Using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) to Determine Substance Abuse Prevalence in the RI Trauma Population

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ABSTRACT

BACKGROUND: Level I trauma centers are required to provide screening and brief interventions for alcohol abuse. The World Health Organization (WHO) Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) is a validated screening measure for all substances of abuse. This study is the first to use the ASSIST to screen a trauma population.

METHODS: A cross-sectional screening study using the ASSIST was conducted which included all patients admitted to the trauma service at Rhode Island Hospital during July and August 2012 who met inclusion criteria.

RESULTS: The ASSIST categorized 25% of participants as needing a brief intervention for alcohol and an additional 6.3% as needing more intensive treatment. At least a brief intervention was indicated for at least one other substance besides alcohol in 37% of participants.

CONCLUSIONS: The ability of the ASSIST to identify misuse of multiple substances makes it a good candidate for the screening measure used by trauma centers.

KEYWORDS: trauma, substance abuse, ASSIST

INTRODUCTION

The literature shows a definite link between alcohol or illegal drug use and injury from physical trauma. At one urban trauma center, heavy alcohol use was associated with nearly double the risk of violent injury.[1] Another study of a trauma center population found that at the time of their admission, 24% of trauma patients were alcohol dependent and 18% were currently drug dependent, versus 7% and 4%, respectively, in the general population of the United States.[2]

One successful strategy developed to reduce the impact of substance abuse is the Screening, Brief Intervention, and Referral to Treatment (SBIRT) algorithm. In 2006, the American College of Surgeons Committee on Trauma (ACS COT) began requiring that a SBI program for alcohol be in place as a prerequisite to level I trauma center certification.[3] This study examines a newly validated screening measure from the WHO, the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), as a potential screening measure for a trauma population that could expand an SBI program infrastructure to screen for multiple substances.[4]

The ASSIST uses eight questions to assess lifetime substance use and substance use within the past three months. It uses scaled multiple choice responses to create individual scores for each substance of use, and stratifies these scores into low, moderate, and high risk categories, based on past three month use.[5] A PubMed search returned a total of 29 studies using the ASSIST, the majority of which assessed substance abuse in primary care populations.[6] This study is the first to use the ASSIST measure to describe substance abuse patients admitted to a trauma center, and compares this description to that provided by the standard screening already in place.

METHODS

The study setting was the trauma service at Rhode Island Hospital (RIH), the level I trauma center serving the entire state of Rhode Island, as well as nearby areas in Massachusetts and Connecticut. Rhode Island has a population of just over one million, and is made up of 76% white non-Hispanic persons, as well as 12% Hispanic persons and 6% African-American persons.[7]

All patients admitted to the trauma service at RIH between July 16 and August 21, 2012 were screened for study eligibility. The selection criteria were designed to be as inclusive as possible, only requiring that the participant be at least 18 years old, proficient in English, and able to complete the survey on their own. If patients were not initially eligible, then they were evaluated daily for eligibility until their discharge from the hospital, or until permanently ineligible due to disability or death.

After receiving verbal consent to participate in the study from eligible patients, the ASSIST V3.0 measure was administered via a tablet computer with an internet connection using DatStat™ software (Seattle, WA), a HIPAA compliant web-based survey program. Each participant used the tablet computer to complete the ASSIST screening measure, but entered no identifying information other than gender. All survey data was collected confidentially and anonymously and not shared with the clinical staff. A five-dollar gift certificate was given as compensation for study participation. The study protocol was reviewed by the RIH institutional review board and deemed exempt.

RESULTS

During the time of the study, 272 patients were admitted to the trauma service. Of those, 134 were eligible for the study and 112 elected to participate. [**TABLE 1**] The trauma service population was 35% female, and of the study participants, 36% were female.

Responses to the ASSIST showed that 31% of participants were categorized as needing at least a brief intervention for alcohol, with 6.3% needing referral to more intensive treatment. [**TABLE 2**] In comparison, responses to the CAGE screen were positive in 12% of the trauma population, and detectable blood alcohol levels were found in 36% of the trauma population. [**TABLE 3**]

The ASSIST also individually screened for the use of other substances of abuse, showing that interventions were indicated for anywhere between 29% of the participants (marijuana) to 1% (inhalants). In total, 37% of participants were categorized as needing at least a brief intervention for at least one substance other than alcohol. In comparison, the urine toxicology screen for a wide range of substances was positive in 68% of the trauma population.

