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Alcohol-related hand injuries

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Summary The study was based on 1199 patients consecutively treated for hand injuries in the Second Department of Surgery of the Jagiellonian University in Krakow between the years 1987 and 2000. Three hundred and twenty of these patients (26.6%) had consumed alcohol several hours before an accident. Data collected from an interview with the patient and a doctor on duty were used in the study. Routine tests for blood alcohol concentration were not carried out. Young men (89.3%), mostly manual workers (74.3%) ($p < 0.001$), constituted the majority of patients in the alcohol group. They were younger on average ($p < 0.001$) than sober patients. In most cases, the accident had happened at home (65.9%) ($p < 0.001$) and the main cause of injury was a cut with glass ($p < 0.001$). Despite only minor injuries they were treated in hospital due to their state of intoxication. The degree of hand disability was higher ($p < 0.05$) than with sober patients. The average cost of treatment in a state of intoxication was more than twice as high as the cost of treatment in sober patients. Alcohol-related hand injuries present a major medical and socioeconomic problem.

Introduction

The effect of alcohol consumption on the incidence of accidents resulting in different types of bodily injuries is widely known.[2,7—9,11,14] If alcohol was consumed up to 6 h before an accident, there is a 1.5 higher[8,16] probability that the accident will happen. According to Marston,[9] the probability of an accident is doubled with the alcohol concentration in blood reaching 0.6% (0.6×0.001 kg/l). Such likelihood rises three-fold or four-fold[10] after the consumption of 60 g of alcohol. Alcohol is a determining factor in many hand injuries. In a study by Clark et al.,[3] 16% of patients reporting for treatment of hand injuries were under the influence of alcohol. According to Smith et al.,[13] this percentage reached 18% and in Marston's study[9] even 31%. Beaton et al.[1] also describe the effect of alcohol on hand injuries. However, no exact figures were presented, only the causes of alcohol-related hand injuries such as hitting a pane of glass with a hand or being beaten up. Bokhari and Stirrat[2] show in their study that all patients who had punched glass admitted to alcohol consumption. Hand injuries after alcohol consumption occur at work also.[5,6,9,12]

The aim of this study is to assess the incidence of alcohol-related hand injuries and their consequences, and to determine some correlations among such patients.

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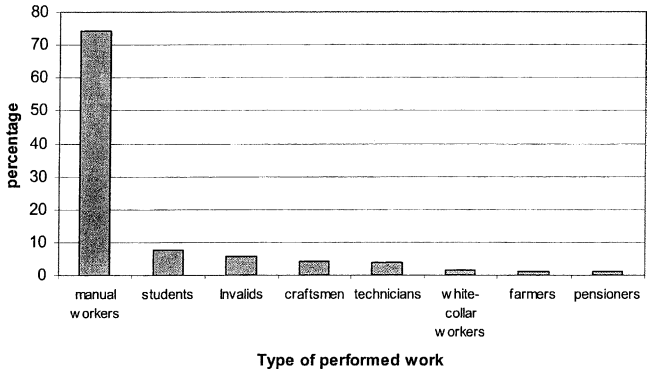

Figure 1 Relation between alcohol-related hand injuries and the type of work performed.

Materials and methods

The study was carried out on 1199 patients treated for hand injuries in the Second Department of Surgery, the Jagiellonian University in Krakow between the years 1987 and 2000. The patients were admitted for treatment in the accident and emergency department of surgery, which was open 64 times a year for Krakow and surrounding areas. Whether the patient was in a state of intoxication was determined after an interview with the patient, his/her family, and after a physical examination. Routine tests for blood alcohol concentration were not carried out. All patients were attended to within a few hours of being admitted to the clinic. Patients with serious injuries were treated in hospital until their general and local condition became stable. The majority of cases were outpatients. The severity of injury was estimated using a 4° scale. The level of hand impairment was estimated according to the Swanson et al.'s method[15] at least 18 months after the accident, assuming that the hand had fully recovered.

Results

The study shows that as many as 320 patients (26.6%) were under the influence of alcohol at the time of the accident. They were much younger ($p < 0.001$) (average age 31.3 ± 11.3 years) than sober patients (average age 39.00 ± 16.6 years). The alcohol group consisted mostly of males (286 patients, 89.3%).

There was a strict relation between alcohol-related hand injuries and the type of work performed ($p < 0.001$). Manual workers suffered the most injuries (238 cases, 74.3%). Pupils and students were in second place (24 cases, 7.5%), then invalids (19 cases, 5.9%), craftsmen (14 cases, 4.3%), technicians with vocational education (12 cases, 3.75%) and white-collar workers (5 cases, 1.5%). Farmers and pensioners were least affected [4 cases (1.2%) in each group] (Fig. 1).

There was also a close correspondence ($p < 0.001$) between alcohol-related accidents and the place where the accident occurred. Most accidents happened at home (211 cases, 65.9%), seldom in public places (51 cases, 15.9%), in the street (38 cases, 11.8%) and on a farm (10 cases, 3.1%). There were 4 cases (1.25%) of alcohol-related occupational hand injuries and no cases of injuries while playing sports (Fig. 2).

The relation ($p < 0.001$) between alcohol-related hand injuries and the cause of the accident was also evaluated. A cut with glass or other sharp object and self-mutilation constituted 64.3% of

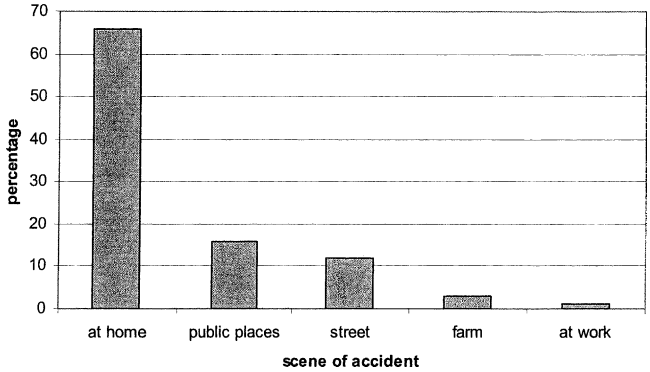

Figure 2 Relation between alcohol-related hand injuries and the scene of the accident.