

“A Study to Assess the Prevalence of Post Operative Pulmonary Complications and Associated Risk Factors in Patients Undergoing Elective Upper Abdominal Surgeries In Western Uttar Pradesh”

Dr. Ankit Bhardwaj; Dr. Eema Chaudhary; Dr. Navroop Kaur

Department of Pulmonary Medicine: Subharti Medical College Meerut

Corresponding Author: Dr. Ankit Bhardwaj

Date of Submission: 22-02-2019

Date of acceptance: 08-03-2019

I. Introduction

In studies conducted over the past 60 yr, incidence of postoperative pulmonary complications (POPCs) has varied between 5- 70%, the highest rates were for upper abdominal and thoracic procedures.⁽¹⁾ POPCs include postoperative hypoxia, atelectasis, bronchospasm, pulmonary infiltrate, aspiration pneumonitis, pleural effusions and pulmonary oedema.⁽²⁾ Factors contributing to post operative respiratory complications include diaphragm dysfunction, decreased mucociliary clearance, shallow and monotonous breathing and respiratory depression.⁽³⁾ Current smoking was associated with a nearly six fold increase in risk for a POPC. Reduction in smoking within 1 month of surgery was not associated with a decreased risk of POPCs.⁽⁴⁾ Midline incision caused significantly more pulmonary dysfunction than a transverse incision in patients with chronic obstructive pulmonary disease.⁽¹⁰⁾

II. Aims And Objectives

- To determine the prevalence of post operative pulmonary complications in patients undergoing elective upper abdominal surgeries in Western Uttar Pradesh.
- To identify the risk factors associated with development of post operative pulmonary complications in patients undergoing elective upper abdominal surgeries in Western Uttar Pradesh.

III. Material And Method

A hospital based cross sectional study was conducted on patients in Western Uttar Pradesh. 100 patients were enrolled for the study after fulfilling the inclusion and exclusion criteria. The study was conducted in the Department of TB and Respiratory Diseases at Chhatrapati Shivaji Subharti Hospital, affiliated to Subharti Medical College, Meerut Uttar Pradesh. The present study was conducted over a period of 18 months from October 2016 to March 2018.

INCLUSION CRITERIA:

- Patients age more than 18 years
- Patient who underwent elective upper abdominal surgery

EXCLUSION CRITERIA:

- Patients undergoing emergency surgery
- Immunocompromised patients
- Extra abdominal surgeries

Spirometry was performed in all the patients enrolled in the present study and on the basis of FEV1/FVC ratio and FEV1 the patients were categorized into obstructive and restrictive pattern, respectively.

IV. Observations And Results

The results obtained in the study were tabulated and statistically analyzed using following test:

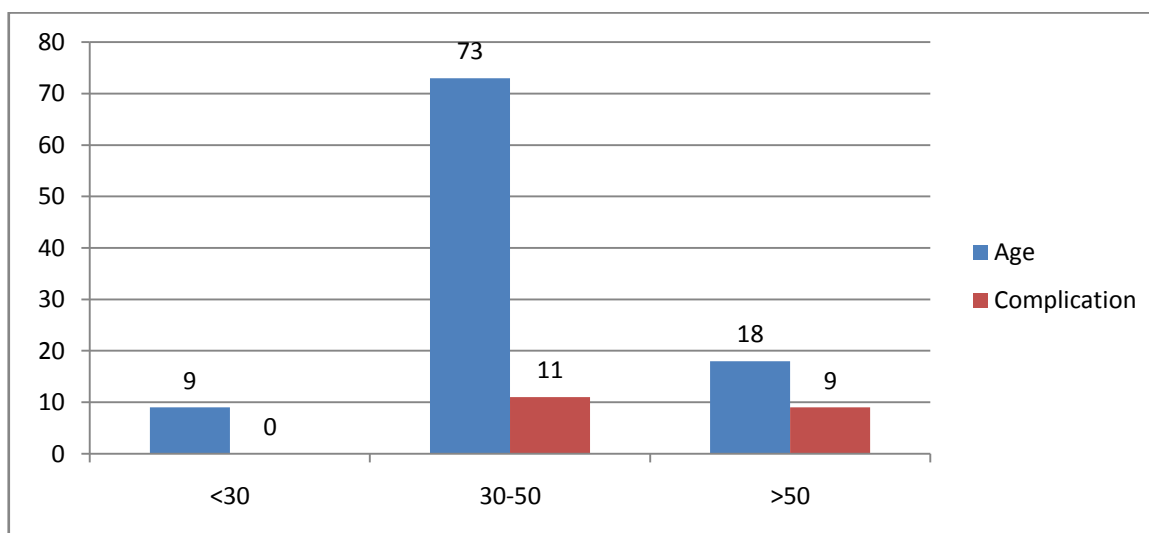
1. Chi- square test

“P” value less than 0.05 was considered statistically significant.

