

CHILDREN'S ISCHEMIC INSULT: CAUSES, SYMPTOMS, DIAGNOSIS, AND
TREATMENT (VERIEW)

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Annotation: Arterial ischemic stroke in children is a rare but clinically significant condition characterized by acute cerebrovascular disturbance due to cerebral arterial occlusion. This paper examines the main etiological factors, including cardiogenic embolism, vasculopathies, and thrombophilic states. Special attention is given to the clinical manifestations of the disease, diagnostic methods (neuroimaging, laboratory tests), and modern treatment approaches, including thrombolytic therapy and rehabilitation. The prognosis and potential complications are also analyzed. The importance of early diagnosis and a multidisciplinary approach in reducing the risk of disability and improving patients' quality of life is emphasized.

Keywords: stroke, pediatric stroke, arterial ischemic stroke, stroke masks, pre-hospital diagnosis of stroke, early diagnosis of stroke.

Аннотация: Артериальный ишемический инсульт у детей — редкая, но клинически значимая патология, характеризующаяся острым нарушением мозгового кровообращения вследствие окклюзии церебральных артерий. В работе рассматриваются основные этиологические факторы, включая кардиогенные эмболии, васкулопатии и тромбофилические состояния. Особое внимание уделено клиническим проявлениям заболевания, методам диагностики (нейровизуализация, лабораторные тесты) и современным подходам к лечению, включая тромболитическую терапию и реабилитацию. Также анализируются прогнозы и возможные осложнения. Подчеркивается важность ранней диагностики и мультидисциплинарного подхода для снижения риска инвалидизации и повышения качества жизни пациентов.

Ключевые слова: инсульт, детский инсульт, артериальный ишемический инсульт, маски для инсульта, догоспитальная диагностика инсульта, ранняя диагностика инсульта.

Аннотация: Болаларда артериал ишемик инсульт кам учрайдиган, аммо клиник жихатдан ахамиятли патология бўлиб, мия артерияларининг окклюдияси туфайли мияда қон айланишининг ўткир бузилиши билан тавсифланади. Ишда асосий этиологик омиллар, жумладан кардиоген эмболиялар, васкулопатиялар ва тромбофилик ҳолатлар кўриб чиқилган. Касалликнинг клиник кўринишлари, диагностика усуллари (нейровизуализация, лаборатория тестлари) ва даволашнинг замонавий ёндашувлари, шу жумладан тромболитик терапия ва реабилитацияга алоҳида эътибор қаратилган. Шунингдек, прогнозлар ва юзага келиши мумкин бўлган асоратлар таҳлил қилинади. Ногиронлик хавфини камайтириш ва беморларнинг ҳаёт сифатини яхшилаш учун эрта ташхис қўйиш ва кўп тармоқли ёндашувнинг ахамияти таъкидланади.

Калит сўзлар: инсульт, болалар инсулти, артериал ишемик инсульт, инсульт ниқоблари, инсультнинг шифохонагача диагностикаси, инсультнинг эрта диагностикаси.

Arterial ischemic stroke in children is a rare but serious disease associated with impaired cerebral blood supply due to arterial blockage. Despite its lower prevalence compared to adults, stroke in children poses a significant threat to their health and development. AII is an acute disorder of cerebral circulation caused by arterial blockage and impaired oxygen delivery to brain tissue. Although stroke is more commonly associated with elderly people, it can also occur in children, including newborns. Although stroke is more commonly associated with adults, it can also occur in childhood, including newborns. Early diagnosis is crucial for saving lives and preventing serious illnesses. The annual incidence of stroke in children over one month of age is from 6 to 13 cases per 100,000 children. In newborns (perinatal period), the risk of ischemic stroke is estimated at 1 in 4,000 newborns. Data on Uzbekistan: Accurate modern statistical data on stroke in children in Uzbekistan is insufficient. However, it is known that annually more than 64,000 cases of stroke are registered in the country among the general population, with a trend towards an increase in stroke incidence in young people.

Although stroke in children is less common than in adults, it presents a serious medical problem due to the complexity of diagnosis and significant health consequences.

Causes of arterial ischemic stroke in children. The main causes of AII in children differ from those in adults. Among them: Cardiological pathologies: Congenital heart defects, arrhythmias, and cardiomyopathies increase the risk of blood clots forming that can block brain vessels; Injuries and Damage to Blood Vessels: Craniocerebral injuries or arterial dissection can lead to blood vessel blockage; Infections (meningitis, vasculitis) Infections: Meningitis, chickenpox and other infections can cause vascular inflammation and contribute to the formation of blood clots; Hematological diseases: sickle cell anemia, thrombophilia, and other blood clotting disorders increase the risk of stroke; Autoimmune diseases: Vasculitis and systemic lupus erythematosus can affect brain vessels; Metabolic disorders: Some hereditary diseases, such as mitochondrial myopathies or metabolic disorders, can lead to brain ischemia; Risk factors for developing arterial ischemic stroke in children: Family history: Hereditary predisposition to heart diseases or blood clotting. Perinatal factors: Problems during pregnancy and childbirth, including premature birth, hypoxia, or infections. Oncological diseases: Some types of cancer and their treatment (chemotherapy, radiation) increase the risk of thrombus formation. Chronic diseases: Diabetes, hypertension and other systemic pathologies.

