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Road traffic accidents among alcohol-dependent patients: The effect of treatment

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Abstract

It is well known that driving under the influence of alcohol increases the risk of traffic accidents. Alcohol-dependent patients are responsible for two-thirds of motor vehicle crashes involving alcohol. Studies carried out on the general population have shown a relation between alcohol dependence and traffic accidents.

The aim of the study is to analyse the effect on traffic accidents of treatment of patients with alcohol-related problems. To do so, the prevalence of traffic problems in a sample of patients with a diagnosed dependence on alcohol was assessed for three periods: during their lifetime, in the year preceding the start of treatment and over the year of treatment.

A prospective study was carried out of 176 patients (147 males, 29 females; mean age 42.9 years) diagnosed as alcohol dependent according to the DSM-IV criteria in three alcoholic treatment centres in Castilla y León, Spain.

36.9% of the alcohol-dependent patients had had some kind of traffic problem during their life and 8.5% in the year prior to starting treatment. The most frequent problem was positive breath tests, followed by accidents with damage to the vehicle. Sixty-nine of the 176 patients were still receiving treatment after a year. The prevalence of traffic problems among those patients who followed treatment for 1 year (4.3%) was lower than in the year before treatment (15.9%).

The study showed that the treatment is also effective in reducing traffic problems.

Keywords: Traffic violations; Traffic collisions; Alcoholism; Alcoholism treatment

1. Introduction

Alcohol consumption is a factor that frequently influences the occurrence of injuries and accidents, especially in road traffic accidents (Haberman, 1987; Chipman, 1995), with the resulting morbidity and mortality which create an important public health problem on a worldwide level (WHO, 2004).

Spain is one of the countries where the consumption of alcoholic beverages and its related problems acquire great importance, due to the high prevalence of consumption, the deep-rooted social acceptance the habit has in our communities and the generalised perception that alcohol, or at least certain kinds of alcoholic beverage, are part and parcel of our society's alimentary and dietary norms (Del Río et al., 2001).

It is well known that driving under the influence of alcohol increases the risk of being involved in a traffic accident (Zador, 1991; Maycock, 1997). It has been estimated that for every 0.02 g/l of increase in a driver's blood–alcohol concentration, the risk of being involved in a road traffic accident doubles. In general, the effects of alcohol on the psychomotor performance and involvement in accidents are directly proportional to the level of alcohol in the blood: the higher the level, the greater the deterioration.

Alcohol-dependent patients are responsible for two-thirds of motor vehicle crashes involving alcohol (Hingson et al., 2002). The first evidence to show that alcohol-dependent patients were more prone to road traffic accidents appeared in the mid-20th century (Schmidt et al., 1962; Waller and Turkel, 1966).

Studies carried out on the general population have shown a relation between alcohol dependence and road traffic accidents. Thus, in the USA, in the National Longitudinal Alcohol Epidemiologic Survey of 1992, thirteen percent of respondents were considered to fulfil the DSM-IV criteria of alcohol dependence at some point in their lives. These people with alcohol dependence represent 65% of those involved in a traffic accident due to the excessive consumption of alcohol and make up 72% of

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those who had had a traffic accident in the year prior to carrying out the study (Hingson et al., 2002). From the data of the Fatal Accident Reporting System (FARS) and the National Mortality Follow-Back Survey (NMFS) in the USA, those involved in fatal accidents with BACs ≥0.15 g/dl were more frequently classified by their families as "problem drinkers" or "hard core" than those with BACs of 0% (31% versus 1%) (Baker et al., 2002).

In a previous study carried out on 8043 drivers who attended the Medical Driving Test Centres to evaluate their fitness to drive, it was seen that among the people diagnosed as having alcohol-related problems, 23.2% of these admitted to a traffic accident in the 3 years preceding the survey and 18.7% said they had been fined in the year preceding the survey. These figures are significantly higher than those obtained for those who did not have alcohol-related problems (12.1%, 9.3%, respectively) (Del Río et al., 2001).

Several studies have shown that brief interventions or counselling for alcohol problems among patients involved in alcohol-related injuries are effective in reducing drink–driving offences and alcohol-related injuries (Gentilello et al., 1999; Monti et al., 1999; Longabaugh et al., 2001). Alcohol-dependence treatment has also been shown to be effective for reducing drink–driving offences (Dinh-Zarr et al., 1999).