Age distribution of patients:

Out of 100 patients, 9 were below 30 years of age, 73 were in between 30-50 years of age and 18 patients were above 50 years of age(Mean age 41.14). In our study with increasing age percentage of POPCs are also increased.

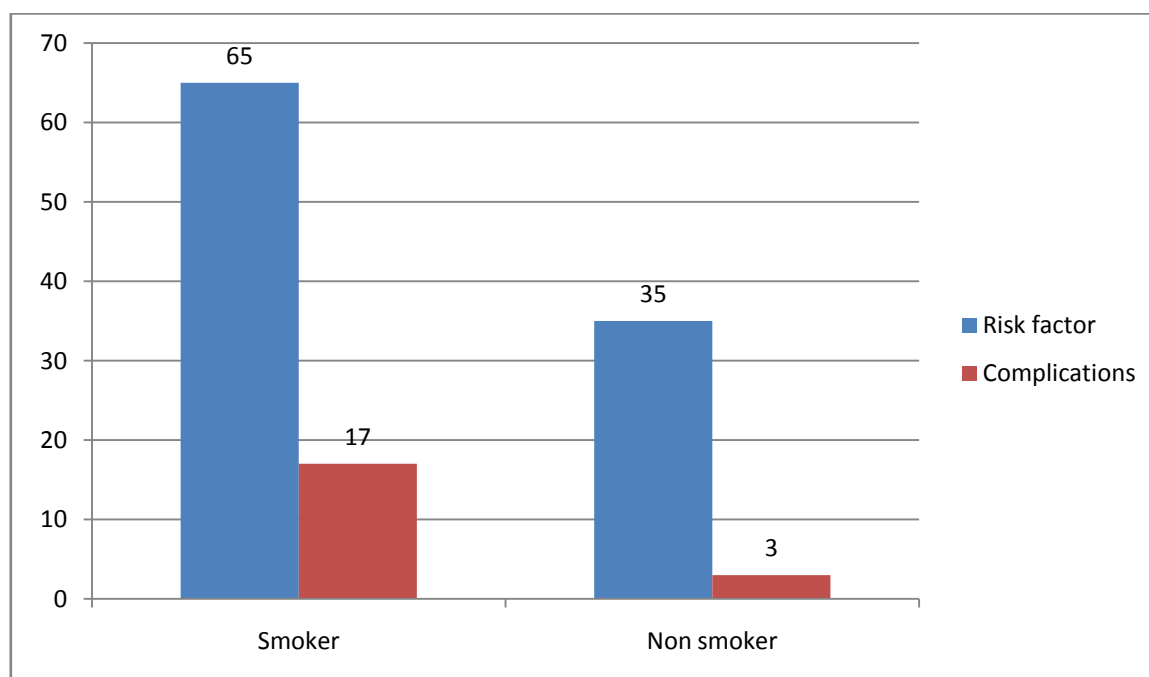
Chi – square tests show ‘p’ value 0.00118, which is significant



Association of patients with smoking:

