

# Alcohol and Drug Use in Adult Patients With Musculoskeletal Injuries

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## ABSTRACT

This study reviewed trauma registry data for information on the prevalence of alcohol and drug use in adult patients with fractures and dislocations admitted to Hermann Hospital, Houston, Texas, from January 1992 to December 1994. Of the 1776 adult patients aged 18 years or older, 1126 (63%) were tested for blood alcohol concentration, and 873 (49%) had their urine screened for a panel of 58 drugs. Of the patients tested, 467 (41%) had positive blood alcohol concentrations, and 335 (30%) were legally intoxicated (blood alcohol concentration  $\geq 0.10\%$ ). Of the patients providing urine specimens, 191 (22%) had samples that were positive for one or more drugs. Overall, 9% of the patients tested were positive for both alcohol and drugs, and 54% were positive for either alcohol or drugs.

The highest prevalence of alcohol use was in patients aged 21 to 33 years, and men were intoxicated more often than women. Alcohol use was more commonly associated with motor vehicle accidents, pedestrian or bicycle accidents, and gunshot wounds; intoxication was associated with a higher incidence of tibia fractures. The average injury severity score was higher, the duration of stay was longer, and total hospital charges were higher for the alcohol-positive group. Patients testing positive for alcohol or drugs were more likely to lack insurance coverage.

It is not surprising that the leading cause of death for persons aged 1 through 34 years is motor vehicle accidents.<sup>1</sup> It is troubling, however, to examine data showing the influence of alcohol on the incidence of motor vehicle accidents. In 1993, for example, approximately 40% of the more than

40,000 motor vehicle fatalities were related to alcohol consumption.<sup>2</sup> Total medical expense for individuals who subsequently died as a result of alcohol-related motor vehicle accidents exceeded \$5 billion<sup>2</sup>; this total does not include costs for individuals who survived with injuries. Clearly, the economic costs of alcohol-related injuries are enormous.

As alcohol and drug abuse have become significant problems in today's society, physicians are increasingly asked to treat patients impaired by these agents. A brief visit to any busy emergency center reveals that a significant number of injuries are complicated by intoxication. Although several studies have reported on alcohol and drug use in trauma patients,<sup>3-10</sup> few have reported on the influence of these agents on specific injuries.<sup>11</sup> The present study reviewed data from a trauma registry for information on the prevalence of alcohol and drug use in adult patients hospitalized with fractures and dislocations and assessed the relationship, if any, between intoxication and a variety of clinically relevant variables (age, sex, race/ethnicity, mechanism of injury, injury severity score, anatomic location of fracture or dislocation, length of hospital stay, total hospital charges, and payor class).

## PATIENTS AND METHODS

A trauma registry is used at our level one trauma center to record demographic and injury data on all patients admitted with fractures or dislocations. From January 1992 through December 1994, 1776 adult patients with fractures and dislocations were admitted to Hermann Hospital, Houston, Texas. Of these patients, 1126 (63%) were tested for blood alcohol concentration and 873 (49%) had their urine screened for drugs. A total of 767 (41%) had both their blood and urine tested.

Blood alcohol levels were measured with a DuPont ACA gas chromatograph (DuPont, Wilmington, Delaware). A blood alcohol concentration  $\geq 0.10$  is the threshold for legal intoxication in Texas. The urine screen for drugs consisted of a panel of 58 substances (Table I), which, for the purposes of reporting, was subdivided into the fol-

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