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Traumatic Brain Injury and Adherence of Physicians to Brain Trauma Foundations Guidelines

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Opinion

Traumatic Brain Injury (TBI) is a global health challenge. At least 10 million TBIs result in death or hospitalization each year. In the United States, 235,000 hospitalizations and 50,000 deaths from TBI occur annually [1]. Traumatic brain injury is one of the devastating conditions that occur. TBI is one of the most common causes of death in people aged 1 to 45 years; it can also cause physical or mental disability in more than half of people with TBI [2-3]. TBI is divided into three groups based on Glasgow Coma Scoring: mild (GCS between 13 and 15), moderate (GCS between 9 and 12), and severe (GCS below 9) [4]. Costs of medical treatments for severe TBI vary from \$600,000 to \$1.8 million for each case [5]. However, the costs of acute care in a case of mild TBI are estimated to be about \$33,000 to \$35,000 [6]. Based on epidemiologic data, mild TBI is the most common trauma related to the central nervous system [7]. Although mild TBI is not as dangerous as severe TBI, its management is a keystone in emergency departments. While most patients with mild TBI do not require any care, it is shown that 6-9 percent of them have intracranial injuries. Although, only 0.4-1 percent of patients require acute neurosurgery intervention [8].

Devastating conditions following TBI make Brain Trauma Foundations (BTF) develop management protocols based on their local conditions and facilities. To date, patients with TBI have been shown to benefit from brain CT scans, and several decision-making algorithms for performing CT scans based on clinical conditions have been developed, e.g., Canadian CT Head Rule (CCHR) and NICE [9-10]. Although CT scans are beneficial in patients with TBI, CT scans expose the patient to X-rays and cost the patient and the health system economically [11-12]. Also, the unavailability of CT scans in remote or deprived areas, especially in developing countries, is another challenge that emergency medicine specialists confront [13]. It is examined that adherence to guidelines could improve outcomes of patients with TBI [14]. Studies showed that adherence to protocols of brain trauma foundations is seemed low. Despite an increase in adherence from 1997 to 2018, the median adherence to BTF guidelines was 60.7%. Although, a systematic review on this topic showed that evidence is not strong enough to detect causes of non-adherence to BTFs' protocols [15]. Further studies should address this low adherence rate to BTF guidelines. In conclusion, TBI is a potentially devastating condition, and appropriate management decreases the mortality and morbidity of these patients. Therefore, the existence of guidelines appropriate to each area's time and place and physicians' adherence to BTF guidelines have critical roles in improving medical care in emergency departments.

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