

General Anesthesia Complications in Different Surgeries: A Single Center Study in Bangladesh

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Abstract

Background: General anesthesia is very common anesthetic procedure which is used in several surgical approaches. Without general anesthesia many of these surgeries are lifesaving or life-changing and would not be possible. But all medical procedures are associated with some complications, even when they are performed by experts. The severity and rate of these complications depend on patient's state of health, age or general lifestyle. Though the general anesthesia using is considered safe, but it comes with certain complications. **Aim of the Study:** The aim of this study was to assess the complications of general anesthesia in different surgeries. **Methods:** This was a prospective observational study. The study was conducted in the Department of Anaesthesia, ICU & Pain Medicine, Shaheed Suhrawardy Medical College and Hospital, Dhaka, Bangladesh during the period from January 2019 to December 2019. In total 57 participants in treatment under various department of the mentioned hospital and was prepared for surgery were included as the study subjects. All the demographic as well as clinical data were recorded. As per necessity all data were processed, analyzed and disseminated by using MS Excel and SPSS version 23.0 program. **Results:** As the complications of general anesthesia among our participants, we found somnolence, 'dry mouth/increased thirst' and pain in operated place were found in more than 50% cases separately which were found in 67%, 79% and 82% cases respectively. On the other hand, in 25-50% cases disorder of consciousness (25%), 'weakness and pain of muscles (28%)', 'nausea and vomiting (30%)', headache (33%) and 'sore throat/hoarseness (37%)' were found separately which was noticeable. Besides these, breathing problems, urination problems and feeling cold/chills were observed in some cases. **Conclusion:** Usually, general anesthesia is a safe way for ensuring patient's safety and comfort during surgery, but till now it is associated with some complications which have to be recognized and deal with. Contentious development in the procedure of using general anesthesia is necessary to reduce unwanted complication.

Keywords: General anesthesia, Surgery, Complications, Pain, Unconsciousness.

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INTRODUCTION

The use of general anesthesia is generally harmless, but it may cause some certain risks and complications. General anesthesia needs the patient to have a breathing tube placed so they may be on a ventilator during surgery. This is because general anesthesia medications do not just make the patient unconscious and impotent to feel pain of surgery, they also paralyze the muscles of the body including the muscles which make the lungs work. These

complications range from a prompt perioperative issues like anesthetic anaphylaxis to minor and major post-operative complications. The minor complications are common include throat soreness, hoarseness, feeling cold, somnolence, chills, headache breathing problem, muscles pain, post-operative nausea and vomiting and dental damage. Nausea and vomiting that improves within 24 hours post operation is known as postoperative nausea and vomiting (PONV) [1]. In the postoperative period, it is the most common complaint

except pain. While occurrence is about 30% in all patients, that increases to 70% in high-risk patients [2]. Postoperative nausea and vomiting (PONV) in patients can cause morbidity due to aspiration pneumonia, obstruction, airway dehydration and suture tightening or rupture [3]. It increases costs and prevents early discharge of patients [4]. In a study it was reported that, the major complications of general anesthesia consist of pulmonary, brain damage, delirium, nerve injury, cardiovascular collapse circulatory and neurologic those are unusual complications of general anesthesia. The range of different medications as well as procedures used during general anesthesia and the patient's own general condition may induce an array of these issues. It is very important for nurses to know how to react and observe changes in order to prevent such complications from cause by major damage, further complications and hospital care or even possible death [5] and it is rational to hypothesize that a "stress free" perioperative period may attenuate or prevent any injurious physiologic responses and decrease resultant morbidity [6].