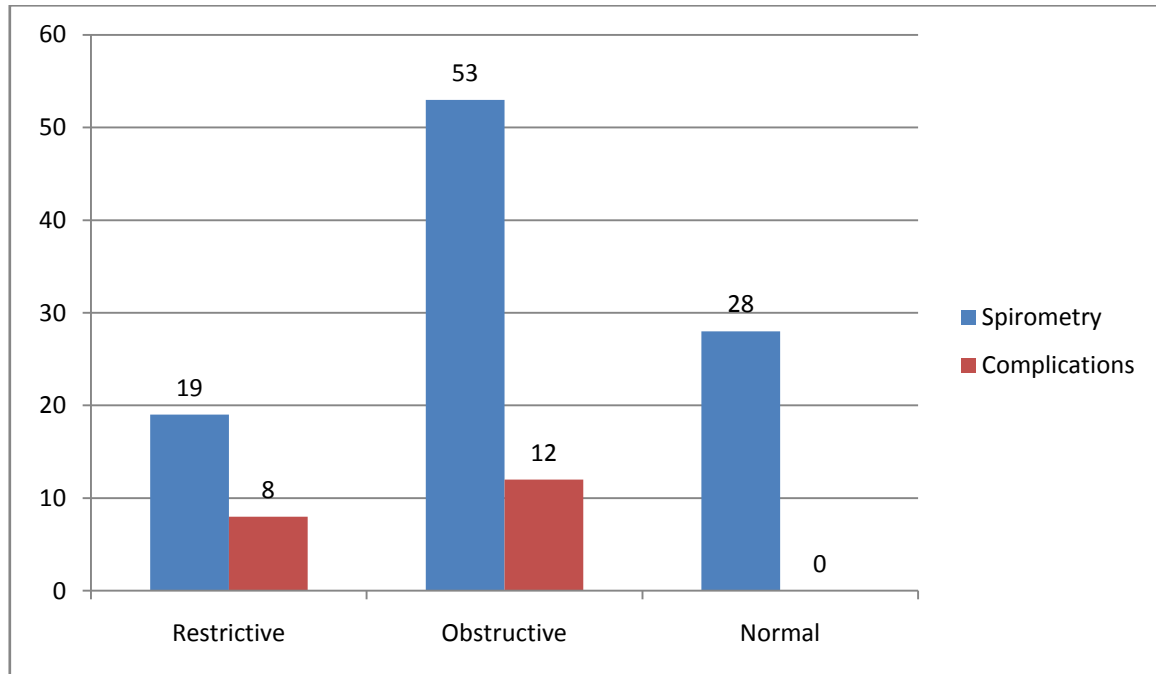
In present study out of all 100 patients, 65 were smokers and 35 were non-smokers. Postoperative complications occurred in 17 out of 65 (26.15%) smokers, 3 out of 35 (8.57%) non- smokers.

On application of Chi-square test ‘p’ value was 0.036032, which shows that significant association occurs between postoperative complication and smoking



Association of patients with spirometry:

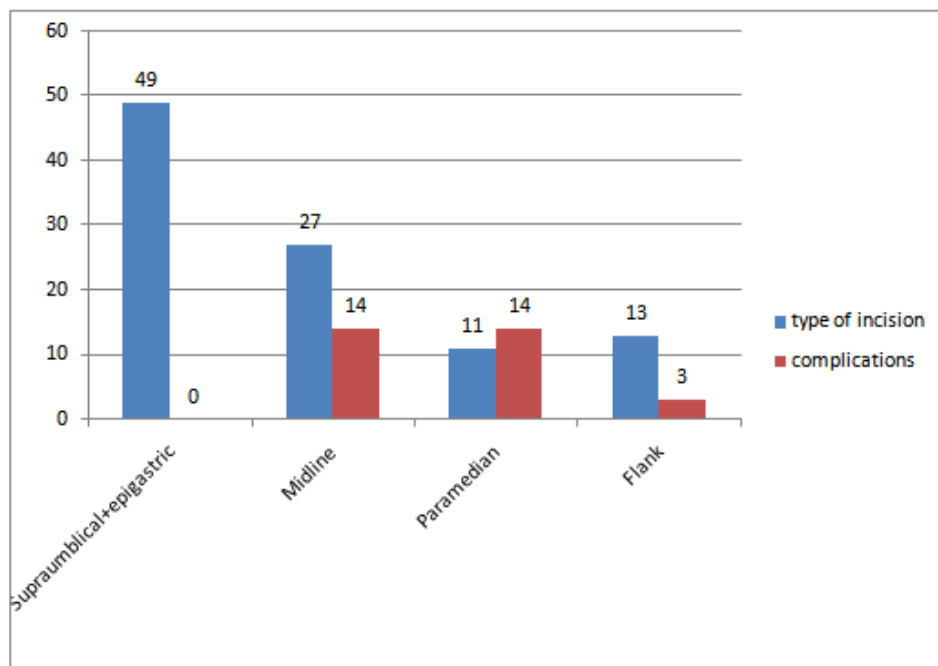
In present study out of all 100 patients, 19 were restrictive pattern, 53 were obstructive and 28 were normal. Post operative pulmonary complication rate was higher in patients with restrictive pattern inspite of lesser number of patients 8 out of 19 (42.10%) than obstructive pattern having greater number of patients 12 out of 53 (22.6%). There were no complications seen in patients who had normal spirometry.



