Brain injury treatment

- Naochuxue formula attenuates early brain injury following subarachnoid hemorrhage by inhibiting neuronal apoptosis via network pharmacology and in vivo experiments
- Psychological interventions for post-stroke anxiety and depression: Current approaches and future perspectives
- Knockdown of RUNX2 Attenuated A1 Astrocyte Overactivation, Brain Injury, and Cerebral Edema During Ischemic Stroke
- Acceptability of a Brain-Injury-Tailored Yoga and Meditation Program Among Female Patients with Concussion
- Integrating network pharmacology and experimental verification to explore the protective effects of Evodia rutaecarpa in ischemic stroke
- Cerebrolysin with reperfusion therapy in ischemic stroke: a prospective analysis of multimodal brain imaging data from the CEREHETIS trial
- Patterns of Dual-Task Interference in Service Members With Mild Traumatic Brain Injury Using the Portable Warrior Test of Tactical Agility
- Local arterial administration of acidified malonate as an adjunct therapy to mechanical thrombectomy in ischaemic stroke

The treatment of brain injury depends on the type, severity, and cause of the injury. It often involves a multidisciplinary approach and may include medical, surgical, rehabilitative, and supportive interventions.

General aspects

Emergency Care:

Stabilization: In cases of severe brain injury, immediate medical attention is critical. Stabilizing the patient's condition may involve airway management, oxygen support, blood pressure control, and other measures to prevent further injury. Diagnostic Imaging:

CT Scan or MRI: Imaging studies such as computed tomography (CT) scans or magnetic resonance imaging (MRI) help identify the location and extent of brain injury, including the presence of bleeding, swelling, or structural damage. Medication:

Pain Management: Pain relievers may be prescribed to manage headaches or other sources of discomfort. Anti-seizure Medications: These may be administered to prevent or control seizures, which can occur after a brain injury. Corticosteroids: In some cases, corticosteroids may be used to reduce brain swelling. Surgery:

Hematoma Removal: Surgical intervention may be necessary to remove blood clots or hematomas that are putting pressure on the brain.

Skull Repair: In cases of skull fractures or deformities, surgery may be performed to repair or reconstruct the skull. Rehabilitation:

Physical Therapy: Helps improve mobility, balance, and coordination.

Occupational Therapy: Focuses on regaining daily living skills and independence.

Speech-Language Therapy: Assists with communication and swallowing difficulties.

Cognitive Rehabilitation: Targets cognitive impairments such as memory, attention, and problemsolving.

Psychological Support: Counseling or therapy may be beneficial for emotional and psychological wellbeing.

Supportive Care:

Nutritional Support: Ensures proper nutrition, especially if there are difficulties with eating or swallowing.

Respiratory Support: In cases of severe brain injury, ventilatory support may be needed.

Monitoring and Prevention: Continuous monitoring of vital signs and prevention of complications such as infections are essential.

Long-Term Management:

Follow-Up Care: Regular follow-up with healthcare providers for ongoing assessment and management.

Education and Counseling: Patients and their families may benefit from education about the injury, potential long-term effects, and strategies for coping.

Research and Emerging Therapies:

Some experimental treatments and emerging therapies, including those related to neuroregeneration and neuroprotection, are being researched. However, their availability may be limited, and they are typically part of clinical trials. The specific treatment plan is tailored to the individual's unique needs and circumstances. Early and comprehensive care, as well as ongoing rehabilitation and support, are crucial for optimizing outcomes after a brain injury. The involvement of a multidisciplinary team, including neurologists, neurosurgeons, rehabilitation specialists, and other healthcare professionals, is common in the management of brain injuries.

Following acute brain injury, patients in the intensive care unit often undergo hourly or every-otherhour exams ("neurochecks") to monitor for neurodeterioration. LaBuzetta et al. assessed Healthcare provider attitudes towards neurocheck frequency and evaluated providers' ideal neurocheck frequency.

This was a cross-sectional, online survey distributed in Spring 2021 at a tertiary care academic medical center. Providers from multiple intensive care unit and neuroscience clinical specialties including attending faculty, medical trainees, advanced practice providers, and bedside nurses were invited to participate.

Among 177 participants, 61 (34%) and 116 (66%) were self-identified as ordering and performing providers, respectively. The survey response rate was 58% among physicians and 51% among bedside nurses with neurological expertise. The most common medical and non-medical reasons for ordering hourly neurochecks were "a specific diagnosis with anticipated course" and "standard of care", respectively. Compared with ordering providers, performing providers felt guidelines regarding

neurocheck frequency (P<0.01) and duration (P<0.01) should be proscriptive. Conversely, ordering providers felt hourly neurochecks were detrimental to patients with acute brain injury (P=0.02) and believed they would not utilize hourly neurochecks if there was another mode of monitoring available (P=0.03). Performing providers identified multiple patient-related factors impacting the difficulty of and their willingness to perform frequent neurochecks, and only 70% of neurochecks were perceived to be performed as ordered. Both ordering and performing providers preferred every-other-hour neurochecks following acute brain injury.

This survey revealed clinically relevant differences in ordering versus performing provider attitudes about frequent neurochecks. Providers preferred every-other-hour rather than hourly neuro checks ¹.

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LaBuzetta JN, Kazer MR, Kamdar BB, Owens RL, Evans JH, Stone L, Malhotra A. Neurocheck Frequency: Determining Perceptions and Barriers to Implementation of Evidence-Based Practice. Neurologist. 2022 Aug 16. doi: 10.1097/NRL.000000000000459. Epub ahead of print. PMID: 35981307.

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