METHODOLOGY

This was a prospective observational study. The study was conducted in the Department of *Aneaesthesia, ICU & Pain Medicine, Shaheed Suharawardy Medical College and Hospital, Dhaka* Bangladesh during the period from January 2019 to December 2019. In total 57 participants in treatment under various department of the mentioned hospital and was prepared for surgery where general anesthesia was used were included as the study population. Before starting the intervention, proper written consents were obtained from all the participants. The whole intervention was conducted in accordance with the principles of human research specified in the Helsinki Declaration [7] and executed in compliance with currently applicable regulations and the provisions of the General Data Protection Regulation (GDPR) [8]. As per the inclusion criteria patients of both the gender, prepared for surgery, patients suitable for using general anesthesia and patients prepared for using general anesthesia for the first time were included in the study. On the other hand, according to the excluding criteria patients of below 4 years of age, most geriatric patients, patients to whom general anesthesia had been used previously and severely ill patients were excluded from

the study. A pre-designed questioner was used for collecting all the necessary demographic and treatment oriented data from the participants. All the treatment procedure and applying anesthesia was directed supervised and monitored by professional surgeons, anesthesiologists, nurses and other professional staffs. As per requirement, all data were processed, analyzed and disseminated by using MS Excel and SPSS version 23.0 program.

RESULTS

In this study, among total 57 participants, 54% were male whereas the rest 46% were female. So male participants were dominating in number and the male-female ratio was 1.2:1. The highest number (n=28) of our patients were from >60 years' age groups which was 38% besides this 20%, 15% and 12% were from 51-60, 41-50- and 31-40- years' age groups respectively which were also noticeable. In analyzing the ASA status of the participants, we observed that, majority of the cases were with ASA 1 status which was 53%. Besides this 33%, 12% and 2% cases were with ASA II, ASA III and ASA IV status respectively. In this study, majority of the cases were with intermediate surgical risk grade which was found in 84% cases. In this intervention, in 47% cases the length of anesthesia was found as 61-120 minutes and in 26% cases that length was observed as 121-180 minutes which were noticeable. In this study in 42%, 33%, 21% and 4% cases surgeries of Gynecology, Orthopedics, 'Ear, nose & throat: ENT' and Oncology were performed by using general anesthesia respectively. As the complications of general anesthesia among our participants, we found somnolence, 'dry mouth/increased thirst' and pain in operated place were found in more than 50% cases separately which were found in 67%, 79% and 82% cases respectively. On the other hand, in 25>50% cases disorder of consciousness (25%), 'weakness and pain of muscles (28%)', 'nausea and vomiting (30%)', headache (33%) and 'sore throat/hoarseness (37%)' were found separately which was noticeable. Besides these, breathing problems, urination problems and feeling cold/chills were observed in some cases. In analyzing the complications among several age groups, we observed that, the frequencies of complications were more frequent in aged patients' groups.

Table 1: Characteristics of the study patients (N=57)

Characteristic	n	%
Gender		
Male	31	54%
Female	26	46%
ASA status		
ASA I	30	53%
ASA II	19	33%
ASA III	7	12%
ASA IV	1	2%

Characteristic	n	%
Surgical risk grade		
Minor	2	4%
Intermediate	48	84%
Major	7	12%
Length of anesthesia		
60 min.	6	11%
61-120 min.	27	47%
121-180 min.	15	26%
181-240 min.	5	9%
> 240 min.	4	7%
Surgical specialty		
Gynecology	24	42%
Orthopedics	19	33%
Ear, nose & throat	12	21%
Oncology	2	4%

