



# Anaesthesia Associated Peri-Operative Adverse Effects During In-Patient and Outpatient Procedures.

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## KEYWORDS

anaesthesia,  
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## ABSTRACT:

**Background:** This research had been carried out to evaluate anaesthesia associated peri-operative adverse effects.

**Material and methods:** This study included a total of 100 anaesthetic operations. The participants were requested to provide consent. The study included respondents who willingly provided consent, while those who were uninterested in participating or giving consent were eliminated. The negative occurrences had been observed. The statistical analysis was performed using the SPSS program.

**Results:** The predominant adverse event encountered was perioperative cardiac arrest, which was observed in 21 individuals, followed by unexpected difficult airway, which was observed in 14 individuals. Perioperative pulmonary aspiration was noted in 12 individuals. Stroke/coma was observed in 5 individuals, and malignant hyperthermia was observed in 1 individual. A total of 53 complications were documented.

**Conclusion:** The predominant perioperative complication observed was cardiac arrest, succeeded by instances of unexpectedly challenging airway management. Additional complications included pulmonary aspiration, stroke or coma, and malignant hyperthermia.

## Introduction

The primary goal of general anesthesia is to render a patient unconscious and unable to feel painful stimuli while controlling autonomic reflexes. There are five main classes of anesthetic agents: intravenous (IV) anesthetics, inhalational anesthetics, IV sedatives, synthetic opioids, and neuromuscular blocking drugs. Each class has particular strengths and weaknesses, and being familiar with these characteristics, as well as crucial side effects, can prove beneficial for the surgical team.<sup>1</sup>

The World Health Organization (WHO) international classification defines patient safety as the minimization of the risk of avoidable harm related to healthcare. A common focus in research on this topic is the occurrence

of adverse events. The WHO World Patient Safety Alliance terminology describes an adverse event as harm to a patient linked to healthcare, specifically an injury incident categorized as an event or circumstance that could have led to or resulted in avoidable harm to a patient.<sup>2</sup>

A study performed in Spain (Ibeas), which assessed the prevalence of adverse events occurring in hospital settings of various institutions in five Latin American countries, defined adverse event as "an event that caused harm to a patient and was more associated with healthcare than with the patient's underlying disease".<sup>3</sup>

The body of research concerning adverse events linked to anesthesia indicates a trend toward a decline in complications associated with anesthesia and a reduction



in perioperative mortality rates. A systematic review examining perioperative mortality among patients receiving general anesthesia has revealed a significant decrease in both perioperative and anesthesia-related mortality over the past five decades, especially in developed nations. This finding is further supported by more recent investigations, including a study conducted in Brazil.<sup>4-6</sup>

This research had been carried out to evaluate anaesthesia associated peri-operative adverse effects.

### Material and methods

This study included a total of 100 anaesthetic operations. The participants were requested to provide consent. The study included respondents who willingly provided consent, while those who were uninterested in participating or giving consent were eliminated. The negative occurrences had been observed. The statistical analysis was performed using the SPSS program.

### Results

**Table 1: Complications following anaesthesia.**

Complications	Number of cases	Percentage
Perioperative cardiac arrest	21	21%
Unexpected difficult airway	14	14%
Perioperative pulmonary aspiration	12	12%
Stroke/coma	05	05%
Malignant hyperthermia	01	01%
Total	53	53%

The predominant adverse event encountered was perioperative cardiac arrest, which was observed in 21 individuals, followed by unexpected difficult airway, which was observed in 14 individuals. Perioperative pulmonary aspiration was noted in 12 individuals. Stroke/coma was observed in 5 individuals, and malignant hyperthermia was observed in 1 individual. A total of 53 complications were documented.

### Discussion

It has been calculated that in 2010, nearly one-third of all global deaths were due to conditions necessitating

surgical intervention, surpassing the combined deaths from HIV, tuberculosis, and malaria. A 2015 report by The Lancet Commission on Global Surgery emphasized the necessity of universal access to safe, affordable surgical and anesthetic care. Perioperative mortality has been utilized as a measure of surgical and anesthetic safety; while perioperative mortality has decreased over the past 50 years, low and middle-income countries (LMICs) face a two to four-fold higher risk of perioperative mortality.

Surgical patients in Africa experience significantly higher mortality rates despite having a lower risk profile and undergoing less complex surgeries. Anaesthesia-related mortality in sub-Saharan African countries exceeds that of high-income countries, with improvements in anesthesia services identified as a priority in global health.<sup>7-10</sup>

This research had been carried out to evaluate anaesthesia associated peri-operative adverse effects.

In this study, the predominant adverse event encountered was perioperative cardiac arrest, which was observed in 21 individuals, followed by unexpected difficult airway, which was observed in 14 individuals. Perioperative pulmonary aspiration was noted in 12 individuals. Stroke/coma was observed in 5 individuals, and malignant hyperthermia was observed in 1 individual. A total of 53 complications were documented.

**Burgess A et al (2011)<sup>11</sup>** in this prospective observational study which was carried out over six-weeks in March to April 2019 in an Ethiopian tertiary referral hospital, included direct observations in the operating room and recording of any anaesthesia-related adverse events occurring during the perioperative period. Fifty surgical cases were observed during weekday daytime hours. Sixteen anaesthesia-related adverse events were observed in 12 patients, including six elective cases and six emergencies, an adverse event rate of 32% (n=16), affecting 24% (n=12) of patients. Most incidents occurred in infants less than one-year-old and those between 11-20 years (31.3%; n=5 each) and those undergoing general anaesthesia (66.7%; n=8), particularly during the induction phase (50%; n=8), the most common event being prolonged desaturation (31.3%; n=5). Most events were considered to contribute a low level of harm (56.3%; n=9). There were no intra-operative mortalities. This study presents evidence of a



higher rate of adverse events during anaesthesia at a tertiary referral hospital in Ethiopia, than reported in current literature from LMICs. There is potential for large volume data to be produced and learnt from with a reporting system in place in this setting. The most common event was desaturation detected by pulse oximetry, particularly in paediatric surgery.

## Conclusion

The predominant perioperative complication observed was cardiac arrest, succeeded by instances of unexpectedly challenging airway management. Additional complications included pulmonary aspiration, stroke or coma, and malignant hyperthermia.

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