Main symptoms of stroke in children: Movement disorders: Sudden weakness or paralysis of one side of the body, facial asymmetry. Speech problems: Difficulty pronouncing words or complete loss of speaking ability. Vision impairment: Sudden loss of vision or double vision.

Seizures: especially in newborns and infants. Behavior changes: Sharp drowsiness, irritability, or loss of consciousness. Headache: Strong, sudden pain, especially if accompanied by vomiting.

Features of symptoms in newborns and infants: Convulsions (often the only sign); Weakness, a faint cry. Disruption of the sucking reflex. Asymmetry of limb movements.

Clinical manifestations: The symptoms of AII in children can vary depending on their age. Newborns may experience seizures, weak crying, lethargy, or difficult feeding. Older children may experience weakness in limbs, facial asymmetry, speech impairment, or impaired movement coordination.

Diagnostic methods: Neurovisualization: The main diagnostic method is magnetic resonance imaging (MRI) of the brain with diffuse-weighted images (DWI), which allows for the detection of ischemia foci. Computed tomography (CT) is used to rule out hemorrhagic stroke.

Doppler angiography of blood vessels: used to assess blood flow and identify vascular anomalies.

Electroencephalography (EEG): used when convulsive manifestations are suspected.

Laboratory tests: Blood tests for coagulogram, glucose levels, lipid profile, and infectious markers help identify possible causes of stroke.

Echocardiography: performed to locate the sources of cardiac embolism.

Differential diagnosis: it is important to distinguish AII from other diseases with similar symptoms, such as migraine, epilepsy, brain tumors, and metabolic disorders.

Modern treatment methods: 1. Drug therapy: Antiplatelet agents (aspirin) to prevent recurrent strokes; Anticoagulants (heparin, warfarin) in the presence of thrombosis; Thrombolytic therapy (alteplase) in case of early detection (in the first hours after the onset of symptoms). 2. Intensive therapy and support of vital functions: Blood pressure monitoring; Supporting breathing if necessary; Correction of water-electrolyte balance. 3. Neuroprotective therapy: Antioxidants to reduce the effects of ischemia. 4. Rehabilitation: Physiotherapy and therapeutic exercises (LFK) to restore motor functions; Speech therapy assistance for speech disorders; Psychological support for the child and family. 5. Surgical methods (if necessary): Decompressive craniotomy for cerebral edema; Endovascular intervention to remove a thrombus.

The prognosis of ischemic stroke in children depends on many factors, including the causes, severity of the brain damage, the speed of medical care, and subsequent rehabilitation. Children have a higher ability for neuroplasticity - the ability of the brain to recover after damage, which often leads to more favorable outcomes compared to adults.

The prognosis depends on the speed of assistance and the severity of the brain damage. Early diagnosis and comprehensive rehabilitation are important. Prevention includes: 1. Regular medical observation - Undergoing scheduled examinations by a pediatrician and narrow specialists (cardiologist, neurologist); Monitor the condition of the cardiovascular system, especially in children with congenital pathologies. 2. Healthy lifestyle: A balanced diet with sufficient vitamins and microelements; Physical activity according to age and

health status; Maintaining a sleep and rest schedule. 3. Control of heart diseases: Maintaining normal blood pressure levels; Control of blood sugar and cholesterol levels; Prevention and timely treatment of infectious diseases. 4. Prevention of injuries: Observing safety rules at home, outside, and during sports activities; Use of protective equipment (helmets, safety belts). 5. Educating parents: Familiarizing parents with the symptoms of stroke in children (sudden weakness, speech impairment, facial asymmetry); Explaining the importance of timely medical attention.

RESULT

Arterial ischemic stroke in children is a rare but serious disease that requires timely diagnosis and treatment. Understanding the causes and risk factors plays an important role in preventing and reducing the likelihood of developing this condition. Modern methods of treating ischemic stroke in children are aimed at quickly eliminating the cause, preventing complications, and restoring the body's functions. Early seeking medical help and a comprehensive approach significantly increase the chances of a favorable outcome.. Prevention of stroke in children is a set of measures that includes regular medical observation, a healthy lifestyle, prevention of injuries, and timely treatment of chronic diseases. Careful attention to the child's health and parents' awareness will help reduce the risk of stroke and preserve the baby's health. Addressing these issues requires a comprehensive approach, including raising awareness, improving diagnostic methods, and developing effective rehabilitation programs for children who have suffered strokes.

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