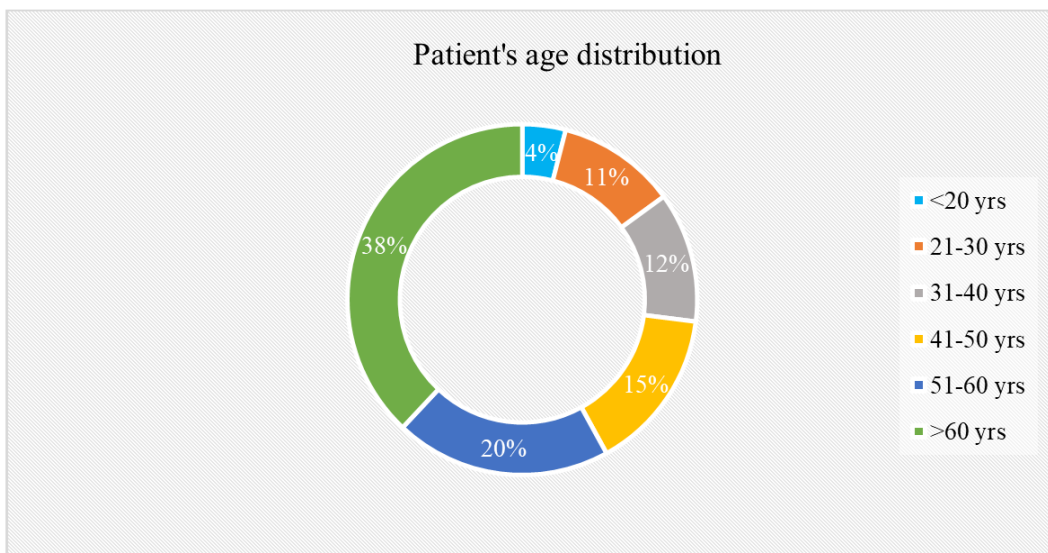


Figure I: Ring chart showed age wise patients (N=57)

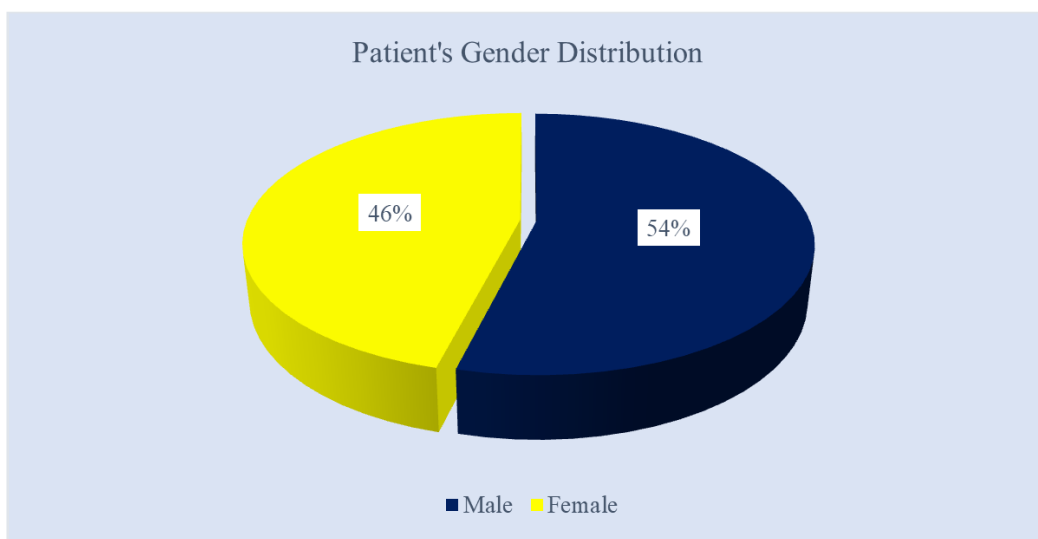


Figure II: Pie chart showed gender wise patients (N=57)

