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Critically Ill Patients in The Emergency Department: Incidence of unconsciousness

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ABSTRACT

Introduction: Critically ill or injured patients can be spared the high incidence of decreased awareness of entering an emergency room that is frequently associated with involvement in emergencies.

Method: The emergency department (ED) of General Hospital Indonesia was the site of this prospective, observational cohort study. We comprised all consecutive patients admitted to the emergency department from February 15th to March 16th, 2019.

Results: Nineteen patients (4.5%) required airway management, while 45 patients (10.7%) necessitated ICU admittance. In total, 422 patients required airway management. The anesthesiology department received 130 emergency patient visits (30.8%) that were referred due to loss of consciousness. In general, this investigation identified 234 non-surgical emergency cases (55.5%) and 188 emergency surgery cases (44.5%). 71 cases (37.8%) of the 130 patients with the most loss of consciousness required emergency surgery. Patients who experience loss of consciousness are at risk for ICU admission, airway management, pain management, and CVC installation, as evidenced by p values (0.001) that are less than 0.05.

Conclusion: The prevalence of loss of consciousness was 30.8% (130), and patients experiencing loss of consciousness are risk factors for ICU admission, airway treatment, pain management, and central venous catheter insertion.

Keywords

Unconsciousness; Critical Illness; Emergency Department

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INTRODUCTION

More than 6% of all emergency room admissions are patients who are reported to have lost consciousness and are brought to the hospital. Loss of consciousness is not always immediate; a lucid period of several minutes may occur between the onset of neurological deterioration and the injury [1].

Perception, attention, working memory, declarative memory, cognition, mental imagery, motivation, emotion, and language are all intimately connected to consciousness [2]. 822 patients who participated in the Framingham Heart Study from 1971 to 1998 reported syncope, as demonstrated by Soteriades et al. (2002), who assessed 7814 study participants.The first report of syncope occurred at a rate of 6.2 per 1000 person-years. The most frequently identified causes were vasovagal (21.2 percent), cardiac (9.5 percent), and orthostatic (9.4 percent); the cause was unknown for 36.6 percent [1].

Critically ill or injured patients can be spared the high incidence of decreased awareness of entering an emergency room that is frequently associated with anesthetic involvement in emergencies. Nevertheless, it has the potential to elevate mortality rates if executed incorrectly. Emergency anesthesia and ventilation support are advantageous in conditions such as severe acute respiratory insufficiency. The event is more advantageous to patients than noninvasive ventilation support with a respirator or a continuous positive airway air helmet in any location. Furthermore, patients who have sustained traumatic brain injury with a Glasgow Coma Scale

(GCS) score of 9 may benefit from prehospital emergency anesthesia, which can help alleviate respiratory failure through definitive airway intubation. This method is employed by the emergency emergency team [3].

METHOD

We performed a prospective observational cohort study at the emergency department of General Hospital in Indonesia. We examined all consecutive patients admitted to the emergency department between February 15 and March 16, 2019. The requirement for informed consent was eliminated following the approval of this study by the institutional review board. We collected demographic information by a paper form, encompassing age, gender, kind of emergency, and the placement of a double lumen and central venous catheter (CVC). We collected clinical data using a paper form that encompassed the following information: age, gender, ICU admission, level of consciousness as assessed by the Glasgow Coma Scale (GCS), and airway management. We calculated Upon admission to the ICU, we calculate the APACHE II score to estimate the patient's mortality risk and measure the existence and severity of pain using either the Numerical Rating for Pain Scale (NRP) or the Behavioral Pain Scale (BPS), depending on whether mechanical ventilation is employed. [4]. If the response to any of the subsequent inquiries is positive, the requirements for intubation are met: Is the patency or protection of the airway compromised? Is there a deficiency in oxygenation or ventilation? Is intubation anticipated according to the projected clinical course? [5].

We conducted statistical analyses using the Statistical Package for Social Sciences software (SPSS version 25.0). The Kolmogorov-Smirnov test was employed to assess the distribution of variables. We present numerical variables as the mean and standard deviation (SD). Nominal variables are expressed as percentages. Group differences were evaluated using the Chi-square test, Fisher's exact test, Student's t-test, or Mann-Whitney U test, as applicable. Univariate and multivariate logistic regression analyses were employed to determine factors correlated with loss of consciousness.

RESULTS

During the period of study data collection, 510 patients were hospitalized in the ER, and 80 patients were excluded from this study because of missing medical record data. This study included 422 patients. The mean age was 41.65±19.5 years old, and 244 (57.8%) were male.

A total of 422 patients required airway management, accounting for 4.5%, while 45 cases (10.7%) required admission to the ICU. The anesthesiology department received referrals for 130 patients (30.8%) who had lost consciousness during their emergency visits. Cases requiring management pain were 73 (17.3%), with the highest number being patients with no loss of consciousness (72 cases, 98.Out of the 422 cases that required the installation of a CVC, 50 cases (11.8%) and 15 cases (30.0%) involved patients who lost consciousness. Overall, this study identified 234 non-surgical emergency cases (55.5%) and 188 cases of emergency surgery (44.5%). Out of the 130 patients who experienced the most loss of consciousness, 71 cases (37.8%) involved emergency surgery. 8%). The incidence of loss of consciousness was 30.8% (130), and patients with this condition are at risk for ICU admission, airway management, pain management, and CVC installation, with p values of less than 0.05. We identified several significant differences between patients with loss of consciousness after reviewing the potential risk factors and clinical characteristics under investigation in the current study; more specifically, we found that patients with loss of consciousness required ICU admission, airway management, pain management, and CVC installation. Patients with loss of consciousness are more likely to be older and of male sex.

DISCUSSION

Consciousness is a complex notion that may be categorized into two primary components: the level of consciousness and the content of consciousness. The reticular activating system comprises neurons located in the upper brainstem and thalamus that collaboratively maintain bodily alertness. It is linked to both hemispheres of the brain. Patients experiencing an episode of altered awareness and subsequently admitted to

the hospital for assessment are prevalent [6]. The study participants were predominantly older and primarily male. This study's findings contrast with those of Grudzen et al. (2012), who identified that the majority of patients entering emergency departments are female and generally older. The incidence of loss of consciousness in this study was notably high, reaching 30.8%. Patients in the research require airway management or intubation around 78.9% of the time. The findings of this study contrast with those of Grudzen et al. (2012), who reported intubation rates of approximately 11% in instances of minor intubation. Furthermore, treatment pain requirements in this study indicate low referral rates of approximately 17.3%, in contrast to the 53% reported by Grudzen et al. (2012) [6].

Lorenzo et al. (2016) reported on 669 emergency room cases, revealing an average age of 40.2 ± 17.3 years, consistent with this study, which also noted a predominance of emergency surgeries. This study's results demonstrate a correlation between ICU admission and loss of consciousness. The findings of this study align with Al-Qahtani (2017), indicating that around 25% of the 940 patients who presented to the emergency department did so during the first 6 hours. In this research of 422 patients, 10.7% required ICU care, and among those, 80% experienced loss of consciousness.[6]

CONCLUSION

The prevalence of loss of consciousness was 30.8% (130), and patients experiencing loss of consciousness are risk factors for ICU admission, airway treatment, pain management, and central venous catheter insertion.

DECLARATIONS

This study was approved by Ethical Committee.

CONSENT FOR PUBLICATION

The Authors agree to publication in Journal of Society Medicine.

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COMPETING INTERESTS

The authors declare that there is no conflict of interest in this report.

AUTHORS' CONTRIBUTIONS

Author contributed to the preparation of the manuscript in this study.

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