments due to many underlying reasons e.g. intestinal obstruction, intestinal perforation, ruptured appendix etc. Appendectomy was performed in 56 (16%), hernia repair in 34(9.9%), cholecystectomy including open and laparoscopic in 38 (11.1%), thyroidectomy in 25 (7.3%) and ano-rectal surgery including peri-anal fistula, hemorrhoids and sinuses in 40 (11.6%) of the patients. Other different surgeries that were performed are shown in Table 1. Complications were found in 198 (57.8%) of the patients. Most of the complications occurred after emergency surgeries in 130 (65.6%) patients as compared to 68 (34.3%) patients in elective procedures. Most common complication observed was postoperative pyrexia in 130 (38%) patients followed by postoperative nausea and vomiting in 98 (28.6%), prolonged paralytic ileus 42 (12.2%), intra-abdominal bleeding 33(9.6%) wound infection in 50 (14.6%), respiratory tract infection in 18 (5.2%) and thromboembolism phenomenon was observed in 3 patients. Two patients developed fecal fistula while 3 patients developed wound dehiscence. 8 patients died postoperatively in the hospital during the study period. All other complication observed is mentioned in Table 2.

## DISCUSSION

Careful postoperative care is as essential for a successful outcome of surgery. Deficient care in either may produce a disappointing outcome, regardless of the standard of the surgery.<sup>[8]</sup> The main aim of postoperative care is prevention, early identification, and treatment of postoperative complications. Fever is common among postoperative patients.<sup>[9,10,11]</sup> In our study the most frequent complication observed was postoperative fever in 130 (38%) patients. Most early postoperative fever is caused by the inflammatory stimulus of surgery and resolves spontaneously.<sup>[12,13]</sup> Patient usually develop fever within 48 hours after surgery due to pulmonary atelectasis. Between 48 hours and five days, the main causes of fever are chest or urinary tract infection and thrombophlebitis. And more than five days after surgery, a wound infection or anastomotic breakdown should be suspected.<sup>[14]</sup> Between 7 to 10 post-operative day fevers usually happen due to DVT or pulmonary embolism.<sup>[15]</sup> Post-operative nausea and vomiting are very common complication about which patient complains and this is due to the effect of anesthesia.<sup>[16]</sup> Nausea/vomiting are not life threatening complications but it is very distressful for the patient. The overall incidence of nausea/vomiting is about 30 percent but can be as high as 70 percent in high-risk patients.<sup>[17]</sup> Most episodes of postoperative nausea and vomiting resolve within 24 hours. In our study 98 (28.6%) of patients suffered from post-operative nausea/vomiting. Wound infection is a

well-recognized complication of surgical treatment and sometimes places a high burden on hospital resources.<sup>[18]</sup> It is the most common nosocomial infection, accounting for 38% of all such infections.<sup>[19]</sup> In our study wound infection occurred in 14.6% of patients. A study done by Jawaid *et al.*, also recorded postoperative fever in 18.2% as the commonest complication, postoperative nausea and vomiting in 11.6% cases and wound infection in 11.4%.<sup>[20]</sup> Septicemia, a grave complication, was seen in 18 patients, undergone emergency laparotomy while no case of septicemia recorded after elective laparotomy. In surgery different areas of the gastrointestinal tract resume function at different times. The small bowel is affected only transiently whereas the stomach can take from 24-48 hours to recover. The colon takes the longest to resume normal motility patterns, requiring 48-72 hours.<sup>[21]</sup> In our study 12.2% of patients developed prolonged paralytic ileus. Chang *et al.* reported that postoperative ileus was the most common minor complication, affecting 18% of patients after radical cystectomy. Wound dehiscence is an acute wound failure. It has a significant impact on health care cost both for the patient and the hospital.<sup>[22]</sup> Nationally results from studies Waqaret *al*<sup>15</sup>. Afzal S, *et al* were showing percentage of wound dehiscence as 8.13% while in an international study documented wound dehiscence is 0.43%.<sup>[23]</sup> In our study this complication occurred in three patients. Venous thromboembolism (VTE) is considered to be an important cause of morbidity and mortality in hospitalized patients, especially in those undergoing major surgical procedure. A study from Singapore showed that out of 227 elective surgeries one patient developed clinical DVT postoperatively.<sup>[25]</sup> In our study three cases of clinical DVT was documented. No regular prophylaxis was given to the patients although all major surgeries including surgeries for colon and pancreatic malignancy were performed. Only early postoperative mobilization was encouraged for prevention of these complications. Early recognition with prompt intervention is the best way to avoid progression to a possibly devastating situation.

