Alcohol Appears to Be Neuroprotective in TBI

BY MICHELE G. SULLIVAN
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CHICAGO — Alcohol may actually protect the cognitive health of some patients who sustain a head injury while intoxicated, Rael Lange, Ph.D., said at the annual meeting of the Research Society of Alcoholism.

His conclusion stands in stark contrast to the extant literature, which almost universally finds poorer cognitive outcomes in intoxicated patients with traumatic brain injury. But this study contains a critical difference from every other examination of this issue, said Dr. Lange of the University of British Columbia, Vancouver: It excluded patients with a prior history of excessive alcohol use.

"Many patients who are intoxicated at the time of injury have a significant history of chronic alcoholism," he said in an interview. "The exclusion of patients with preinjury alcohol use ensured that what we were studying was the effect of day-of-injury alcohol intoxication, rather than day-of-injury alcohol intoxication complicated by the effects of long-term alcohol misuse."

His retrospective study included 36 patients treated for traumatic brain injury (TBI) at a single hospital; 18 of them were intoxicated at the time of the injury, with a blood alcohol level of at least 100 mg/dL. These patients were matched with 18 others with similar baseline characteristic and similar injuries, but who had no alcohol in their system at the time of injury. Chart review and a neuropsychiatric interview ensured that none of the study group had any significant history of preinjury alcohol use.

This was no easy task, Dr. Lange noted. "It's difficult to study the effects of day-of-injury alcohol intoxication free from the influence of preinjury alcohol intoxication because there is a low prevalence of patients who are intoxicated at the time of injury who do not have a significant history of alcohol abuse. It takes a long time to collect enough participants in this important experimental group. We were fortunate to have access to a large database of trauma patients that were seen over a 7-year period."

The retrospective study of 36 patients treated for traumatic brain injury at a single hospital excluded patients with a prior history of excessive alcohol use.

The patients' mean age was 27 years; 70% were male. Their average educational level was 12 years. Motor vehicle accident without seat belt was the most common method of injury (42%), followed by motor vehicle accident with seat belt (11%), and pedestrian struck by motor vehicle (11%). Falls, blows to the head, and assault caused the remainder of the injuries.

One-third of the group sustained a mild TBI with skull fracture; one-third, a complicated mild TBI; and one-third, a severe TBI. Most (70%) had a Glasgow coma score of 13-15; the GCS for the remaining patients was 3-8. Loss of consciousness occurred in 70%, did not occur in 11%, and was unknown in the rest.

All patients underwent a battery of 13 cognitive tests within 9 days of their injury. Whether for raw scores, percentiles, or scores that excluded the lowest and highest percentile, intoxicated patients scored significantly better on more of the tests than did sober patients.

With the 10th percentile as cutoff, low scores on one or more items occurred in 33% of the intoxicated patients and 78% of sober patients. Low scores on two or more items occurred in 17% of the intoxicated and 31% of the sober patients; and low scores on three or more items, 11% of the intoxicated and 39% of the sober patients.

For raw scores, intoxicated patients scored significantly better on 6 of the 13 measures (those measuring delayed verbal memory, delayed visual memory, and executive functioning), and better—but not significantly so—on 4 other tests (those measuring immediate verbal and visual memory, immediate attention span, and verbal fluency).

Several factors may explain the findings, Dr. Lange said. Most studies have focused on long-term, rather than short-term, cognitive outcomes, and there may be a long-term recovery trajectory that his study did not capture. Also, studies that have not controlled for preinjury alcohol abuse may be drawing biased conclusions about the effect of day-of-injury intoxication.

However, he pointed out, the possibility that acute intoxication protects the brain from injury cannot be excluded. Some animal research has found that small to moderate doses of alcohol (1-2.5 g/kg) may have a neuroprotective effect on the brain at the time of injury because of the inhibition of N-methyl-D-aspartate–mediated excitotoxicity. In humans, some studies have suggested that moderate doses of alcohol are associated with reduced mortality.

