Original Research Article

A Hospital Based Prospective Study to Evaluate Intra-Operative and Post-Operative Complications Among Smokers Under General Anaesthesia

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Abstract

Background: Smoking is well known to be a risk factor forsurgical patients contributing to the development ofintra-operative and postoperative complications. The present hospital based prospective study was conducted to evaluate intra-operative and post-operative complications among smokers under general anaesthesia.**Materials and Methods:**The present hospital based prospective study was conducted to assess Intra-Operative and Post-Operative Complications among Smokers under General Anesthesia. A total of 110 patients were enrolled in the study. Complete demographicdetails of all the patients were obtained. Incidence of both intra-operative and postoperative complications in all the patients was recorded. All the details were recorded in Microsoft excel sheet and were analysed by SPSS software version 21.0. P value < 0.05 was considered as significant.**Results:** The present hospital based prospective study was conducted to assess Intra-Operative and Post-Operative Complications among Smokers underGeneral Anesthesia. A total of 110 patients were enrolled in the study in which 70.90% were males and 29.09% were females.Maximum patients belong to age group 31-40 yrs (39.09%). Minimum patients belong to age group < 30 yrs (10.90%).Intra-operative complications included need for ventilator in 4.54% patients, heart attack in 6.36% patients and requirement of intra-operative analgesia in 9.09% patients. Postoperative complications included impaired wound healing in 4.54% patients and nausea and vomiting in 6.36% patients.**Conclusion:**The present study concluded that Intra-operative complications included need for ventilator in 4.54% patients, heart attack in 6.36% patients and requirement of intra-operative analgesia in 9.09% patients. Postoperative complications included impaired wound healing in 4.54% patients and nausea and vomiting in 6.36% patients.

Keywords: Intra-Operative, Post-Operative, Complications, Smokers, General Anaesthesia.

Introduction

The smoking prevalence in India varies from state to state. In India, annually, about 1 in 10 deaths is projected to be related to smoking in the 2010[1]. The hazard of smoking is not only limited to the general health risks but also make the smokers more vulnerable to various perioperative complications ranging from pulmonary complications to wound healing to cardiovascular events, such as heart attack during hospital stay[2,3]. The link between smoking and postoperative complications is well documented across surgical specialities[4]. Surgical complications occur frequently. One large study documented at least one complication in 17% of surgical patients. Surgery-related morbidity and mortality generally fall into one of three categories: cardiac, respiratory and infectious complicat-ions [5]. The overall risk for surgery-related complications depends on individual factors and the type of surgical procedure.6 Smoking has been associated with increased length of time in intensive care, in recovery from surgery and on the ward.7-10 Despite this, a quarter of patients undergoing surgery continue to smoke up to, and after surgery,[11,12] with advice on smoking cessation varying from surgeon to surgeon[13]. The present hospital based prospective study was conducted to evaluate intra-operative and post-operative complications among smokers under general anaesthesia.

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Materials and methods

The present hospital based prospective study was conducted to assess Intra-Operative and Post-Operative Complications among Smokers under General Anesthesia. Before the commencement of the study ethical approval was taken from the Ethical Committee of the institute and written informed consent was taken from the patients after explaining study to them. A total of 110 patients were enrolled in the study. Current smokers,Patients with current smoking habit from a minimum of 5 years,Patients scheduled to undergo any surgical procedure under general anesthesia were included in the study. Complete demographic details of all the patients were obtained.Incidence of both intra-operative and postoperative complications in all the patients was recorded. All the details were recorded in Microsoft excel sheet and were analysed by SPSS software version 21.0. P value < 0.05 was considered as significant.

Results

The present hospital based prospective study was conducted to assess Intra-Operative and Post-Operative Complications among Smokers under General Anesthesia. A total of 110 patients were enrolled in the study in which 70.90% were males and 29.09% were females. Maximum patients belong to age group 31-40 yrs (39.09%). Minimum patients belong to age group < 30 yrs (10.90%). Intra-operative complications included need for ventilator in 4.54% patients, heart attack in 6.36% patients and requirement of intra-operative analgesia in 9.09% patients. Postoperative complications included impaired wound healing in 4.54% patients and nausea and vomiting in 6.36% patients.

