

## **Pearls for Traumatic Brain Injury**

Careful management of the victim's cerebral hemodynamic status is important for achieving the best possible outcome.

Despite careful management, in severe brain injury the road to recovery may be difficult with no possibility of returning to the victim's pre-injurious neurological state or normal function.

Cerebral hemodynamic is a balance between cerebral blood volume, cerebral blood flow, cerebral perfusion pressure (>70 mmHg) and oxygen saturation.

While treating a traumatic head injury victim, medical providers should take measures to ensure the brain receives enough oxygenation to heal from the injury.

Different tests will be done to determine the severity of the injury, such as imaging studies including CT scans, MRIs and x-rays.

Other tests will be performed such as electroencephalograms and neurological evaluation by specialists.

Many professionals will be involved in the care and treatment of a loved one that has sustained a traumatic brain injury.

Professional experts such as physical and occupational therapists, speech therapists, psychologists, nurses, social workers, neurologists, neurosurgeons and rehabilitation experts will be participate in the care of the traumatic brain injured victim.

Traumatic brain injury may exert a significant negative impact on the emotional, intellectual, occupational, physical and social well-being of the victim, depending on the severity.

The location and severity of traumatic brain injury will determine the type of symptoms that the victim will experience.

For example, impact to the top of the skull may result in some form of paralysis and impact to the back of the skull (occipital injury) may cause blindness.

Severity of head injury may be evaluated in part, on the basis of clinical presentation, comparing onset to persistence of symptoms.

Mild blunt trauma may cause mild concussion with the immediate onset of symptoms following injury, with symptoms lasting hours to days.

Moderate blunt trauma may cause classic cerebral concussion with immediate onset of symptoms and symptoms lasting up to approximately six months or longer.

Severe blunt trauma is followed by immediate onset of symptoms, or delayed onset of symptoms with high risk for permanent residual neurological defects.

In severe blunt trauma, epidural, subdural and intracerebral bleeding and hematomas may be present.

The victim may not interact with his/her surroundings but appear alert or neurologically depressed.

Severe brain injury may also result in a persistent vegetative state for the victim, where the victim is in a coma for over a month.

Genetic inheritance contributes to the ability and inability to recover from head injuries.

Clinical researchers are studying the effects of genetics on a victimsq susceptibility to complications with head injuries and recovery from head injuries.

Researchers are also exploring ways to reduce secondary and tertiary brain injuries during recovery from traumatic brain injury.

Because of improved surgical and medical management of head injury patients, higher acuity is seen within the patient population admitted to brain trauma in-patient rehabilitation institutions.