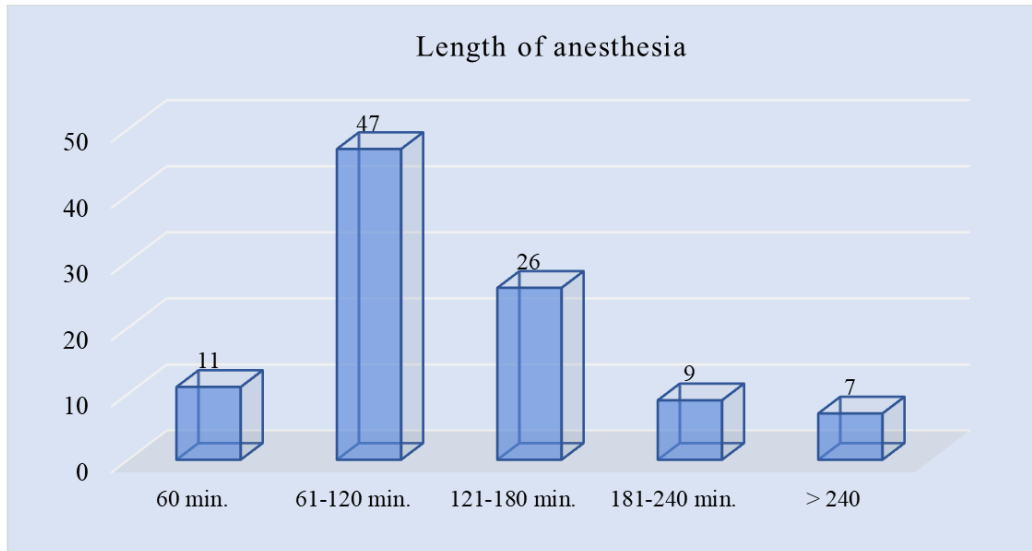


Figure III: Bar chart showed Length of anesthesia of the patients (N=57)

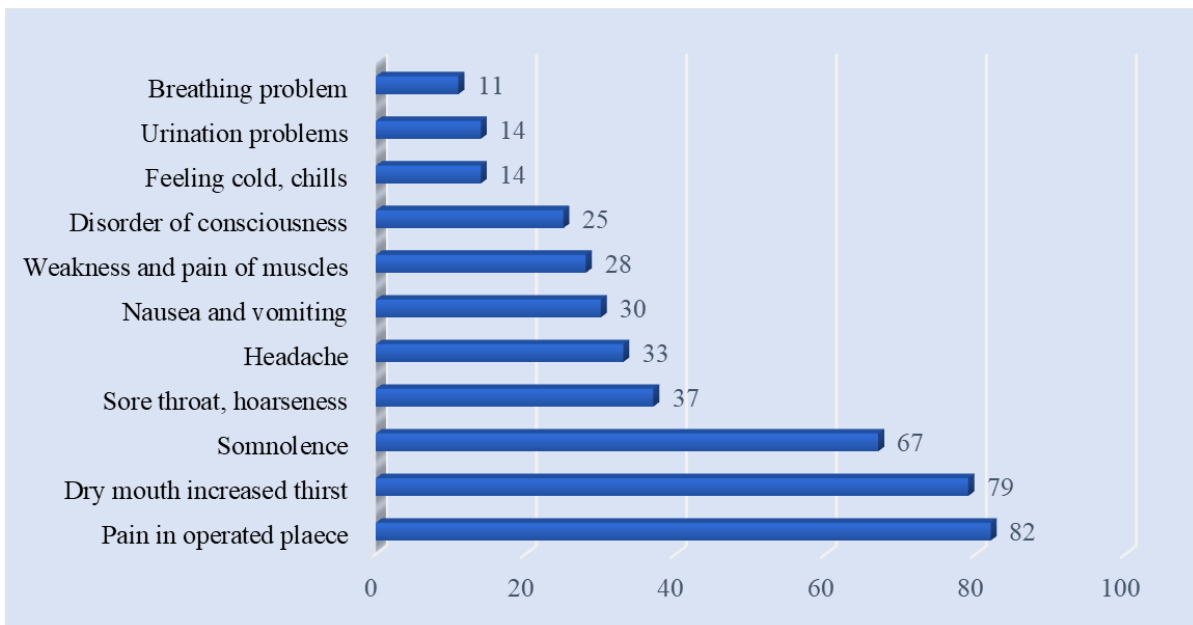


Figure IV: Bar chart showed complications of general anesthesia among participants (N=57)

Table 2: Complications of general anesthesia in different age groups (N=57)