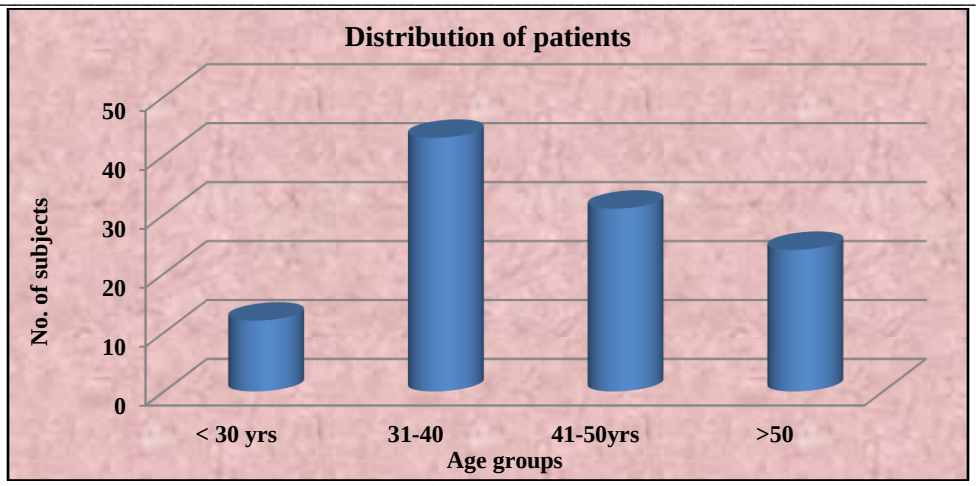

Fig 1: Distribution of patients according to age groups

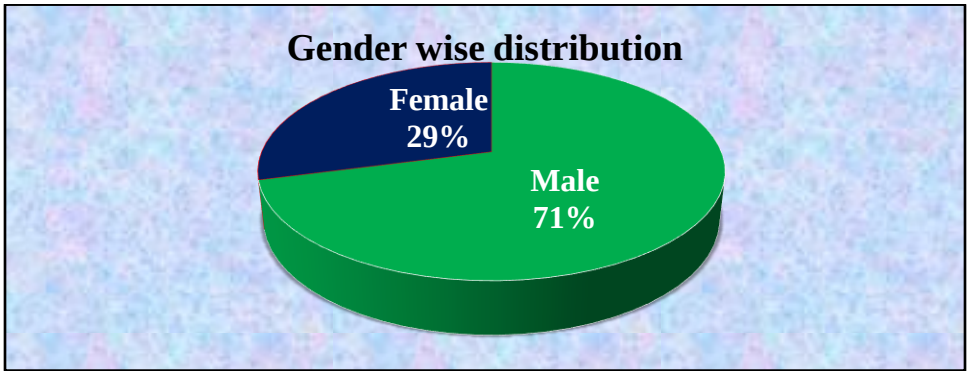

Fig 2: Gender wise distribution of patients

Table 1: Demographic details

Parameters	N (110)	Percentage
Gender		
Male	78	70.90%
Female	32	29.10%
Age group		
< 30 yrs	12	10.90%
31-40	43	39.10%
41-50yrs	31	28.18%
>50	24	21.82%

Table 2: Incidence of intra-operative complications

Intra-operative complications	N(110)	Percentage
Need for ventilator	5	4.54%
Heart attack	7	6.36%
Intra-operative analgesic requirement	10	9.09%

Table 3: Incidence of post-operative complications

Post-operative complications	N(110)	Percentage
Impaired wound healing	5	4.54%
Nausea and vomiting	7	6.36%

Discussion

Smoking has a negative effect on surgical outcome, as the carbon monoxide (CO) and nicotine, inhaled from smoking a cigarette, increases heart rate and blood pressure and the body's demand for oxygen. Nicotine also causes vasoconstriction,14 reducing the blood flow to certain parts of the body. Smoking causes the small airways in the lungs to narrow making them more prone to collapse and leading to increased susceptibility of infection, coughing, pulmonary complications and prolonged mechanical ventilation in smokers[15].

Smoking also inhibits immune responses involved in wound healing and increases the risk of blood clotting[16,17].The present hospital based prospective study was conducted to assess Intra-Operative and Post-Operative Complications among Smokers under General Anesthesia. A total of 110 patients were enrolled in the study in which 70.90% were males and 29.09% were females. Maximum patients belong to age group 31-40 yrs (39.09%). Minimum patients belong to age group < 30 yrs (10.90%).Intra-operative complications included need for ventilator in 4.54% patients, heart attack in 6.36% patients and requirement of intra-operative analgesia in 9.09% patients.Postoperative complications included impaired wound healing in 4.54% patients and nausea and vomiting in 6.36% patients.Turan et al from the Cleveland Clinic, Cleveland, Ohio, conducted an analysis of the American College of Surgeons National Surgical Quality Improvement Program Database of more than 600,000 patients. The results of this important work found that smokers had a higher mortality and increased rates of all cardio respiratory and septic complications[18].Myles **et al** also highlighted that patients with more severe illness are more likely to reduce their consumption or stop smoking, which may influence the incidence of postoperative complications in past smokers from these studies[19]. The association between smoking and major adverse surgical events is biologically plausible. Nicotine induces hyper-tension and tachycardia through its effect on the sympathetic nervous system [20,21]. In addition, carbon monoxide (the concentration of which also bears a dose–response relationship with amount smoked) substitutes oxygen in the molecule of hemoglobin, shifts the oxygen–hemoglobin dissociation curve to the left, and decreases oxygen availability to the tissues.22 The net effect of these interactions impairs oxygen delivery, leading to tissue ischemia. Tobacco use damages cilia, increases mucus production, impairs clearing of secretions, and renders the bronchial tree irritable,23 leading to sputum retention,[24]pneumonia, and respiratory failure.[25] Cigarettes inhibit immune function, resulting in delayed wound healing and infection.[26,27] Smokers have abnormal bone metabolism and may experience delayed fracture healing.[28,29] Smoking has a direct effect on the central nervous system, affecting pain perception[30] and opiate requirements[31].

Conclusion

The present study concluded that Intra-operative complications included need for ventilator in 4.54% patients, heart attack in 6.36% patients and requirement of intra-operative analgesia in 9.09% patients. Postoperative complications included impaired wound healing in 4.54% patients and nausea and vomiting in 6.36% patients.

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