

Arterial Hypertension in Surgery: Analysis of Anesthetic Practices in an Algerian University Hospital Center

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Abstract

Original Research Article

Introduction: Arterial hypertension is a common comorbidity in patients during the perioperative period. Its management poses a challenge in anesthesia practice. This study aims to evaluate the anesthetic management modalities of hypertensive patients at Bab El Oued University Hospital, compared to international recommendations. **Methods:** A descriptive monocentric study conducted at Bab El Oued University Hospital over a one-month period. Data collected included patient characteristics, hypertension history, preoperative assessment, and perioperative management. **Results:** Among the 32 included patients, 53.1% experienced morbidity/mortality related to hypertension. Etiological research and cardiac evaluation were not systematic (65.6% and 78.1%, respectively). Preoperative blood pressure targets followed recommendations in 53.1% of cases. Management of perioperative hypertensive peaks was in line with recommendations, but premedication was more frequently used than recommended. **Discussion:** This study highlights discrepancies from international recommendations in the anesthetic management of hypertensive patients at Bab El Oued University Hospital. Improvements in etiological and cardiac assessment, as well as better monitoring of blood pressure targets, are needed. More judicious use of premedication would also be beneficial. **Conclusion:** The management of hypertensive patients at Bab El Oued University Hospital has shortcomings. Continuous education of practitioners on best practices could contribute to improving the quality of care.

Keywords: Arterial Hypertension, Perioperative Period, Anesthetic Management, Recommendations, Practices.

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INTRODUCTION

Arterial hypertension is a common comorbidity among patients undergoing surgery. Its global prevalence is estimated at 30 to 45% among adults [1]. In Algeria, many hypertensive patients presenting for anesthesia consultation are unfortunately poorly controlled, undiagnosed, or untreated [2]. This issue represents a real challenge in the perioperative management of these patients.

Indeed, poorly controlled arterial hypertension can have a significant impact on the risks of perioperative complications [3, 4]. A careful assessment of the patient's blood pressure status and an adaptation of the anesthetic strategy are essential to optimize care and patient safety.

It is in this context that this study conducted at Bab El Oued University Hospital is situated. Its objectives were to determine the anesthetic management modalities of hypertensive patients and to assess the

extent to which recent international recommendations were applied in this institution. Such an analysis will identify areas for improvement for better management of this at-risk population.

METHODS

This was a descriptive monocentric study conducted at Bab El Oued University Hospital over a period of one month. Data was collected retrospectively from the medical records of hypertensive patients managed by the Department of Anesthesia and Intensive Care.

The Collected Information Included:

- Demographic characteristics of the patients (age, gender, body mass index).
- History of hypertension (duration of evolution, current antihypertensive treatments, blood pressure control).

Preoperative Assessment Elements:

- Etiological investigation of hypertension (performed complementary exams).
- Evaluation of cardiovascular impact (ECG, cardiac ultrasound, etc.).
- Identification of associated cardiovascular risk factors.

Perioperative Management Modalities:

- Preoperative blood pressure targets.
- Management of antihypertensive treatments.

Choice of Premedication

Management of perioperative blood pressure complications (hypertensive episodes, hypotension).

This data collection allowed for the analysis of anesthetic management practices for hypertensive patients within this university hospital, comparing them to current international recommendations.

RESULTS

Among the patients included, 53.1% experienced morbidity/mortality related to hypertension. In 31.1% of cases, hypertension was discovered incidentally. Perioperative hypertensive peaks were mainly attributed to stress/anxiety (59.4%) and pain (12.5%). The blood pressure target was <140/90 mmHg in 53.1% of cases, but < target in 21.9% (diabetes, high-risk surgeries). Etiological research was conducted in 65.6% of cases, and all had risk factors. Evaluation of left ventricular function was mainly done by clinical criteria, ECG, and echocardiography (78.1%). Premedication was mandatory in 56.3% of cases, based on hydroxyzine (75%) and midazolam (33.3%). In case of hypertensive peak, 87.5% of practitioners stopped painful stimulation and administered antihypertensive drugs.

DISCUSSION

The results of our study conducted at Bab El Oued University Hospital highlight some discrepancies from international recommendations. Etiological research on hypertension and evaluation of cardiac repercussions are not systematic (65.6% and 78.1% respectively). Moreover, preoperative blood pressure targets do not always follow recommended thresholds, especially in diabetic patients or those undergoing certain high-risk surgeries [5].

Some studies have shown the usefulness of systematic echocardiography in hypertensive patients, especially when hypertension is severe or unstable [2]. Indeed, echocardiography allows the assessment of left ventricular function, the presence of wall hypertrophy, and other cardiac abnormalities that may impact the anesthetic management [7]. A thorough evaluation of cardiovascular repercussions is crucial to adapt the anesthetic strategy.

Regarding therapeutic management, our results show compliance in the management of antihypertensive treatments during perioperative hypertensive peaks. However, the use of systematic premedication was more frequent than recommended in some situations [6]. Among the drugs used, hydroxyzine and midazolam were the most commonly prescribed, although other options such as alpha-2 agonists or beta-blockers could be considered depending on the individual needs of the patient [8].

Another issue raised by our study is the late detection of arterial hypertension, with nearly a third of cases incidentally discovered preoperatively. An early assessment of the patient's blood pressure status, from the anesthesia consultation, would allow better optimization of blood pressure control before surgery [9]. This would help reduce perioperative complications related to poorly controlled hypertension.

Finally, the high proportion of patients experiencing morbidity/mortality directly attributable to arterial hypertension (53.1%) emphasizes the importance of adapted and rigorous anesthetic management of this common comorbidity [10]. Continuous education of practitioners on the latest recommendations and best practices in the field could improve the quality of care.

CONCLUSION

The results of this study conducted at Bab El Oued University Hospital show that the anesthetic management of hypertensive patients presents discrepancies from international recommendations. Systematic etiological research on hypertension and a thorough evaluation of cardiovascular repercussions are not always performed. Moreover, preoperative blood pressure targets do not always comply with recommended thresholds, especially in high-risk patients.

Regarding treatment, the management of perioperative hypertensive peaks seems appropriate, but the use of premedication is sometimes excessive. These results underline the importance of continuous education of practitioners on the latest recommendations and best practices in the anesthetic management of hypertensive patients. Improving these different aspects would optimize the safety and quality of perioperative care for this at-risk population.

Limitations: Monocentric study with a small sample size, with possible missing data in medical records.

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