Civilian TBI Data Show Dire Long-Term Outcomes

BY HEIDI SPLETE
Senior Writer

WASHINGTON — Long-term data from a registry of civilians with traumatic brain injury may yield information that is relevant to the care of injured veterans returning from Iraq and Afghanistan, said Jean A. Langlois, Sc.D., at a meeting on traumatic brain injuries sponsored by the Institute of Medicine.

During her presentation, Dr. Langlois noted that there are relatively few long-term cohort studies of blast-induced TBI and the possible combined effects of these injuries and posttraumatic stress disorder (PTSD). The data she presented showed that civilian survivors of TBI often develop costly disabilities. More aggressive treatment might make a difference. "I think we will be seeing several directions for interventions, including electrical brain stimulation," Dr. Langlois said.

Approximately 124,000 civilians in the United States are hospitalized each year with TBI, and about 40% of these patients will experience long-term disabilities, said Dr. Langlois, an epidemiologist at the Centers for Disease Control and Prevention.

Findings from previous studies have shown that even uninjured military personnel who return from combat are at increased risk of psychosocial and psychiatric problems, including PTSD, major depression, suicide, impaired social function, and limited ability to work, she noted.

She reviewed data from four population-based studies using the South Carolina Traumatic Brain Injury Follow-up Registry that included patients with TBI who required hospitalization. The TBI was severe in 45% of patients, moderate in 15%, and mild in 40%. Patients were aged 15 years or older, 60% were male, and 75% were white.

The first of the four studies evaluated psychosocial health in 2,118 patients 1 year after TBI. Based on the scores from a validated social function scale, 29% of the TBI patients reported poor psychosocial health 1 year after their injuries, which is more than one standard deviation below the population norms, Dr. Langlois said.

"We found almost double the rate of psychosocial health problems [compared with the rate in] the general population, but only 36% reported receiving any mental health care after TBI," she said (Arch. Phys. Med. Rehabil. 2006;87:953-61).

Factors associated with poor psychosocial health 1 year after TBI included female gender, preinjury or postinjury psychiatric conditions, inadequate social support, physical limitations for activities of daily living, and preinjury drug or alcohol abuse problems.

Surprisingly, adults with TBI were less likely to report heavy alcohol consumption 1 year after injury, based on data from 1,606 patients.

The researchers used the CDC's Behavioral Risk Factor Surveillance summary questions to assess drinking habits. They found that 94% of the patients reported drinking the same amount or less alcohol 1 year after TBI than they did before TBI. And 50% of those who called themselves heavy drinkers reported drinking less. Heavy drinking was defined as an average of five or more drinks per occasion, or 22 or more drinking days within a month (J. Int. Neuropsychol. Soc. 2005;11:322-30).

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But compared with the general population, the TBI population was more likely to binge drink (defined as five or more drinks on one occasion), and almost twice as likely to have five or more occasions to binge drink. Factors associated with heavy drinking were male gender, younger age, lack of support, diagnosis of depression since TBI, and self-reported fair to moderate (vs. excellent) mental health.

Also, research has shown that substance abuse problems may surface in later years after TBI, rather than immediately following the injury, said Dr. Langlois, citing a review of evidence that, on average, the quantities of alcohol consumed by TBI patients increased over time after their injuries (Arch. Phys. Med. Rehabil. 1995;76:302-9).

Clinical implications of heavy drinking include decreased recovery from TBI, increased impulsivity, exacerbation of cognitive problems, increased risk for seizures, and increased risk for additional brain injuries, Dr. Langlois added.

A third study focused on employment 1 year after TBI. These findings may have unique implications for returning military personnel who may not be able to redeploy and who will need to rejoin the civilian work force, Dr. Langlois said. The employment study included patients from the South Carolina database, plus data on people with TBI who were not in the South Carolina registry, for a total of 3,444 patients (2,487 men and 957 women).

At 1 year after TBI, a majority (41%) of the patients had stopped working, 36% had kept the same hours, 13% were working fewer hours, and 10% were working more hours, Dr. Langlois said.

Factors associated with not working included a longer hospital stay, nonwhite race, and having Medicaid or workers' compensation.

When the patients were divided by gender, men aged 20-24 years were the most likely to be working after 1 year, possibly because they tended to be the primary wage earners, whereas older men may have better disability or health benefits, Dr. Langlois noted. By contrast, women aged 18-24 years were most likely to be not working 1 year after TBI, possibly because they tend to be caring for children at home or because they may have complications if their injuries resulted from domestic violence, Dr. Langlois said.

Dr. Langlois concluded with a study of mortality within 1 year of TBI based on the South Carolina population data from 3,679 persons hospitalized with TBI (J. Head Trauma Rehab. 2005;20:257-69). Overall, the risk for all-cause mortality was seven times higher, compared with the U.S. death rate, and 80% of these deaths were reported as being related to the TBI, Dr. Langlois said.

Patients with severe TBI were significantly more likely to die within 15 months, compared with mild or moderate cases. Other factors associated with mortality from TBI included older age (75 years or older) and more comorbid conditions (three or more). The most common comorbidities were heart disease (48%), hypertension (29%), and fluid/electrolyte imbalance (21%). ■

Cigarette Smoking Reduces Parkinson's Risk

BY MARY ANN MOON
Contributing Writer

A pooled analysis of 11 clinical studies has confirmed that cigarette smoking protects against Parkinson's disease in a dose-dependent manner.

Many studies have suggested that smoking may play a protective role in PD, but most have been too small to provide definitive answers. Dr. Beate Ritz of the University of California, Los Angeles, and associates conducted a pooled analysis of eight case-control studies and three cohort studies involving 2,816 subjects who had PD and 8,993 controls. This large data set "enabled us to investigate aspects of cigarette smoking and subgroup-specific associations that could not be addressed adequately in previous studies," they noted.

The risk of developing PD decreased as pack-years of cigarette smoking increased, so that the average relative risk for the disease dropped 5%-8% for every 10 pack-years of smoking. This dose-response pattern was seen in both men and women, and it was not affected by subjects' educational status.

There was also a strong dose-response trend for the number of years that had elapsed since smoking cessation. Current smokers and smokers who had recently quit showed the lowest risk for PD. People who had quit smoking in the past had a higher risk for PD, but their risk was still lower than that of people who had never smoked (Arch. Neurol. 2007;64:990-7).

Two possible mechanisms for this protective effect have been proposed. Substances such as nicotine in tobacco smoke may promote the survival of dopaminergic neurons, or smoking may alter the activity of metabolic enzymes and thus the production of toxic metabolites.

It is also possible that the same genetic or constitutional traits that raise susceptibility to PD may also deter subjects from smoking. Such traits could be a common cause for both smoking behavior and PD, Dr. Ritz and associates noted.

Tobacco's protective effect appeared to wane in subjects aged 75 and older, another finding that has been reported in previous studies. This is consistent with the hypothesis that smoking delays rather than prevents the onset of PD, the researchers added. ■