MedicalXpress

Study shows bias in use of alcohol screening after traumatic brain injury

March 13 2018

"Has this patient been drinking?" It's a critical question for neurosurgical nurses and other professionals when evaluating patients with traumatic brain injury (TBI). But some groups of TBI patients are less likely to be screened for alcohol use, including women and younger patients, reports a study in the March issue of the *Journal of Neuroscience Nursing*, official journal of the American Association of Neuroscience Nurses.

Standardized approaches are needed to ensure that every patient with TBI undergoes alcohol screening in the emergency department (ED), according to the new research by Chong (Sherry) Cheever, MSN, ANP-BC, PhD candidate, of Harborview Medical Center, Seattle, and Celestina Barbosa-Leiker, PhD, of Washington State University, Spokane.

Evidence of 'Systemic Bias' in Alcohol Screening after TBI

Alcohol consumption is very common among patients with head trauma—previous studies have suggested that one-half to two-thirds of patients with TBI were consuming alcohol before their injury. The effects of alcohol can have a major impact on assessment of the patient's condition.

Patients with TBI who are intoxicated may seem to get worse after they are transferred to the neurosurgical intensive care unit (NICU). If the

NICU professionals are unaware of the patient's alcohol consumption, they may suspect the "worst-case scenario" of increased intracranial pressure and possible brain herniation.

Without knowledge of the cause of the patient's agitation and worsening neurological status, additional diagnostic testing is required to confirm or to rule out if the current condition is alcohol withdrawal or a worsening of increased intracranial pressure. If tests confirm increased intracranial pressure, urgent surgery to relieve pressure on the brain (decompressive craniectomy) is required. "Alcohol screening in the ED provides crucial information that can change the treatment path if it were known that patients were intoxicated," the researchers write.

They analyzed the prevalence of and factors associated with alcohol screening in patients in nearly 1,600 TBI patients seen at the ED of a level I trauma center. More than two-thirds of patients were men; the average age was about 49 years for men and 57 years for women.

Eighty percent of the TBI patients underwent laboratory screening for alcohol consumption. That was higher than in previous studies reporting that less than half of trauma patients undergo alcohol screening.

But some groups of patients had lower rates of alcohol screening. Women were less likely to be screened than men, and younger patients were less likely to be screened than older patients.

Alcohol screening was also less likely for patients in the critical and mild range of injury severity, based on the standard Abbreviated Injury Scale (AIS); and for those in the middle range of responsiveness, based on the Glasgow Coma Scale (GCS).

The findings suggested the AIS and GCS scores may have been skewed by lack of knowledge of the patient's intoxication status. The researchers

cite previous studies reporting that GCS and AIS scores may improve significantly after patients are transferred to the NICU, as their alcohol levels decrease.

Alcohol screening was unrelated to the performance of urgent decompressive craniectomy, or to the patients' length of hospital stay. The authors note some limitations of their study, including the lack of data on the reasons why alcohol screening was not performed in the ED.

"Women, younger patients, and patients with midrange GCS scores and unsurvivable and mild AIS scores could be impacted by a systemic bias to not conduct an alcohol screen based on how the patients present to the ED," Ms. Cheever and Dr. Barbosa-Leiker write. They believe that updated ED triage processes and screening tools are needed to overcome this bias and achieve a "targeted 100 percent alcohol screening rate for all trauma patients."

More information: Chong (Sherry) Cheever et al. Impact of Alcohol Screening for Traumatic Brain Injury Patients Being Admitted to Neurosurgical Intensive Care Unit, *Journal of Neuroscience Nursing* (2018). DOI: 10.1097/JNN.0000000000000345

Provided by Wolters Kluwer Health