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Post-Traumatic Amnesia, A Predictor Factor on Long-Term Complaints in Mild and Moderate Head Injury Patients

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A B S T R A C T

Some patients with mild and moderate head injuries still experience residual symptoms for several weeks to months after the injury, which can interfere with the ability to perform activities of daily living and social activities. Mild and moderate brain injury can cause reversible lesions accompanied by long-term complaints. These complaints should be used as the beginning of the basic physical signs to determine the next nursing action.

This study aims to determine the prognostic value of the characteristics of acute injury based on the duration of post-traumatic amnesia on long-term complaints of patients with mild to moderate head injuries. This research involved 60 mild-moderate head injury patients (utilizing purposive sampling method) who were treated in the emergency department of the Tugurejo General Hospital, Semarang from July 2021 – June 2022.

The results showed that most of the respondents were male (68.3%), with the highest age range being 20-45 years (81.7%), and most of the respondents had mild head injuries (71.7%). There is a significant correlation between post-traumatic amnesia and long-term complaints at 6 months after mild and moderate head injury treatment (p = 0.000), with a positive relationship (0.921) which means the longer the duration of PTA, the higher the duration of PTA. There are many complaints that accompany mild and moderate head injuries.

Nurses and doctors are expected to be able to use the duration of posttraumatic amnesia as a predictor of outcome for patients with mild-moderate head injury and receive priority in hospital treatment for immediate follow-up according to procedures. With an accurate assessment and proper treatment of posttraumatic amnesia factors, it is expected to reduce the burden of treatment costs for patients and families.

INTRODUCTION

Most patients with mild and moderate head injuries recover within a few weeks to several months after the head trauma they experience (van der Naalt, van Zomeren, Sluiter, & Minderhoud, 1999). However, some patients continue to experience sequelae of the

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disease during this period, which interfere with the ability to carry out activities of daily living and social activities (Englander, Hall, Stimpsons, et al., 2002).

In previous studies, duration of post traumatic amnesia (PTA) was used to define the severity of head injury patients (Alexander, 1995). Although the underlying neuropsychological damage in patients with mild to moderate head injuries usually improves within 3 months, patients may still experience deficits in attention and memory (Hugenholtz, Stuss, Stethem, et al., 2000). Based on the existing literature on mild and moderate head injuries there is no agreement in determining the predictive value of acute injury characteristics such as the duration of post traumatic amnesia (PTA) on the outcomes of nursing and health care (Kibby & Long, 2000).

Based on these reasons, it is important to conduct research to find out the results of long-term complaints of patients with mild to moderate head injuries based on the duration of post-traumatic amnesia upon admission to the hospital. This research was conducted at the Tugurejo General Hospital in Semarang. The aim of this research is to explore the relationship between duration of post-traumatic amnesia and the long-term complaints of patients with mild and moderate head injuries."

METHODS

This study is a cohort prospective research, with the independent variable duration of post-traumatic amnesia and the dependent variable long-term complaints at 6 months after hospitalization due to mild and moderate head injuries. This research was conducted at the Tugurejo General Hospital in Semarang based on the medical records of patients with mild head injuries and moderate head injuries who were treated at the emergency room from July 2021 – June 2022. Respondents in this study met the following inclusion criteria: patients with mild and moderate head injuries and the ages of between 20 and 65 years, the duration of post-traumatic amnesia is at least 5 minutes. The sampling technique used was a purposive sample involving 60 respondents.

The duration of post-traumatic amnesia was obtained from the patient's medical records based on the assessment of doctors in the emergency department who were studied as part of a neurological examination. Post-traumatic amnesia is determined based on the duration of the patient experiencing amnesia from the conscious patient until he is free from amnesia. After returning from treatment at the hospital, follow-up was carried out 6 months after the injury by visiting the respondent at home. At the follow-up visit, respondents were interviewed in a structured manner using a list of questions containing complaints related to head injuries that often arise after treatment at the hospital.

The symptom questionnaire consists of 16 symptoms that are often reported in the literature as a result of head injuries which include headache, balance disturbances, tinnitus, hearing loss, drowsiness, fatigue, forgetfulness, low concentration, lethargy, irritability, intolerance to crowds, anxiety, dry mouth, neck pain, nape stiffness, and arm pain (van der Naalt, van Zomeren, Sluiter, & Minderhoud, 1999). To control for the average number of complaints among respondents in general, respondents were also asked whether they had experienced any complaints/problems prior to the injury, and if so, whether the complaints had remained the same or had worsened since the injury. In this study, long-term complaints were assessed based on the number of complaints experienced by respondents.

