

**СЕКЦИЯ 13  
«НЕВРОЛОГИЯ И НЕЙРОХИРУРГИЯ»**

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**BRAIN EDEMA**

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***Introduction***

Cerebral edema is excess accumulation of fluid (edema) in the intracellular or extracellular spaces of the brain.

This fluid increases the pressure inside of the skull — more commonly referred to as intracranial pressure (ICP). Increased ICP can reduce brainblood flow and decrease the oxygen your brain receives. The brain needs an uninterrupted flow of oxygen to function properly.

Swelling is the body's response to injury and an inflammatory reaction. Most frequently, this is the consequence of cerebral trauma, massive cerebral infarction, hemorrhages, abscess, tumor, allergy, sepsis, hypoxia, and other toxic or metabolic factors Condition that causes fluid to develop in the brain.

The swelling can occur throughout the brain or in certain areas. Left untreated, cerebral edema can be fatal.

***Aim***

To study the clinical picture and the manifestations Cerebral edema according to literary sources.

***Materials and methods***

A theoretical analysis of literary sources and a synthesis of scientific literature for 2015–2018 was used.

***Results***

Cerebral edema can be difficult for doctors to diagnose without proper tests and a thorough evaluation. There are some symptoms to look for after an injury or infection that could indicate swelling. Some indications of cerebral edema include: headache, dizziness, nausea, lack of coordination, numbness.

In more severe cases of cerebral edema, you may experience symptoms including: mood changes, memory loss, difficulty speaking, incontinence, change in consciousness, seizures, weakness.

Causes cerebral edema. There are several factors that can cause brain swelling. They include: Traumatic brain injury (TBI). A TBI causes damage to the brain. Physical contact and falls can cause the brain to swell. In more severe cases, a TBI can crack the skull and pieces of the skull can rupture blood vessels in the brain and cause swelling. Stroke. Some cases of stroke can cause brain swelling, specifically an ischemic stroke. An ischemic stroke occurs when there's a blood clot near the brain, preventing the brain from receiving blood and oxygen. This can cause brain cells to die and the brain to swell in response to the injury. Infection. Some bacteria can cause illnesses and disorders that lead to brain inflammation and swelling, especially if left untreated. Tumors. Brain tumors can add pressure to areas of the brain, causing the surrounding brain to swell.

Other causes of brain swelling include: high altitude, unhealthy use of drugs, viral infections, carbon monoxide poisoning, bites from poisonous animals, reptiles, and some marine animals.

Cerebral edema is a difficult condition for doctors to diagnose without proper testing. Your diagnosis will depend on your symptoms and the underlying cause.

Some common procedures doctors use to diagnose brain swelling include: physical exam to detect pain, discomfort, or abnormalities, CT scan to identify the location of the swelling, head MRI to identify the location of the swelling, blood tests to determine the cause of brain swelling.

Brain swelling can become a life-threatening condition. It should be treated immediately. Treatment options are meant to restore blood flow and oxygen to the brain while reducing the swelling.

It's also important to treat the underlying cause to prevent any further damage.

There are six common treatment options.

1. Medication.

Depending on the severity of your condition and the underlying cause, doctors may prescribe you medication to help reduce swelling and prevent blood clots.

2. Osmotherapy.

When your brain swells, it accumulates excess fluid. Osmotherapy is a technique meant to draw water out of the brain. This is done using osmotic agents such as mannitol, or high-salt saline. Osmotic therapy also helps improve blood circulation. This will help reduce swelling and ICP in the skull.

3. Hyperventilation.

Some doctors may perform a controlled hyperventilation to help lower your ICP. Hyperventilation causes you to exhale more than you inhale, lowering the amount of carbon dioxide in your bloodstream. Proper blood flow in your brain is dependent upon carbon dioxide. Controlling this process lowers the blood flow in your brain and reduces ICP.

4. Hypothermia.

Another treatment method includes inducing hypothermia. Lowering the body temperature decreases metabolism in the brain and can also reduce swelling.

Though there've been some success stories with this method, controlled hypothermia is still being researched.

5. Ventriculostomy.

This is a more invasive procedure that involves draining fluid from the brain. A doctor will make a small incision in the skull and insert a tube as a drain. This method will relieve ICP pressure.

6. Surgery.

In more severe cases of cerebral edema, you may need surgery to relieve ICP. This surgery could mean removing part of the skull or removing the source of the swelling, such as in the case of a tumor.

7. Prognosis.

Brain swelling is a serious condition that can cause long-term damage to your memory and ability to think. It may also be fatal if treated too late. If you begin to experience side effects after a fall, accident, or while fighting off an infection, visit a doctor immediately.

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**TRANSIENT REVERSAL OF ANOXIC BRAIN INJURY-RELATED  
MINIMALLY CONSCIOUS STATE AFTER ZOLPIDEM ADMINISTRATION**

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***Introduction***

Zolpidem is a unique non-benzodiazepine sedative hypnotic drug that selectively binds to omega-1-aminobutyric acid receptors in the brain. Although used for years in Israel and