Depression and alcohol-related motor vehicle crashes: Gender differences

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INTRODUCTION

Gender differences related to experiences of depression at the time of an alcohol-related motor vehicle crash (AR-MVC) have important implications for injury prevention. This poster reports preliminary results of a sample of 89 subjects hospitalized for an AR-MVC. Subjects are between the ages of 18-45, an age group known to be at high risk for AR-MVC. Current research indicates that there is an association between alcohol use and depression (Greely, 1992; Hanna, 1994; Lipton, 1994; Neff, 1993). Alcohol is used either as a way of dealing with depression or depression may result from the use of alcohol as a way of coping with stress (Neff, 1993). Depression is associated with an increased daily use of alcohol and in the young adult population stress and depression are associated with increased alcohol problems (Hussong, 1994). Males are more likely to use alcohol as a way of coping with life event stress and depression (Neff, 1993). Thus individual who experience stress and depression are more likely to be involved in heavy or binge drinking and therefore are at greater risk for an AR-MVC.

It is important to understand gender differences and the experience of depression and alcohol use so that appropriate prevention and treatment strategies are developed for individuals involved in as AR-MVC. As men are over-represented in the AR-MVC population and tend to cope with their stress and depression through alcohol use it is important to examine the relationship between alcohol use and depression in this population. While women in the general population are twice as likely as men to experience depression it may be that depressed men are over-represented in the trauma population (Bourbon, 1994). If depressed men are over-represented in the trauma population, specifically those involved in an AR-MVC, then prevention efforts targeted toward assessing and treating their depression as well as alcohol problems would be in order (Goodwin, 1992).

PURPOSE

The purpose of this poster is to examine gender differences in the relationship between two measures of depression at the time of an AR-MVC and drinking behavior at AR-MVC and 1
month post injury. Depression is measured using the Depression Inventory Scale (DIS) to determine if subjects experienced two weeks or more of depression in their lifetime (LTD2) and their experience of depressive symptoms (CRDP) during the 12 months prior to the injury and 12 months post injury. Subjects are followed 12 months post injury and their level of depression is assessed at the time of the injury and again at 1, 3, 6 and 12 months for the time intervals between contacts. The levels of depression are compared by gender as well as changes in drinking behavior post injury by levels of depression and gender.

METHODS

Subject for the study consisted of patients admitted to two Level I Trauma Center in Ohio for an AR-MVC. To be eligible subjects must be hospitalized for an AR-MVC, with an admitting BAC of 10mg/dl or higher, between the ages of 18-45, English speaking, and non-dependent on alcohol. Once consent is obtained, a Health Interview is conducted which includes the DIS and the Timeline Follow-Back (TLFB). The DIS contains the two measures of depression, 1. experience of depression two weeks or more over lifetime (LTD2), and 2. depressive symptoms experienced in the past 12 months (CRDP). The DIS is an inventory of 12 items indicating symptoms of depression. Yes or no is the response choice per item, with 4 or more yes answers indicating depression. The Timeline Follow-Back is used to assess drinking behavior during the 30 days prior to the AR-MVC, drinking behavior over the past 12 months, and at each follow-up interview for the preceding time interval between contacts. Using the TLFB subjects report their drinking behavior for each day using a 30 day calendar with key dates highlighted to aid recall and a standard drink conversion card. The calendar serves as a temporal framework used to recall dates and identify periods of invariant drinking or extended periods of abstinence. Using the TLFB changes in drinking behavior post injury can be determined, including total number of drinks per month, per week, weekends, and the average number of drinks per drinking day.

RESULTS

At present there are 89 subjects enrolled in the study, 68 (76%) are male and 21 (24%) are female. Of the 89 subjects 29 (33%) reported having 2 weeks or more where they felt depressed all the time. Of those subjects who reported LTD2, 23 (79%) were male and 6 (21%) were female. For this sample men were 4 times as likely to report depression of 2 weeks or more duration. Of the 89 subjects 41 (46%) indicated that they experienced depression during the 12 months prior to the AR-MVC. Of those 41 subjects 30 were male (73%) and 11 (27%) were female. Thus in this sample men are three times more likely than women to experience depression during the 12 months before their AR-MVC. Based on these data men who are heavy drinkers and involved in an AR-MVC are more likely to experience depression during...
their lifetime, and in the 12 months prior to their AR-MVC. These findings are contrary to the prevalence of depression in the general population, where women experience depression twice as frequently as men. Thus it appears that alcohol and depression are factors that may contribute to AR-MVC for men.

When the 2 depression scores were correlated with the mean number of drinks per drinking day for the past year, and at 1 month post AR-MVC, males had a significant correlations between depression scores in the past year and drinking and at one month post AR-MVC (r=.25 p <.05 and r=.64 p <.01 respectively). There were no significant correlations for the females in the sample on either dimension. Depressed males are more likely to increase their drinking following an AR-MVC, thereby increasing the potential for future AR-MVC.

Depressed subjects were compared with none depressed subjects in the sample to determine if there was a significant difference in the number of drinker per drinking day between the two groups. There was no significant differences found between the two groups for the two types of depression measured for the sample as a whole or by gender.

**SUMMARY**

These preliminary results indicate that there is a difference in the experience of depression for men who are heavy drinkers and are involved in an AR-MVC, than for women. Men are more likely to experience depression for 2 weeks or more in their lifetime as well as experience depression during the 12 months prior to their crash. Men are 4 times as likely as women to experience depression at some point in their life, and are three times as likely as women to experience depression in the 12 months prior to their AR-MVC. Women in the general population are twice as likely as men to experience depression. Thus the finding raise questions about the relationship between depression, alcohol, and AR-MVC for males. It appears that depression coupled with alcohol use is a factor which predisposes men to AR-MVC. While men may not seek treatment for symptoms of depression, it appears that they may engage in high risk behaviors, drinking and driving as a way of dealing with their depression. This relationship bears further exploration. It is important to target prevention efforts not only toward reduction of alcohol consumption, but toward symptoms of depression as well. Efforts should be directed at detecting depression early in this population of young adult male.

This study is funded by the Center for Disease Control and Prevention, Grants for Unitentional Injury Preventionand Control. These data are part of a larger three year longitudinal study to determine the effectiveness of two types of Brief Intervention strategies for reducing alcohol consumption of non-dependent drinkers hospitalized for an AR-MVC. The study is currently in the third year of data collection.
REFERENCES