Complications	<20 yrs.		20-30 yrs.		31-40 yrs.		41-50 yrs.		51-60 yrs.		60< yrs.	
	(n=3)		(n=8)		(n=9)		(n=11)		(n=15)		(n=28)	
	n	%	n	%	n	%	n	%	N	%	n	%
Pain in operated place	2	67%	7	88%	6	67%	9	82%	9	60%	14	50%
Dry mouth/increased thirst	2	67%	7	88%	7	78%	8	73%	9	60%	12	43%
Somnolence	1	33%	6	75%	6	67%	7	64%	8	53%	10	36%
Sore throat, hoarseness	1	33%	2	25%	4	44%	3	27%	5	33%	6	21%
Headache	0	0%	3	38%	5	56%	2	18%	4	27%	5	18%
Nausea and vomiting	1	33%	1	13%	2	22%	3	27%	5	33%	5	18%
Weakness and pain of muscles	0	0%	4	50%	3	33%	2	18%	4	27%	3	11%
Disorder of consciousness	1	33%	0	0%	3	33%	3	27%	2	13%	5	18%
Feeling cold, chills	0	0%	0	0%	2	22%	1	9%	2	13%	3	11%
Urination problems	0	0%	1	13%	1	11%	3	27%	1	7%	2	7%
Breathing problem	1	33%	0	0%	2	22%	0	0%	3	20%	0	0%

DISCUSSION

The aim of this study was to assess the complications of general anesthesia in different surgeries. In this study, among total 57 participants, 54% were male whereas the rest 46% were female. So male participants were dominating in number and the male-female ratio was 1.2:1. The highest number (n=28) of our patients were from >60 years' age groups which was 38% besides this 20%, 15% and 12% were from 51-60, 41-50- and 31-40-years' age groups respectively which were also noticeable. Uncomfortable postoperative ailments are heightened by the awakening of the patient with the tube in the throat (in the case of patients after endotracheal intubation) [9]. In analyzing the ASA status of the participants, we observed that, majority of the cases were with ASA I status which was 53%. Besides this 33%, 12% and 2% cases were with ASA II, ASA III and ASA IV status respectively. In this study, majority of the cases were with intermediate surgical risk grade which was found in 84% cases. In this intervention, in 47% cases the length of anesthesia was found as 61-120 minutes and in 26% cases that length was observed as 121-180 minutes which were noticeable. Despite improvement in the understanding of the mechanisms of pain formation and the introduction of modern, safe analgesics and anesthesia techniques, the level of post-operative pain relief is not sufficient [10]. In a study it was reported that, in using general anesthesia, effective control should be multidimensional [11]. Responsibility for providing proper care in pain management after surgery depends heavily on the nurse [12]. As the complications of general anesthesia among our participants, we found somnolence, 'dry mouth/increased thirst' and pain in operated place were found in more than 50% cases separately which were found in 67%, 79% and 82% cases respectively. On the other hand, in 25% cases disorder of consciousness (25%), 'weakness and pain of muscles (28%)', 'nausea and vomiting (30%)', headache (33%) and 'sore throat/hoarseness (37%)' were found separately which was noticeable. Effective pain relief reduces the risk of further complications like nausea-vomiting, anxiety, thromboembolic processes or an increase in blood pressure [13]. Patients of this study reported a feeling of cold and/or chills in the post-operative room, immediately after the procedure. There were also measures to control the occurrence of hypothermia in patients [14]. In a study it was reported that, female was the most exposed to post-operative nausea and vomiting [15]. All the findings of this study may be helpful in further similar studies.

Limitation of the Study

This was a single centered study with small sized samples. Moreover, the study was conducted at a very short period of time. That's why; the findings of this study may not reflect the exact scenario of the whole country.

CONCLUSION & RECOMMENDATION

Usually, general anesthesia is a safe way for ensuring patient's safety and comfort during surgery, but till now it is associated with some complications which have to be recognized and deal with. Contentious development in the procedure of using general anesthesia is necessary to reduce unwanted complication. For getting more specific information we would like to recommend for conducting more studies with larger sized sample.

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