Mild traumatic brain injury

Diagnosis

While it's fairly obvious when workers sustain a moderate or severe brain injury, mild traumatic brain injury (TBI) may be less obvious.

Shortly after injury, many workers show signs and symptoms that fall into three general categories: cognitive, behavioral, and physical. A diagnosis of mild TBI can be based on the following:

- Mechanism of injury, including a direct blow or force to the head.
- Alteration in mental status up to and including loss of consciousness (LOC) for less than 5 minutes. If possible, you should confirm the length of the LOC with an eyewitness, such as a fellow worker, bystander, or emergency/hospital personnel.
- Glasgow Coma Scale (GCS) ≥ 13.
- Post-amnestic (retrograde) or pre-injury (anterograde) amnesia of less than 30 minutes.

Imaging

Less than 10% of those with mild TBI have any positive CT changes. Indications for CT scan include the following:

- GCS less than 15 at 2 hours post-injury.
- Cranial fracture—depressed or open—on clinical examination.
- Signs of basal skull fracture.
- Vomiting ≥ two episodes.
- Worker is 65 years or older.
- Posttraumatic amnesia for ≥ 30 minutes (NB: this excludes mild TBI).
- Dangerous mechanism of injury (e.g., struck by a vehicle, fell ≥ 3 feet or ≥ 5 stairs).

Other symptoms

In spite of cognitive complaints by some patients, no testing reliably supports cognitive changes resulting from mild TBI.

Treatment of mild TBI

Recovery from mild TBI is dependent on clear diagnosis and treatment of underlying issues by knowledgeable clinicians and appropriate education and treatment of workers and their families.

Immediate treatment includes observation for at least 24 hours to ensure any intracranial complications are diagnosed. And, of course, the injured worker should be immediately removed from situations where he or she is at risk of further blows to the head. Guidelines recommend removal from sports for at least 1 week while signs and symptoms of concussion continue, and for those with post-traumatic amnesia or any LOC ≥ 15 minutes.

Not all who present with dizziness, nausea, tinnitus, short-term memory loss, and other symptoms have a traumatic brain injury. Labeling can sometimes result in a predetermined outcome. However, with active daily rehabilitation in a non- "brain injury" program, 80% demonstrate improvement and return to work within 3 months.

Since client presentation is based on symptoms and soft signs, clinical judgment leading to the conclusion that the worker may have a head or musculoskeletal (MSK) injury is appropriate. In the absence of clear underlying pathology, the focus of treatment should be on symptom relief leading to recovery of function.

When the worker is involved in a high-risk job, the following steps should be taken: early education—within days—in a quiet, supportive environment; treatment of MSK-associated symptoms; slow reintroduction of modified duties; and early vocational rehabilitation. Most community-based outpatient rehab programs provide this kind of therapeutic setting. It's useful to reassure patients that mild TBI symptoms do not worsen over time, and that new signs and symptoms are likely a manifestation of something other than brain injury (e.g., inability to cope, pre-existing behavioral or cognitive factors, lack of support). It is important for the injured worker, family, and treating clinicians to recognize that symptoms overlap between cervical MSK injuries and the suspected mild TBI.

Rate of recovery

A 2003 WorkSafeBC literature review showed that, on average, an injured worker with a diagnosis of mild TBI took 3 to 4 weeks off work postinjury. Ninety-seven percent returned to work within 6 months.

Patient characteristics found to adversely affect disability duration include lower education, low transferable vocational skills, poor support, lack of knowledge of underlying cause of symptoms, type of occupation, older age, lack of motivation, lack of encouragement to return to work, and poor coping skills. Only a small proportion of patients with mild TBI developed post-concussion syndrome.

If you have concerns or require assistance with a worker patient with mild TBI, please contact a medical advisor in your local WorkSafeBC office.

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