## CONCLUSION

We found that the most common postoperative complication was fever followed by post-operative nausea/vomiting, spinal headache, wound infection and respiratory tract infection. Post-operative complications are more common in emergency surgery than elective. It is important that the resident staff should be aware of these complications and how to manage them

## REFERENCES

1. Surgical Complications: Myths and Realities. Pulse International, 2004; 5(4): 1.
2. Semchyshyn N, Engelmann RD. Surgical Complications. [Online], 2005. [cited 2005 Mar 9] Available from: URL:htt p://www.emedicine.com/derm/topic829.htm.

3. Martin RC, Brennan MF, Jaquez DP. Quality of Complication Reporting in the Surgical Literature. *Ann Surg*, 2002; 235(6): 803-813.
4. Driscoll P, Farmer AD, Bestrode CJK. Postoperative care. In: Russell RCG, Williams NS, Bestrode CJK. *Bailey and Love's short practice of surgery*. 24th end. New York: Oxford University Press, 2004; 1436-49.
5. Ephgrave KS, Kalian-Wexler R, Faller M, Booth B, Werkmeister L, Young S. Postoperative pneumonia: a prospective study of risk factors and morbidity. *Surg*, 1993; 114: 815-9.
6. Pereira ED, Fernandez AL, Ancon MD, Peres CD, Attalla AN, Fares in SM. Prospective assessment of the risk of postoperative pulmonary complications in patients submitted to upper abdominal surgery. *Sao Paulo Med J.*, 1999; 117(4): 151-60.
7. McAlister FA, Borsch K, Man J, Bradley J, Jackal M. Incidence of and risk factors for pulmonary complications after no thoracic surgery. *Am J Respire Crit Care Med*, 2005; 171: 514-7.
8. Driscoll P, Farmer AD, Bestrode CJK. Postoperative care. In Russell RCG, William NS, Bestrode CJK. *Bailey & Love's Short Practice of Surgery*. 24th end. New York: Oxford University Press, 2004; 1436-49.
9. Garibaldi RA, Brodie S, Matsu Miya S, Coleman M. Evidence for the non-infectious etiology of early postoperative fever. *Infect Control*, 1985; 6(7): 273-7.
10. Galicier C, Richet H. A prospective study of postoperative fever in a general surgery department. *Infect Control*, 1985; 6(12): 487-90.
11. Dellinger EP. Approach to the patient with postoperative fever. In: Gobat S,
12. Bartlett J, Blacklow N, editors. *Infectious diseases*. Philadelphia: Lippincott Williams & Wilkins, 2004; 817-23.
13. Pile JC. Evaluating postoperative fever: a focused approach. *Cleve Clin J Med*, 2006; 73(Supple 1): S62-6.
14. Davidson B, Ray R. Postoperative care of surgical patients. *Student BMJ*, 1999; 7: 99-101.
15. Barrie PS, Hyde LJ, Eachempati SR. Causes and Consequences of Fever Complicating Critical Surgical Illness. *Surge Infect*, 2004; 5(2): 145-59.
16. Kazemi-Kjellberg F, Heinz I, Tamer MR. Treatment of established postoperative nausea and vomiting: a quantitative systematic review. *BMC Anesthesiology*, 2001; 1: 2.
17. Gann TJ. Postoperative nausea and vomiting-can it be eliminated *JAMA*, 2002; 287: 1233-6.
18. Al-Hashmi AM, Salem MI, Khan ZA, and No wry SM. Postoperative wound infection in surgical procedures. *Saudi Med J*, 2004; 25(8): 1122-3.
19. Alicia JM, Teresa CH, Michele LP, et al. Guideline for prevention of surgical site infection. *Infect Control Hops Epidemiology*, 1999; 20(4): 247-78.
20. Jawaid M, Masood Z, Iqbal SA. Post-operative complications in a general surgical ward of a teaching hospital. *Pak J Med Sci.*, 2006; 22(2): 171-5.
21. Ayana JZ, Weismann JS. Teaching hospitals and quality of care: a review of the literature. *Milbank Q*, 2002; 80(3): 569-93.
22. Livingston EH, Pesaro EP. Postoperative ileus. *Dig Dis Sic.*, 1990; 35: 121-31.
23. Bunger TJ, Kale-Pradhan PB. Prokinetic agents for the treatment of postoperative ileus in adults: A review of the Literature. *Pharmacotherapy*, 1999; 19(4): 416-23.
24. Col C, Soren A, Col M. Can postoperative abdominal wound dehiscence be predicted? *Tokai J Ext Clan Med*, 1998; 23 (3): 123-27.
25. Spiliotis J, Tsiveriotis K, Daisies AD, Vaxevanidou A, Zacharias G, Giraffes K, Keels S, Rogdakis A. Wound dehiscence: is still a problem in the 21st century: a retrospective study. *World J Emerge Surge*, 2009; 4: 12.