

TBI Linked to Adverse Neurologic Outcomes

BY MARY ELLEN SCHNEIDER

Soldiers returning from Iraq and Afghanistan who have suffered severe or moderate traumatic brain injury are at increased risk for certain neurodegenerative symptoms such as Alzheimer-type dementia and parkinsonism, according to an Institute of Medicine report.

The IOM also found limited but suggestive evidence of a link between mild traumatic brain injury (TBI) accompanied by loss of consciousness and Alzheimer-type dementia and parkinsonism.

The findings highlight the potential to underestimate adverse neurologic consequences in returning soldiers, many of whom have been exposed to some type of explosion resulting in traumatic brain injury, said Dr. Samuel J. Potolicchio, professor of neurology at George Washington University in Washington, and a member of the IOM Committee on Gulf War and Health.

"We really have absolutely no idea about how much of a blast injury you need in order to have a neurological health outcome," Dr. Potolicchio said.

Physicians need to take a careful history of all returning service members to determine their exposure to explosions and other hazards in a war zone, he said.

The increasing power of explosive devices as well as other weapons accounts for rates of nonpenetrating TBI and blast-related injury in the current Iraq and Afghanistan wars that are much higher than in previous conflicts. During the Vietnam War, for example, TBI accounted for about 12%-14% of combat casualties, compared with about 22% in Iraq and Afghanistan, according to the IOM report.

The Department of Defense estimates that more than 5,500 military personnel have suffered TBI in Iraq and Afghanistan as of January 2008.

Most of these veterans will seek medical treatment in a Department of Veterans Affairs clinic, but VA providers may be unable to keep up with the demand in certain areas, or the VA clinic may be too far away from the patient's home and civilian neurologists might see some of these patients, Dr. Potolicchio noted.

The IOM committee reviewed about 1,900 peer-reviewed studies to determine the long-term consequences of exposure to both penetrating and closed TBI,

including blast injuries. The committee focused on clinical and epidemiologic studies of adults who suffered long-term health effects due to occupational injury, motor vehicle accident, sports injury, gunshot wound, and military combat. The review was requested by officials at the VA.

In addition to the evidence of neurodegenerative effects, the IOM committee found a positive association between moderate or severe TBI and hypopituitarism and growth hormone insufficiency. There also was a positive link to long-term adverse social functioning, such as unemployment and diminished social relationships. Moreover, mild to severe TBI was associated with depression, aggressive behaviors, and postconcussion symptoms, including memory problems, dizziness, and irritability.

The committee also identified sufficient evidence of a causal relationship between penetrating TBI and unprovoked seizures, and severe or moderate TBI and unprovoked seizures.

Despite the existing evidence, the committee noted a need for continued research, with a special emphasis on blast-induced neurotrauma. The Department of Defense and the VA should support prospective, longitudinal studies that could confirm reports of long-term or latent effects of blast exposure, and answer questions about recovery times and other factors that could improve or worsen outcomes.

To gain more data on the effects of TBI, the IOM committee also called on the VA to include a comparison group of veterans as part of its Traumatic Brain Injury Veterans Health Registry. One of the flaws in the available evidence is the lack of adequate control groups, the committee wrote.

The committee called for the Defense Department to conduct predeployment neurocognitive testing of all deployed military personnel and postdeployment testing of a representative sample of military personnel, including those with TBI, those with non-TBI injuries, and uninjured service members who did not have blast exposure. This type of information would help researchers address questions that cannot be answered with the currently available research—such as the predeployment cognitive ability of an individual and the extent to which TBI affects baseline functioning. ■

THE EFFECTIVE PHYSICIAN

Opioids for Noncancer Pain

BY WILLIAM E. GOLDEN, M.D., AND ROBERT H. HOPKINS, M.D.

Background

The use of chronic opioid therapy (COT) has increased substantially over the last 20 years for noncancer pain. The American Pain Society and the American Academy of Pain Medicine released clinical guidance in 2009 to assist clinicians with the difficult therapeutic management of these patients.

Conclusions

Chronic pain is defined as pain that persists beyond normal tissue healing time, usually 3 months. COT usually does not result in complete relief of such pain; clinical trials indicate a 2- to 3-point improvement on a 10-point pain scale.

Despite the growth in COT, evidence regarding its benefits and safety is sparse. Accordingly, new guidelines reflected consensus recommendations in lieu of evidence-supported practices.

Surveys indicate that physicians have limited understanding of the policies that govern the prescribing and dispensing of scheduled medications.

Accidents, vehicular fatalities, and impaired driving citations have not been associated with COT, and studies have not demonstrated diminished performance on standardized driving tests.

No studies have assessed the impact of COT on work safety.

Nausea and vomiting are common side effects during initiation of COT that tend to diminish with continued exposure. Similarly, sedation and diminished mentation also improve with continued use.

Several studies have documented hypogonadism resulting from diminished levels of dehydroepiandrosterone in COT patients who are receiving sustained-released opioid preparations.

Methadone has a prolonged but highly variable half-life that ranges from 15 to 60 hours or longer. Few trials have documented the risks and benefits of its use for chronic noncancer pain. Safe initial doses in an opioid-naïve patient start at 2.5 mg every 8 hours.

Implementation

Clinicians should be aware of substantial recent policy changes in state and federal regulations that govern COT practice.

COT should not be used prior to trials of anticonvulsants for trigeminal neuralgia, steroids for certain inflammatory diseases, or other interventions that are effective for specific conditions.

There is insufficient evidence to support a trial of parenteral opiates to establish the potential effectiveness or dosing of COT. There is also inadequate evidence to recommend short- vs. long-acting agents or as-needed vs. continuous opioid dosing.

Prior to initiating COT, physicians should set realistic expectations about potential pain relief. Patients should be assessed for treatable causes of underlying pain, psychosocial factors, and potential for diversion and abuse.

Standardized risk assessment tools such as the Screener and Opioid Assessment for Pa-

tients with Pain and the Opioid Risk Tool can assist in initiating therapy.

Clinicians should obtain informed consent prior to initiating COT and consider sharing a written management plan with the patient. Such plans could include the role of the prescribing physician, random urine screens, prescription limits, frequency of office visits, and consequences of agreement violations.

Initiation of COT in opiate-naïve patients should start at low doses and be increased slowly. Short-acting agents are preferable for beginning therapy.

Special caution should be exercised in elderly or frail patients.

COT patients should have a primary coordinating physician to manage their medications and integrate recommendations of multidisciplinary consultants. Referral to other multidisciplinary consultants may be necessary to optimally manage the complexities of a specific patient's presentation.

Clinicians should regularly assess and document pain intensity, functional status, adherence, and side effects.

Urine drug screens may be appropriate for patients who are at high risk for diversion or substance abuse.

Patients who are receiving opioid analgesic therapy should be encouraged to store their medication in a secure location such as a medicine safe in order to reduce the likelihood of diversion.

Methadone should not be used for breakthrough or as-needed pain relief.

In the absence of cognitive impairment, no evidence supports restriction of driving for patients using COT. Clinicians should counsel patients about the risks of driving if impaired and that such risk is greatest when starting or increasing COT. Likewise, other impairing substances like alcohol or sedating drugs should be avoided.

There is no theoretical dose ceiling, but patients with refractory pain requiring more than 200 mg of morphine equivalent medication a day should be considered for additional multispecialty evaluation or rotation to a different opioid agent.

Reference

Chou R., et al. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *J. Pain* 2009;10:113-30.



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