However, the main evidence comes from the meta-analysis carried out by Wells-Parker et al. (1995) 10 years ago. The study was based on 215 studies carried out on convicted drink–driving offenders, and revealed that treatment (alcohol abuse treatment and rehabilitation interventions) reduces reoffending and alcohol-related collisions to a greater extent than conventional criminal justice measures (fines, licence suspensions, etc.).

Alcohol-dependent patients are not considered fit to drive. Current EU legislation (please visit the Driving Licence website, http://www.europa.eu.int/comm/transport/index_en.htlm) does not permit the issuing or renewal of driving licences to those who do not possess adequate driving ability. Annex III of Council Directive 91/439/CEE on driving licences establishes the minimum standards of physical and mental fitness for driving a power-driven vehicle. Under the heading referring to alcohol, it establishes that "driving licences shall not be issued to, or renewed for, applicants or drivers who are dependent on alcohol or unable to refrain from drinking and driving. After a proven period of abstinence and subject to authorized medical opinion and regular medical check-ups, driving licences may be issued to, or renewed for, applicants or drivers who have in the past been dependent on alcohol" (Del Río et al., 2001; Alvarez et al., 2005).

In the European Union subjects are allowed to drive again after successful treatment. However, it is not known whether this decision is a good one or not. The aim of this study, then, is to examine whether the high risk of alcohol-related problems in traffic is modified by treatment for alcohol-dependent drivers.

2. Objectives

The aim of the study is to analyse the effect on traffic accidents of treatment of patients with alcohol-related problems. To do so, the prevalence of traffic problems in a sample of patients with a diagnosed dependence on alcohol was assessed for three periods: during their lifetime, in the year preceding the start of treatment and over the year of treatment.

3. Methods

The criteria for inclusion in the study are as follows: Firstly, patients attending participating centres for the first time to treat their dependence on alcohol (Gómez-Talegón and Álvarez, 2005). Secondly, that such patients have a valid driving licence. Thirdly, that they regularly drive at the present time (at least 2000 km a year). All the patients were adequately informed of the nature of the study and participated voluntarily, giving their consent in writing.

As pointed out previously, EU legislation and Spanish legislation established that driving licences shall not be issued to, or renewed for applicants or drivers who are dependent on alcohol (Del Río et al., 2001). Spanish legislation establishes that to obtain a driving licence, or to renew it (every ten years up to 45, every 5 years between 46 and 70 and every 2 years from 70 onwards), a medical-psychological examination, carried out in specific 'Medical Driving Test Centres', is obligatory. In these Medical Driving Test Centres, medical, eyesight and psychological tests are carried out with a view to assessing fitness to drive in accordance with Spanish legislation (Royal Decree 772/1997). After the medical-psychological evaluation drivers could be rated as fit to drive, fit to drive with restrictions (the driver is allowed to drive but under certain conditions, as for example a shortening of the validity of the driving licence or a speed limitation), and unfit (not allowed to drive). All the patients included in the study were evaluated by the Medical Driving Test Centres as fit or fit to drive with restrictions.

All the patients were diagnosed as alcohol dependent according to the DSM-IV criteria (APA, 1994). The diagnosis in each centre was carried out by the physician. During evaluation, at least CAGE (Ewing, 1984), AUDIT (Saunders et al., 1993) and MALT (Feuerlein et al., 1977) tests were carried out for all patients in their validated Spanish versions (Rodriguez-Martos et al., 1986; Rubio et al., 1998; Rodriguez-Martos and Súarez, 1984, respectively).

The information collected includes: (i) socio-demographic data (sex, age), (ii) patterns of alcohol consumption (frequency, type of beverage and quantity of alcohol consumed), (iii) information concerning whether the patients had had traffic problems related to their alcohol consumption and what the problems were. When possible, this information was verified with the relatives who accompanied patients to the Test Centre. Information was collected on the following traffic problems.

3.1. Positive breath tests, that is, when the patient reported undergoing a breath alcohol test at the request of the police and which gave a positive result

In accordance with Spanish legislation, motor vehicle users are not allowed to drive if their blood alcohol concentration is greater than 0.5 g/l (or 0.25 mg/l in exhaled air). These limits are 0.3 g/l (0.15 mg/l in exhaled air) for users of vehicles intended