Table 1. Eligibility

Patients on Trauma Service	272
Medically Able and Contacted before Discharge	134
Non English Speaking	8 (6.0%)
Declined to Participate	14 (10%)
Participants	112 (84%)

Table 2. ASSIST Results (with % of eligible participants)

Substance	Brief Intervention	More Intensive Treatment
Alcohol	28 (25%)	7 (6.3%)
Any other substance	35 (31%)	7 (6.3%)
Marijuana	28 (25%)	4 (3.6%)
Cocaine	6 (5.4%)	1 (0.9%)
Amphetamines	3 (2.7%)	2 (1.8%)
Inhalants	1 (0.9%)	0
Sedatives	7 (6.3%)	1 (0.9%)
Hallucinogens	7 (6.3%)	0
Opioids	6 (5.4%)	0

Table 3. Standard Trauma Service Screening Tests

	Positive Result	Negative Result	Unknown
Urine Toxicology Screen	93 (68%)	43 (32%)	136
Blood Alcohol Level	69 (36%)	123 (64%)	80
CAGE Questionnaire	18 (12%)	129 (88%)	125

The urine toxicology screen detects the presence of amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, methadone, opiates, and phencyclidine. A positive result for Blood Alcohol Level (BAL) indicates detection of any amount of ethanol. Percentages indicate percentage of known results, and does not include those patients for which results were still pending at the time of data analysis.

DISCUSSION

Our results demonstrate that use of the ASSIST is feasible in the trauma center as it was completed by 84% of those eligible for the study. This level of participation by eligible patients may be slightly inflated in comparison to participation outside of a study due to our protocol of anonymous data collection as well as small compensation for participation. On average, the screening took nine minutes (mean = 9.4; SD = 5.3, range = 1-28) to complete. Furthermore, allowing the patient to complete the screening on their own using the tablet computer allowed for a minimal time commitment from those administering the screen.

The ASSIST and CAGE questionnaire both identified a sub-population of the trauma service for which an intervention for alcohol misuse was indicated. This study does not attempt to conclude which is a more appropriate screen for alcohol misuse in the trauma population.

The ASSIST also identified numerous other specific substances of abuse for which an intervention was indicated (and may not be currently provided). Determining whether using the ASSIST is measurably beneficial as compared to screening for alcohol only will depend upon future outcomes research demonstrating effective interventions with this population. The urine toxicology screen also identified substance use in many patients. However, it is used in practice at this center more for medical decision making than for assessing substance abuse patterns, as it documents only the presence, not the amount or manner in which a substance is used, and does not differentiate between prescription medicine use and misuse.

One of the main limitations of this study is the comparison between the participant's ASSIST data and the standard screening data from the entire trauma population, rather than a direct comparison of individual participant's data. This was due to the anonymity of the ASSIST data collection, and makes it difficult to compare the sensitivity or specificity of the two screening methods. Also, the subset of the trauma population who were participants likely underrepresented those who were more seriously injured due to the exclusion criteria, and it is unclear if this would have increased or decreased those identified as having substance abuse issues. Finally, the data gathered is useful for an accurate description of the substances being abused by the trauma population at our center. However, our findings may not apply to trauma centers in other locations which may have different substance abuse patterns or currently clinically screen for substance abuse using other measures.

In conclusion, our study confirmed that substance abuse

is present in a substantial portion of the adult trauma population at our center. We found that an electronic version of the ASSIST is a feasible screening measure to assess multiple types of substance abuse and offers an opportunity to detect and intervene for substance abuse during a trauma admission. In what may be a trauma patient's only encounter with the health care system, screening only for alcohol abuse is clearly a missed opportunity for intervention. If this level of substance abuse prevalence is consistent across other trauma patient populations, it may suggest that the recommendations of the ACS COT could be extended to include other substances besides alcohol.

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