Frequency analysis was carried out for the variables of gender, age, and type of head injury. Data related to long-term complaints at six months after injury were analyzed by non-parametric test (Friedman test) based on the distribution of the data obtained. Pearson's correlation coefficients were used to examine the relationship between the duration of post-traumatic amnesia and long-term complaints.

RESULT AND DISCUSSION

Result

A. Characteristics of Respondents

Table 1. Frequency distribution of respondents according to gender, age, and type of head injury at the

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Tugurejo General Hospital Semarang (n = 60)

Characteristics	Frequency	Percentage (%)
Gender:		
Male	41	68.3
Female	19	31.7
Age:		
20 – 45 years	49	81.7
>45 years	11	18.3
Type of head injury:		
Mild	43	71.7
Moderate	17	28.3

Table 1 shows that most of the respondents were male (68.3%), the largest age range was 20-45 years (81.7%), and based on the type of head injury most of the respondents had mild head injuries (71.7%).

B. Relationship between Post-Traumatic Amnesia and Long Term Complaints.

Table 2. Relationship between Post-Trauma Amnesia and Respondents' Long-Term Complaints at the Tugurejo Regional General Hospital, Semarang.

	PTA	Long-term complaint	Correlation coefficient	p value
Mean	8.88	4.05	0.921	0.000
SD	12.77	3.01		

From table 2 it can be seen that the average PTA is 8.88 days and the average number of long-term complaints is 4.05. The results also show that there is a significant relationship between post-traumatic amnesia and complaints 6 months after hospitalization for sufferers of mild and moderate head injuries (p = 0.000, 95% CI), with a very strong relationship (0.800 – 1.000), and has a positive relationship, which means that the longer the PTA duration, the more complaints accompanying head injuries.

Discussion

The results showed that most of the respondents were male (68.3%), with the largest age range being 20-45 years (81.7%), and most of the respondents had mild head injuries (71.7%). Thornhill, et al. (2000) in their research conducted at a hospital in England showed that 1255 (42%) respondents were male aged ≤ 40 years, and there were 575 (19%) female respondents aged over 65 years, and the majority (90%) of respondents suffered from mild head injuries. Another study in Indonesia by Asrini (2008) showed that there were 42 men (71.2%) out of 59 respondents and most of them had mild head injuries. Based on the results of this study and previous studies, it can be concluded that the majority of respondents were male and suffered from mild head injuries. This is possible because men are the backbone of the family and more often do activities outside the home to work, so they are more at risk of having an accident/injury.

The results also showed that there was a significant relationship between post-traumatic amnesia and complaints 6 months after hospitalization for patients with mild and moderate head injuries (p value = 0.000), with a very strong relationship (0.921), and has positive relationship, which means that the longer the PTA duration, the more complaints accompanying head injuries.

Metting, et al. (2010) explained that post-traumatic amnesia is a period of time following a head injury where the individual is unable to remember something consistently and continuously. Confusion and disorientation may or may not follow a period of post-traumatic amnesia (Metting et al. 2010). The duration of post-traumatic amnesia following head injury is the best predictor of the severity of head injury (Asrini, 2008). The duration of post-traumatic amnesia is also one of the best predictors of long-term impact after head injury (Metting, et al, 2010). PTA duration of more than 24 hours was shown to have a poor outcome on the Glasgow Outcome Scale (p=0.001). PTA duration is a predictor of outcome in patients with mild-moderate acute head trauma. Based on the research results of van der Naalt, van Zomeren, Sluiter, and Minderhoud (1999) it is known that six months after mild and moderate head injury, most of the 67 respondents (84%) still submit complaints. The most frequent complaints were headaches (32%), irritability (34%), forgetfulness and lack of concentration (42%), and fatigue (45%). Posttraumatic amnesia (PTA) duration is used to predict outcome after traumatic brain injury (TBI) (Vile, Jang, Gourlay, & Marshman, 2022).

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CONCLUSION

From the results of research conducted on patients with mild and moderate head injuries at Tugurejo General Hospital, Semarang, it can be concluded that there is a significant relationship between post-traumatic amnesia and long-term complaints at 6 months after treatment for mild and moderate head injuries, with a very strong relationship and positive relationship. For nurses and doctors, the results of this research have provided evidence that the value of the duration of post-traumatic amnesia is a predictor for the outcome of patients with mild and moderate head injuries which will have an impact on long-term complaints, so that these factors need to be considered in treating patients in hospitals according to procedures. Taking into account these factors is expected to provide economic value for patients by shortening the length of stay. For nursing education, the results of this research are evidence based research on the outcome of mild and moderate head injuries related to long-term complaints as a result of the duration of post-traumatic amnesia.

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