Traumatic brain injury treatment

Acute activation of innate immune response in the brain, or neuroinflammation, protects this vital organ from a range of external pathogens and promotes healing after traumatic brain injury.

Secondary brain injury treatment

see Secondary brain injury treatment

Transfer

Traumatic brain injury transfer.

Management in Emergency Room

Blood pressure and oxygenation

Level II: monitor BP and avoid hypotension (SBP <90 mm Hg).

Level III: monitor oxygenation and avoid hypoxia (PaO2 <60mm Hg or O2 saturation <90%).

Hypotension

Hypotension (shock) is rarely attributable to head injury except:

- in terminal stages (i.e. with dysfunction of medulla and cardiovascular collapse)
- in infancy, where enough blood can be lost intracranially or into the subgaleal space to cause shock
- where enough blood has been lost from scalp wounds to cause hypovolemia (exsanguination)

Hypotension (defined as a single SBP < 90 mm Hg) doubles mortality, hypoxia (apnea or cyanosis in the field, or PaO2 <60 mm Hg on ABG) also increases mortality, and the combination of both triples mortality and increases the risk bad outcome. SBP<90 mm Hg may impair CBF and exacerbate brain injury and should be avoided.

Early use of paralytics and sedation (prior to ICP monitoring)

see Sedative for traumatic brain injury.

Intubation and hyperventilation

Indications for intubation in trauma:

1. depressed level of consciousness (patient cannot protect airway): usually GCS≤7

2. need for hyperventilation (HPV).

3. severe maxillofacial trauma: patency of airway tenuous or concern for inability to maintain patency with further tissue swelling and/or bleeding

4. need for pharmacologic paralysis for evaluation or management.

There are currently no established treatments for the underlying pathophysiology in TBI and while neurorehabilitation efforts are promising, there are currently is a lack of consensus regarding rehabilitation following TBI of any severity [1)].

Ask for Alcohol consumption

see Alcohol withdrawal syndrome

see Wernicke's encephalopathy.

Neuroprotection for Traumatic Brain Injury

Neuroprotection for Traumatic Brain Injury

Severe traumatic brain injury treatment

see Severe traumatic brain injury treatment.

Pediatric traumatic brain injury guidelines

Pediatric traumatic brain injury guidelines.

Traumatic brain injury treatment during the Covid-19 pandemic

- Oxygen therapy in the intensive care unit

- A biopsychosocial analysis of risk factors for persistent physical, cognitive, and psychological symptoms among previously hospitalized post-COVID-19 patients
- Electroencephalographic Biomarkers for Neuropsychiatric Diseases: The State of the Art
- Association Between Social Determinants of Health and Concussion Among High School Students in the United States
- Improving Outcomes for Care Partners of Individuals With Traumatic Brain Injury: Results for a mHealth Randomized Control Trial of the CareQOL App
- Examining the risk of delirium in patients hospitalized with COVID-19: Insights from the homeless population
- Impact of COVID-19 pandemic on traumatic brain injury emergency department visits, interfacility transfer and mortality in the United States, 2016-2020: a cross-sectional study
- The Impact of the Pandemic of COVID-19 on the Head Injury Fast-Track System and Surgical Outcome

Treating traumatic brain injuries (TBIs) during the Covid-19 pandemic requires careful considerations to ensure the safety and well-being of both patients and healthcare providers. Here are some important aspects to consider in TBI treatment during the pandemic:

Emergency care: In the event of a severe TBI, emergency medical services and hospitals continue to provide critical care. Protocols are in place to protect both patients and healthcare workers from potential exposure to the virus.

Hospital precautions: Hospitals have implemented infection control measures to minimize the risk of Covid-19 transmission. These measures include screening patients for symptoms, providing personal protective equipment (PPE) to staff, isolating Covid-19-positive patients, and maintaining enhanced cleaning and disinfection procedures.

Rehabilitation services: Rehabilitation is an essential component of TBI treatment. During the pandemic, rehabilitation facilities have implemented safety measures, such as reduced capacity, enhanced cleaning protocols, physical distancing measures, and telehealth options when appropriate.

Telehealth services: Telehealth has played a crucial role in providing ongoing care and support for TBI patients during the pandemic. Telehealth appointments allow healthcare providers to assess patients remotely, provide guidance, monitor progress, and offer therapy sessions when in-person visits are not feasible.

Mental health support: The Covid-19 pandemic has had a significant impact on mental health. It is crucial to address the emotional and psychological well-being of TBI patients, as they may face additional challenges and increased stress during these times. Teletherapy and virtual support groups can be valuable resources for providing mental health support.

Caregiver support: Caregivers play a vital role in supporting individuals with TBIs. They may face additional burdens and challenges during the pandemic. Providing caregiver support through virtual resources, educational materials, and online support groups can help them navigate these difficult circumstances.

Follow-up care: Regular follow-up appointments with healthcare providers are crucial for monitoring TBI recovery progress and addressing any ongoing concerns. Telehealth visits can be utilized for routine check-ups, medication management, and addressing non-emergency issues.

It is important to note that the specific guidelines and protocols for TBI treatment during the Covid-19 pandemic may vary depending on the location, healthcare facility, and individual circumstances.

1)

Marklund N, Bellander BM, Godbolt A, Levin H, McCrory P, Thelin EP. Treatments and rehabilitation in the acute and chronic state of traumatic brain injury. J Intern Med. 2019 Mar 18. doi: 10.1111/joim.12900. [Epub ahead of print] PubMed PMID: 30883980.