Identifying Patients With Problematic Drug Use in the Emergency Department: Results of a Multisite Study

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Study objective: Drug-related emergency department (ED) visits have steadily increased, with substance users relying heavily on the ED for medical care. The present study aims to identify clinical correlates of problematic drug use that would facilitate identification of ED patients in need of substance use treatment.

Methods: Using previously validated tests, 15,224 adult ED patients across 6 academic institutions were prescreened for drug use as part of a large randomized prospective trial. Data for 3,240 participants who reported drug use in the past 30 days were included. Self-reported variables related to demographics, substance use, and ED visit were examined to determine their correlative value for problematic drug use.

Results: Of the 3,240 patients, 2,084 (64.3%) met criteria for problematic drug use (Drug Abuse Screening Test score $\geq$3). Age greater than or equal to 30 years, tobacco smoking, daily or binge alcohol drinking, daily drug use, primary noncannabis drug use, resource-intense ED triage level, and perceived drug-relatedness of ED visit were highly correlated with problematic drug use. Among primary cannabis users, correlates of problematic drug use were age younger than 30 years, tobacco smoking, binge drinking, daily drug use, and perceived relatedness of the ED visit to drug use.

Conclusion: Clinical correlates of drug use problems may assist the identification of ED patients who would benefit from comprehensive screening, intervention, and referral to treatment. A clinical decision rule is proposed. The correlation between problematic drug use and resource-intense ED triage levels suggests that ED-based efforts to reduce the unmet need for substance use treatment may help decrease overall health care costs. [Ann Emerg Med. 2014;64:516-525.]

Please see page 517 for the Editor's Capsule Summary of this article.

A **podcast** for this article is available at www.annemergmed.com.

INTRODUCTION

Background

Of the estimated 22.5 million persons aged 12 years and older who were illicitly using drugs in the United States in 2011, 6.5 million were classified as having a diagnosable (*Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*) drug use disorder or combined drug and alcohol use disorder (3.9 million and 2.6 million, respectively).[1] In addition to the well-documented medical consequences of drug abuse,[2-5] multiple health outcomes have been linked to drug use, including unintentional injuries, motor vehicle crashes, interpersonal violence injuries because of increased aggression and impulsivity, HIV and other infectious diseases because of high-risk behaviors (eg, risky injection and sexual behaviors), and intentional or accidental overdoses.[6-8]

Importance

Studies have shown that drug-using individuals are more likely to use the emergency department (ED) for their medical care and are more likely to require hospitalization than their non–drug-using counterparts.[9-11] The Drug Abuse Warning Network, a public health surveillance system that monitors drug-related morbidity and mortality, estimated that of the 5.1 million drug-related ED visits nationwide in 2011, 2.5 million visits were directly related to use of illicit substances, nonmedical use of pharmaceuticals, or a combination of these.[12] In 2008, the total annual cost of illicit drug use (excluding tobacco and alcohol) was calculated at $151.4 billion. Not inclusive of substance use treatment, medical care costs alone accounted for $5.4 billion of the total annual cost.[13]

Substance use–related health events leading to ED visits may constitute opportunistic "teachable moments" for delivering brief but meaningful interventions. In fact, the American College of Emergency Physicians issued a policy statement in 2011 promoting the use of screening, brief intervention, and referral to treatment (SBIRT) in the ED for problematic alcohol use.[14] Although numerous studies have demonstrated the effectiveness of SBIRT in reducing high-risk alcohol use, associated injury

Editor's Capsule Summary

What is already known on this topic

A substantial number of emergency department patients have overt or covert substance use issues.

What question this study addressed

This multicenter study reviewed data from 3,240 patients who used drugs in the past 30 days to determine characteristics associated with problematic drug use as defined by a standardized questionnaire instrument.

What this study adds to our knowledge

Patients who use drugs other than marijuana have a rate of problematic drug use 15 times higher than that of those who report only marijuana use.

How this is relevant to clinical practice

Emergency physicians should consider problematic drug use in anyone who discloses drug use other than marijuana and counsel them about substance abuse treatment.

recidivism, and driving under the influence,[15-19] its effectiveness in addressing problematic drug use remains to be definitively demonstrated, though preliminary studies in ED populations show promise.[20-23]

One significant challenge in addressing drug use disorders in the ED is the difficulty in detecting problematic drug use. Studies have shown that patients tend to deny or underreport illicit drug use.[24-27] Improving the ability of emergency providers to identify patients with drug use problems is critical to their role in mitigating the health effects of illicit drug use. Determining clinically relevant characteristics that may be indicative of drug use problems may assist emergency providers in identifying patients in most need of comprehensive ED-based screening, intervention, and referral to substance use treatment.

Goals of This Investigation

The present study aims to identify demographic and clinical characteristics associated with problematic drug use in patients who report past 30 day drug use during an ED visit.

MATERIALS AND METHODS
Study Design

As part of a large multicenter randomized prospective trial study, research staff prescreened individuals presenting to the ED during predefined recruitment hours in accordance with local standard operating procedures. Using an approved verbal informed consent script, research staff asked patients to anonymously complete the screening protocol. Using the Brief Information Tool, study staff members recorded basic demographic information (age and sex), chief complaint, ED triage level, and inability or refusal to participate. Study team members then screened participating patients with a composite measure, the Tobacco, Alcohol, Drug questionnaire. The questionnaire captured data on nicotine dependence (the Heavy Smoking Index); heavy drinking or active alcohol abuse or dependence (the Alcohol Use Disorders Identification Test—Consumption); problems such as guilt, blackouts, and withdrawal related to drug use within the last year (the Drug Abuse Screening Test); primary drug of use and number of days of its use in the past 30 days; and perceived relatedness of ED visit to drug use. In the parent trial, prescreened patients who met inclusion criteria and consented for enrollment in the trial were randomized to receive minimal screening only, screening and further assessment, or screening, further assessment, and a 30-minute brief intervention. The parent trial, a 3-group randomized prospective trial, has been previously described,[28] was approved by the institutional review board at each participating study site, and is registered at ClinicalTrials.gov, number NCT01207791. The Partners Healthcare institutional review board (Boston, MA) approved this secondary analysis during its review of the parent trial.

Setting and Selection of Participants

Patient prescreening and enrollment occurred between October 2010 and February 2012 in the EDs at 6 US academic hospitals. Patients eligible to be prescreened were aged 18 years or older, had adequate English proficiency and literacy, presented to the ED for medical treatment, and were of sound mind to provide informed consent. Study staff did not approach patients with overt exclusions such as life-threatening conditions, psychosis, or intoxication. All prescreened patients provided informed verbal consent to be screened for the study. Participants were considered to have problematic drug use if they scored greater than or equal to 3 on the Drug Abuse Screening Test and reported having used their primary drug of choice within the last 30 days. Participants determined by this self-reporting method to have a drug use problem were considered eligible for enrollment into the parent study trial. Of the 15,224 participants who completed the Brief Information Tool and the Tobacco, Alcohol, Drug questionnaire as part of the prescreening process, 3,240 reported drug use within the last 30 days. This secondary analysis includes prescreening data from all participants who used their primary drug of choice within the last 30 days (N=3,240) whether or not they enrolled in the parent trial. Of the full sample of participants who used drugs within the last 30 days, 2,084 (64.3%) scored greater than or equal to 3 on the Drug Abuse Screening Test, thus meeting criteria for problematic drug use. The remainder (1,156; 35.7%), who scored less than 3 on the Drug Abuse Screening Test, were considered drug-using individuals who did not meet criteria for problematic drug use.