Dr. Lange said one explanation for the findings the investigators were unable to discount was the "neuroprotection" hypothesis. However, he said, the neurophysiologic processes that may be altered at the time of injury because of moderate alcohol intoxication are not understood. "We must consider this explanation of our findings to be speculative at best," he said. ■

Discrepancies Found in Pregnant Women's Reports About Drug Use

BY JOHN R. BELL
Associate Editor

AUSTIN, TEX. — A significant percentage of pregnant women are not accurately reporting their use of alcohol, cigarettes, or illegal drugs to their physicians, Dr. Mary Ellen Lynch said in a poster presented at the annual meeting of the Society for Research on Nicotine and Tobacco.

She and her coinvestigators recruited 347 new mothers from Atlanta-area hospitals, whom they interviewed soon after the women gave birth regarding their drug, alcohol, and tobacco use in the 3 months before conception and during pregnancy. The investigators administered the same interview to the mothers 6 months later and compared the results of the interviews against the women's medical records.

The investigators found discrepancies, with the medical records showing far less tobacco, alcohol, and illegal drug use than the interviews revealed, said Dr. Lynch of Emory University, Atlanta.

For example, the medical records of the 13% of the 132 women who at the first interview reported having smoked in the third trimester did not report this fact, and of the 195 mothers who in the hospital interview said they had smoked before pregnancy, 7% had medical records that did not reflect this. Moreover, at the 6-month interview, some mothers changed their stories. Of the 140 women who had reported smoking before pregnancy in the hospital interview and who were still enrolled in the study, 6% denied it at the 6-month interview.

The medical records of the 13% of the 132 women who at first interview reported having smoked in the third trimester did not report this fact.

These trends were similar for alcohol use. In the hospital interview, 158 mothers said that they had drunk alcohol before pregnancy, but 66% of them had no drinking recorded in the medical record. Of the 95 mothers who admitted drinking during pregnancy in the hospital interview, 91% had no alcohol use reported in the medical record.

Use of illegal drugs was surveyed in both interviews but was not reported in the abstracted medical records. However, the interviews showed a trend that was opposite that for tobacco use, in that the women were more likely to report drug use at the 6-month interview than at the hospital interview, Dr. Lynch reported.

For marijuana use, 13% admitted in the hospital interview to having used it at any time and 7% to using it during pregnancy—figures that rose to 66% and 15%, respectively, at 6 months. In a similar fashion, 1.1% initially reported any prior use of cocaine and 0.3% reported use while pregnant, but nearly 13% and 1% reported each, respectively, at the 6-month interview. This pattern was observed for reports of amphetamine and methamphetamine use as well.

"I think people are reluctant to say that they smoke to health care providers, due to the stigma that's involved," Dr. Lynch said.

This suggests that someone not affiliated with the hospital should ask about these things, rather than a physician or a hospital employee. ■

EMR Systems Can Help Hospitals Target Smokers

WASHINGTON — Adding a smoking cessation component to electronic medical record systems improves the likelihood that hospitalized individuals with a history of smoking will receive cessation counseling, according to study results presented at a conference sponsored by the National Patient Safety Foundation.

Because hospitalization forces patients to temporarily abstain from smoking, identifying smokers when they are hospitalized with other illnesses may help them to quit, Dr. Vikram Verma wrote in a poster.

Dr. Verma and colleagues at Kings County Hospital Center in Brooklyn, N.Y., reviewed 420 patient charts during the 6-month period prior to adding a smoking cessation component to the electronic medical record (EMR). The researchers identified 62 smokers (15%). Of these, 24 (39%) received nicotine replacement therapy and 29 patients refused NRT. For the other nine, the smoking cessation issue remained unaddressed.

The EMR included a mandatory "tobacco evaluation" field to guarantee that the smoking status was assessed in all patients. In addition, an electronic inpatient admission order with a reminder to prescribe transdermal NRT appears in the records of all patients who smoke, and any patients who are "positive" in the smoking history field are automatically referred to a smoking cessation counselor.

During the 6-month period after adding the smoking cessation field to the EMR, the researchers identified 85 smokers when they reviewed another 420 patient charts. The issue of smoking cessation was addressed in 100% of those patients, although only 20 (24%) were receptive to NRT and 65 (76%) refused NRT.

"The program facilitated our efforts in providing smoking cessation counseling and offering NRT to all these identified patients," the researchers said. Also, adding smoking status to the EMR helped physicians retrieve information more easily, which may help with long-term studies of patients' smoking status after they leave the hospital.

—Heidi Splete