

Title:

Emergency Care During the Transferal of Patients With Traumatic Brain Injury to Designated Trauma Center

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References:

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Abstract Summary:

This study will provide valuable insights into emergency care during the transferal of patients with moderate and severe TBI to designated trauma center. Importantly, the results will be used to improve care during transferal, particularly in low and middle-income countries, where facilities are lacking and resources are limited.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
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The learner will be able to understand emergency care during the transferal of patients with traumatic brain injury to designated trauma center in low and middle-income countries where facilities are lacking and resources are limited.	emergency care during the transferal of patients with traumatic brain injury to designated trauma center in low and middle-income countries
The learner will be able to share experiences regarding emergency care during the transferal of patients with traumatic brain injury to designated trauma center.	emergency care during the transferal of patients with traumatic brain injury to designated trauma center in low and middle-income countries

Abstract Text:

Traumatic brain injury is a global problem (Crowe et al, 2010; Faul et al., 2010; Helps et al., 2008) and importantly it is a major and increasing problem in Thailand (Bureau of Policy and Strategy, Ministry of Public Health, Thailand, 2011; Ratanalert et al., 2007). The large numbers of persons suffering TBI, and specifically moderate and severe TBI, mean that the management of patients with moderate and severe TBI is a continuing challenge for Thai healthcare providers. Specific challenges also face emergency medical service (EMS) personnel who play a major role in the delivery of immediate care to patients with moderate and severe TBI, as they are responsible for providing emergency care to these patients during the transferal to the designated trauma center or the emergency department.

In parts of Thailand, it is common for patients with moderate and severe TBI to be taken to an emergency department by an ambulance through the EMS system, which has responded to an emergency 1669 call. Currently, there are four levels of the EMS system; advanced life support (ALS), intermediate life support (ILS), basic life support (BLS), and first responder (FR), ranked by high to low facility of operations (Emergency Medical Institute of Thailand [EMIT], 2012). In the South of Thailand, a study of 1,000 patients with head injury, including 6.4% of moderate and severe head injury, showed that only 3.8% of cases were taken to hospital by the ambulance (Ratanalert et al., 2007). Some severe TBIs are brought by unregulated volunteer services, either BLS or FR service level, which are in large proportion when compared to ALS personnel (EMIT, 2012). As a consequence, the pre-hospital care for patients with moderate and severe TBI is variable depending on the attending staff and equipment available on the scene. Also, little is known about the management of patients with moderate and severe TBI in pre-hospital care in the Thai context, particularly during transferal of patients to the designated trauma center or the emergency department. In addition, the clinical outcome of patients with moderate and severe TBI on their arrival of the designated trauma center is unknown. Thus, there is a need to evaluate care during the transferal of patients with moderate and severe TBI to the designated trauma center by Thai EMS personnel.

The aims of this study were to 1) evaluate care during the transferal of patients with moderate and severe TBI to the designated trauma center by Thai EMS personnel, and 2) examine clinical outcomes of patients with moderate and severe TBI on their arrival of the trauma center.

A retrospective study was used to collect the data. Audits of patients' medical and nursing records were conducted to evaluate care during the transferal of patients with moderate and severe TBI to the designated trauma center by Thai EMS personnel, and to examine the clinical outcome of patients with moderate and severe TBI on their arrival of the designated trauma center. The data were obtained from patients' medical and nursing records at an emergency department of a tertiary hospital, the hospital that has been declared as one of trauma centers in Southern Thailand. The study data were focused on adult patients, aged more than 17 years and presenting to the emergency department with moderate and severe TBI. Ethical approval for this study was obtained from the Ethics Committee at Faculty of Nursing, Prince of Songkla University and the hospital ethics committee at the study site.

A primary survey, the concept of advanced trauma life support (ATLS) which is recommended for all trauma patients (American College of Surgeons Committee on Trauma, 2008) was used as a framework to evaluate care during the transfer of patients with moderate and severe TBI to the designated trauma center. The primary survey includes A: airway with cervical spine control, B: breathing and ventilation management, C: circulation and hemorrhage control, D: disability (neurological status), and E: exposure/environmental control. The clinical outcomes of patients with moderate and severe TBI were also collected on their arrival of the trauma center. The clinical outcomes include blood pressure, oxygen saturation, pulse rate, respiratory rate, temperature, and a GCS score. The data were collected by two researchers (JD and RV). The inter-rater reliability was applied with 20 patient's medical records to evaluate the reliability of this tool. The inter-rater reliability of this tool was at 0.8.

Data analysis was conducted using the computer software. Descriptive statistics was used to analyze the data. A total of 201 cases with moderate and severe TBI were collected during a four-month period. Of the 201 patients, 83.58% were males. Approximately 82% had been involved in motor vehicle accidents. Most (72.14%) were transferred from a smaller hospital and the accident site by ALS personnel, while 27.86% were brought directly from the accident site to the emergency department of the Trauma Center (21.89% by BLS and 3.98% by FR personnel, and 1.99% by relatives or strangers who have accidentally seen the event).

However, the results of emergency care during the transfer of patients with moderate and severe TBI and clinical outcomes of patients on their arrival of the trauma center are in process of data analysis.