

A Retrospective study to determine the incidence of intraoperative hypotension during routine anesthesia management of ASA III and IV adult surgical patients

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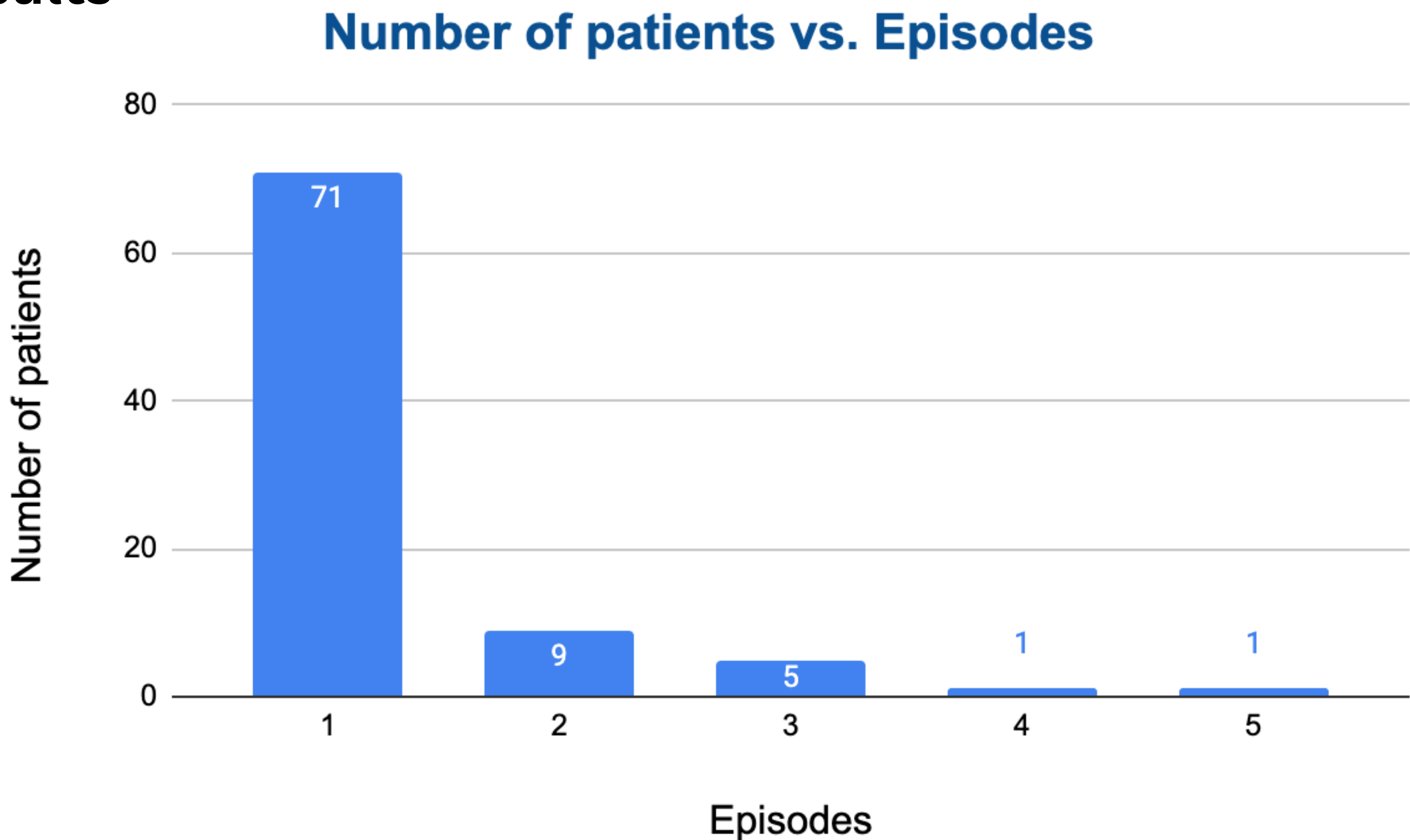
Background

- Intraoperative hypotension has been shown to be associated with increased cardiac complications in the perioperative period and beyond.
- Studies demonstrate that deviations from normal arterial BP, particularly a mean arterial pressure (MAP) below 65 mmHg, significantly increases postoperative complications such as delirium, kidney impairment, myocardial ischemia, and mortality.
- Injury is directly correlated with severity and duration of hypotensive episodes, particularly in ASA physical status III-V patients (1).
- Literature review has shown the incidence of intraoperative hypotension (below a mean of 65 mmHg for greater than 10 minutes) to be 19.2% and 31.3% (2, 3).
- We aim to provide quantitative data on the incidence of intraoperative hypotension in adult ASA III-IV patients at our institution.

