

# Traumatic Brain Injury (TBI)

## Rehabilitation issues in Mild TBI

» *A distillation of best practice reflecting ACC's current position*

» NOVEMBER 2006

- Headache is a common symptom experienced after mild TBI.
- Seizure alone is rarely a sign of an intracranial haematoma.
- Low mood that persists beyond the first few weeks may justify the use of antidepressant medication.
- Both physical and cognitive fatigue may be evident following a mild TBI.
- For TBI in general, Maori and Pacific people carry a disproportionate burden with regard to incidence and possibly adverse outcome.

## Introduction

This Review covers common issues in mild traumatic brain injury (TBI) that need management in the rehabilitation phase. This is the fourth and final Review based on the newly published Guidelines: Traumatic Brain Injury: Diagnosis, Acute Management and Rehabilitation.<sup>1</sup>

The Guideline states that, “delivery of rehabilitation is most effective when done by a coordinated, multidisciplinary team using an interdisciplinary approach”.<sup>1</sup>

## Common Symptoms

### Headache

Headache, a common symptom after mild TBI, can be actively managed if required. Although headaches can be troublesome in the first few days and weeks, they usually settle. Reassurance is important in initially managing it. In the first few days, as-required paracetamol or paracetamol with codeine may be all that is needed. Regular paracetamol (4g/day in four divided doses) for several days can break a cycle of frequent headache. However, it is important to remember that ‘medication overuse headache’, particularly with codeine-containing compounds, is a frequent cause of ‘chronic daily headache’ in ordinary neurological practice.<sup>2</sup>

### Seizure

A seizure with full recovery, and unaccompanied by any other neurological sign, is unlikely to be secondary to an intracranial bleed.<sup>1</sup> The risk of seizures increase with the presence of intracerebral lesions, skull fractures, or neurosurgical procedures involving structures deeper than the dura. Seizure activity following a TBI can be problematic if it leads to a marked alteration in the level of consciousness, especially after the use of medication like diazepam. It can be difficult to determine whether an altered level of consciousness is secondary to the therapeutic intervention, or is as a result of a developing intracranial bleed. Always consider CT in situations where recovery is not prompt and signs are indicative of a probable intracranial bleed.

### Depression

Low mood that persists beyond the first few weeks may justify the use of antidepressant medication. Selective serotonin reuptake inhibitors (SSRIs) or tricyclic antidepressants can be used. The Guideline<sup>1</sup> states that SSRIs have generally replaced tricyclic antidepressants as ‘drugs of first choice’ in depression because of a better side effect profile. In the context of TBI, low doses are indicated initially and help from a psychiatrist experienced in dealing with patients with TBI can be very useful.

### Fatigue

Fatigue and sleep disturbance are common complaints associated with mild TBI. Although these two symptoms don’t always occur together, lack of sleep or poor sleep patterns can compound the problem of fatigue.

Physical and cognitive fatigue is recognised following TBI.<sup>1</sup>

Cognitive fatigue describes the exhaustion that occurs simply from reading, talking, concentrating, watching TV, or just interacting with other people. Activities that require minimal mental exertion or concentration may help to lessen the fatigue experienced. ‘Physical fatigue’ is noted when “smaller than expected amounts of physical exertion lead to severe tiredness and an inability to proceed.”<sup>1</sup>

Management of fatigue can be difficult. The Guideline notes that in dealing with fatigue, “there is virtually no good quality evidence relating to its extent, impact, and effective treatment”.<sup>1</sup>

Some key considerations that may aid in the management of fatigue include:

- providing reassurance that it is likely to improve in the majority of cases
- acknowledging that it is an issue that will, in the initial stages, require active management

- aiming for a gradual increase in activity levels that will parallel improvement in energy levels. These activities include day to day routine activities (both physical and cognitive), those which involve exercise and sport, and activities aimed at returning to and resuming work tasks or school. It is important to prioritise various physical and cognitive activities as part of a management plan
- reinforce that pacing activities across the day will help patients to achieve more. Individuals should avoid the situation where they start to feel less fatigued, and keep going past their usual tolerance level of activity, only to find that they are unable to operate for a lengthy period afterwards, sometimes days
- encouraging good sleep practices (especially regularity of sleep time, and avoidance of stimulants and alcohol), and proper relaxation times i.e. discourage excess TV viewing or playing of computer games etc
- using a notebook to plan meaningful goals, record activity achievement and identify patterns of fatigue
- acknowledging that fatigue can be exacerbated by low mood. Consider antidepressant medication where appropriate.

### Cultural Issues / Contextual Issues

For TBI in general, Maori and Pacific people carry a disproportionate burden with regard to incidence and possibly adverse outcome.<sup>1</sup> True incidence is difficult to estimate due to the limitations posed by current ethnicity data collection methodologies. The Guideline states that the “incidence of mild TBI (14%) is under-reported in Maori and that moderate or severe TBI is more common (21.5%) than would be expected on demographic grounds.”<sup>3</sup> Providers dealing with Maori and Pacific patients with TBI have to recognise and manage specific rehabilitation needs in these ethnic groups. For Maori in particular, providers need to be culturally sensitive in realising that the person with TBI is not to be considered in isolation, but in the “context of their environment, both physical and social.”<sup>1</sup> The Guideline recommends improving access for Maori to appropriate services, with the aim of improving overall Maori TBI outcomes. Useful background and ideas for the management of Maori and Pacific people with TBI can be found within the Guidelines.

Reviews of this kind necessarily simplify the complexity of patient/family/health professional(s)/work interactions for someone following a TBI. Every patient has a context that needs to be considered and planned around. As with all patients with TBI, it is important to both support the family (whanau) during the rehabilitation process, and to include the partner, caregiver, or family member in relevant discussions. This is important when trying to ascertain a patient’s pre-injury status if there appears to be altered behaviour or cognitive function following a TBI.

People with mental health conditions and drug and alcohol abuse problems are also over-represented in TBI statistics. Drug or alcohol misuse in the presence of a TBI has been shown to demonstrate “higher mortality rates, poorer neuropsychological outcomes and a greater likelihood of repeat injuries and late deterioration following TBI.”<sup>4</sup> Input from health professionals expert in the management of people with TBI and these other conditions is recommended when available. When such services are not available, good systems for liaison between services is necessary to promote best outcomes.

Further detail and information can be sourced from the current New Zealand TBI Guidelines.<sup>1</sup>

### References

- <sup>1</sup> New Zealand Guidelines Group. Traumatic Brain Injury: Diagnosis, Acute Management and Rehabilitation. Wellington, ACC. July 2006.
- <sup>2</sup> Dodick DW. Clinical practice. Chronic daily headache. *N Engl J Med.* Jan 12;354(2):158-65. Review. May 2006.
- <sup>3</sup> Bishop G. ACC Community Residential Services: Implementation of Cluster Housing and Other Residential Services; 2002.
- <sup>4</sup> Corrigan J. Substance abuse as a mediating factor in outcome from traumatic brain injury. *Arch Phys Med Rehabil* 1995; 76(4): 302-9.