Association of patients with Type of incision:

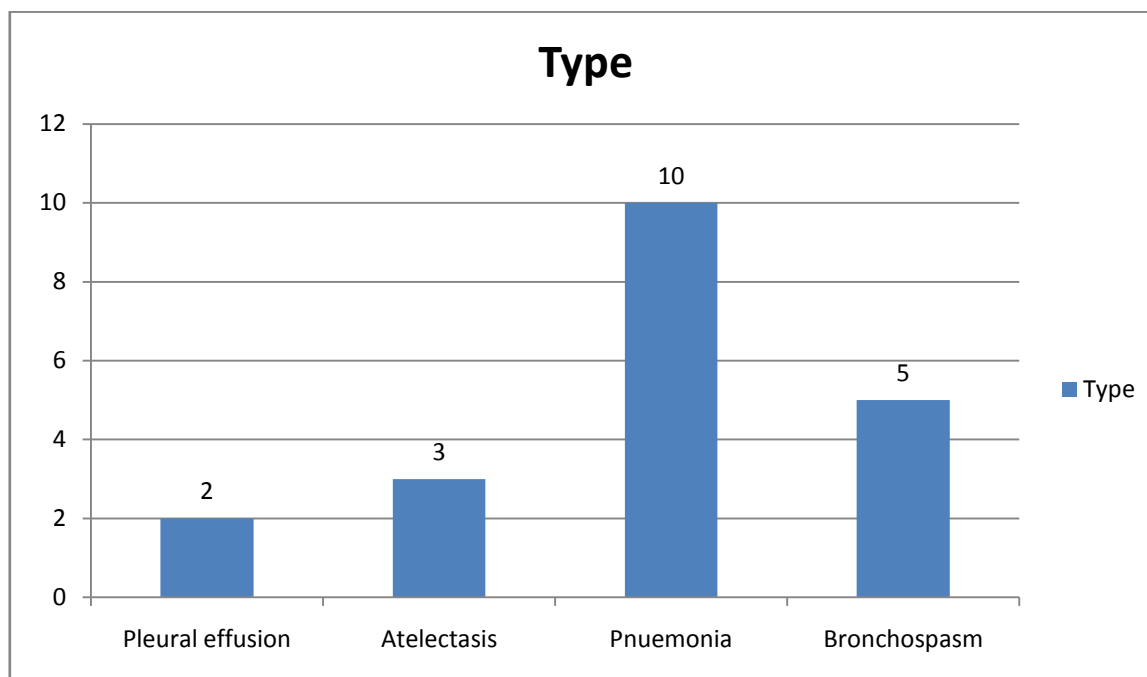
In our study four types of incision was given, 49% had supraumbilical+ epigastric incision, 27% had midline incision, 13% had flank incision compared to 11% who had paramedian incision. Post operative complications was most commonly seen in patients had midline incision(51.85%) followed by paramedian(27.27%) and flank(23.05).

In patients had supraumbilical+epigastric incision no Post operative complications was seen. On application of Chi-square test ‘p’ value was 0.00001, which is significant.



Postoperative complications:

Out of 100 patients ,20 patients had postoperative pulmonary complications(20%). Pneumonia was the most common complication 50% (10/20) followed by Bronchospasm 25% (5/20), Atelectasis 15% (3/20) and pleural effusion 10% (2/20).



V. Conclusion

In present study of 100 patients, 9 patients were below 30 years, 73 were in between 30- 50 years and 18 patients were above 50 years of age. In our study out of 100 patients, 65 were smokers and 35 were non-smokers. Spirometry was performed on 100 patients, out of whom restrictive pattern was seen in 19 patients, obstructive in 53 patients and normal in 28 patients. According to this study, 100 patients were enrolled out of which, 20 patients had POPC’s , out of which 2 had pleural effusion, 3 had atelectasis, 10 had pneumonia, 5 had bronchospasm. In this study , we found that age, smoking, spirometry and type of incision were the risk factors for postoperative complications.

References

- [1]. A Kocabas et al: Value of preoperative spirometry to predict postoperative pulmonary complications. Respiratory medicine.1996; 90: 25-33.
- [2]. Kamleshpatel et al:Post operative pulmonary complications following major elective abdominal surgery: a cohort study.Perioperative Medicine.2016;5:10.
- [3]. Abraham Mathew et al: A study of postoperative pulmonary complications following upper abdominal operations. Indian Journal of Basic and applied medical research.2015;5(1):351-358.
- [4]. BlumenLGet al: Preoperative smoking habits and postoperative pulmonary complications.Chest.1998;113(4):883-889.
- [5]. Bart M.Rademaker et al: Pulmonary function and stress response after Laparoscopic Cholecystectomy: Comparison with subcostal incision and influence of thoracic epidural Analgesia. Anesthesia Analgesic. 1992;75:381-385.

Dr. Ankit Bhardwaj. “A Study to Assess the Prevalence of Post Operative Pulmonary Complications and Associated Risk Factors in Patients Undergoing Elective Upper Abdominal Surgeries In Western Uttar Pradesh”. IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 3, 2019, pp 26-29.