Methods

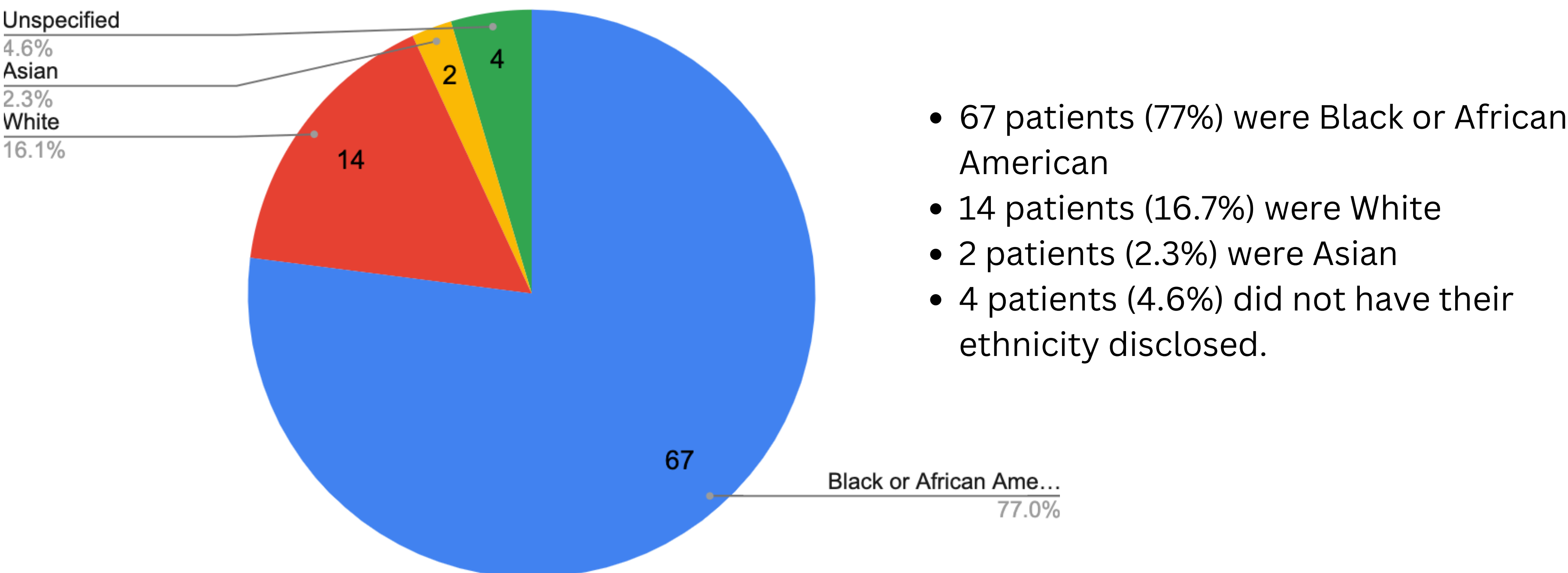
- This is a cross-sectional, descriptive, retrospective single-center study to determine the incidence of intraoperative hypotension by examining the electronic hemodynamic records of ASA III and IV patients undergoing surgery from March 1st, 2023 to August 31st, 2023.
- A commonly used absolute number of MAP of 65 mmHg and lower occurring for 10 minutes or longer was used to define one episode.
- A cumulative time of hypotension was determined by adding all episodes of hypotension during the whole surgery.
- Patient characteristics, including age, medications, height, weight, ethnicity, BMI, comorbidities, and anesthetic type, were collected.
- Exclusions included pediatric patient cases and obstetric non-operative procedures.

Results



- After analyzing 1,510 patient charts meeting inclusion criteria, 87 patients (5.8%) experienced intraoperative hypotension.
- Of these patients, 71 patients (81.6%) experienced one episode, 9 patients (10.3%) experienced two episodes, 5 patients (5.7%) experienced 3 episodes, 1 patient (1.2%) experienced 4 episodes and 1 patient (1.2%) experienced 5 episodes.
- These episodes averaged 21 minutes and ranged from 10 to 160 minutes.

Racial Distribution of Patients with Intraoperative Hypotension



- 67 patients (77%) were Black or African American
- 14 patients (16.7%) were White
- 2 patients (2.3%) were Asian
- 4 patients (4.6%) did not have their ethnicity disclosed.

Discussion

- Our incidence of intraoperative hypotension appears to be significantly lower than that reported in other studies.
- This lower incidence may be characteristic of the patient population our institution serves. Our patients, specifically, the African American population, which constitutes a significant portion of our cohort, is known to have higher prevalence of hypertension compared to other demographic groups. It is likely that these higher baseline MAPs prevent a decrease below 65 mmHg in a larger percentage of patients.
- Additionally, it is highly likely that our anesthesia team's careful management of intraoperative blood pressure contributes to the significantly lower incidences we are observing.
- This study establishes a baseline measurement of hypotension incidence at our institution.
- Our goal is to reduce this incidence further through our current project utilizing prophylactic vasoconstrictor therapy.

References

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