

## **CURRENT STATE OF RADIOLOGICAL DIAGNOSTICS OF PATIENTS WITH ACUTE CEREBRAL DISEASE**

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**Abstract:** Hemorrhagic stroke is a spontaneous (non-traumatic) hemorrhage into the cranial cavity. The term "hemorrhagic stroke" is usually used to refer to intracerebral hemorrhage that occurs as a result of any vascular disease of the brain: atherosclerosis, hypertension, and amyloid angiopathy. Most often, hemorrhagic stroke occurs against the background of high blood pressure

**Keywords:** radiation diagnostics, morbidity, quality of medical care, innovative technologies, stroke, cerebral infarction

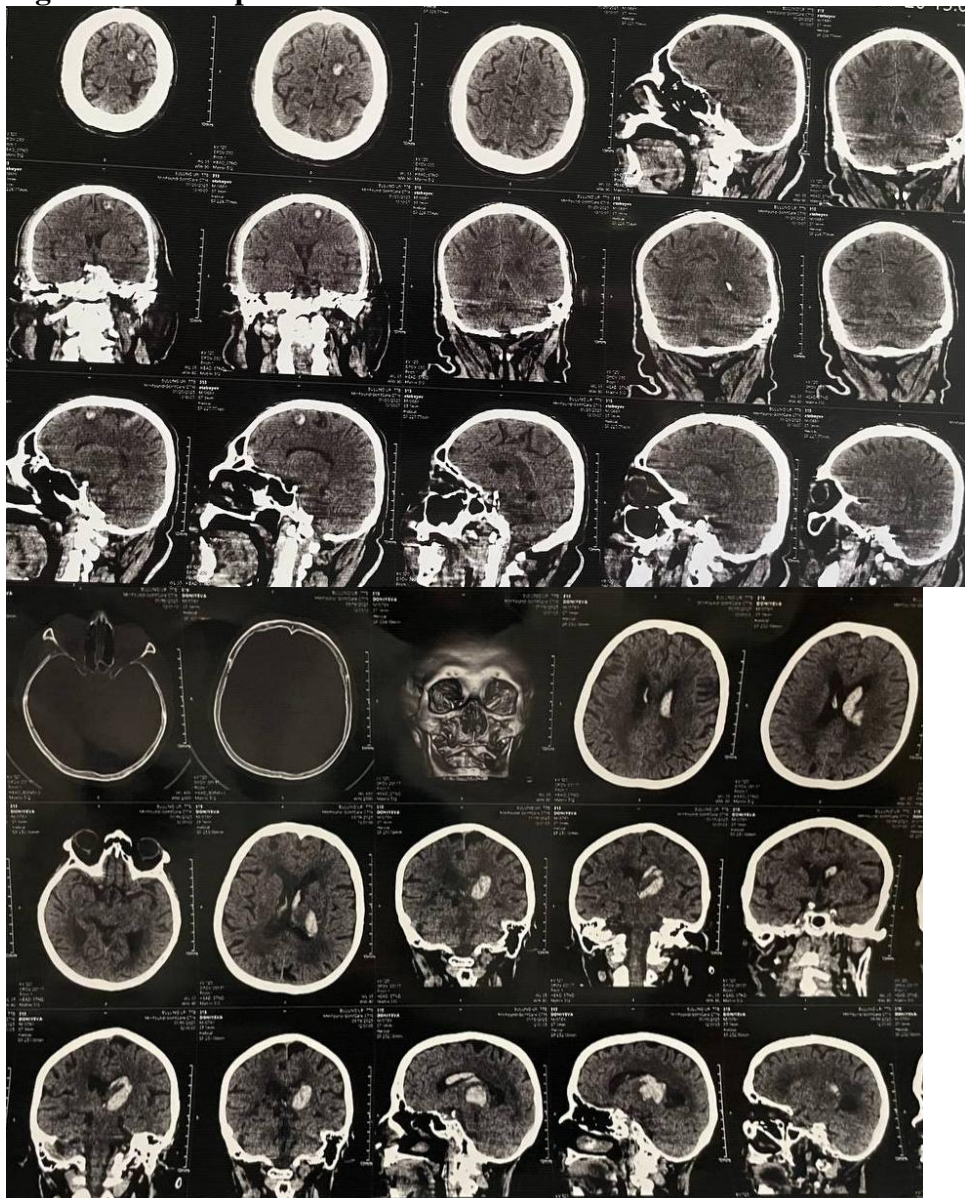
**Introduction.** Due to the introduction of the latest computerized technologies in practical healthcare, created on the basis of modern electronic and microprocessor technology, digital image processing methods, the possibilities and role of radiation diagnostic methods in medicine are increasing even more. In healthcare, for a long time, when organizing the radiation diagnostic service, financial losses due to irrational use of equipment and duplication of radiation studies at the stages of treatment and diagnosis of a patient were not taken into account to the proper extent, therefore, the issues of economic planning of a medical organization are becoming relevant also because inpatient treatment is the most expensive medical service. Innovative medical and organizational technologies not only allow achieving high results in the treatment of patients, but also contribute to improving the quality of medical care for the population. The main methods of radiation diagnostics, complementing each other, are informative, accessible, easy to perform and occupy one of the leading places in the system of clinical and preventive examination of the population.

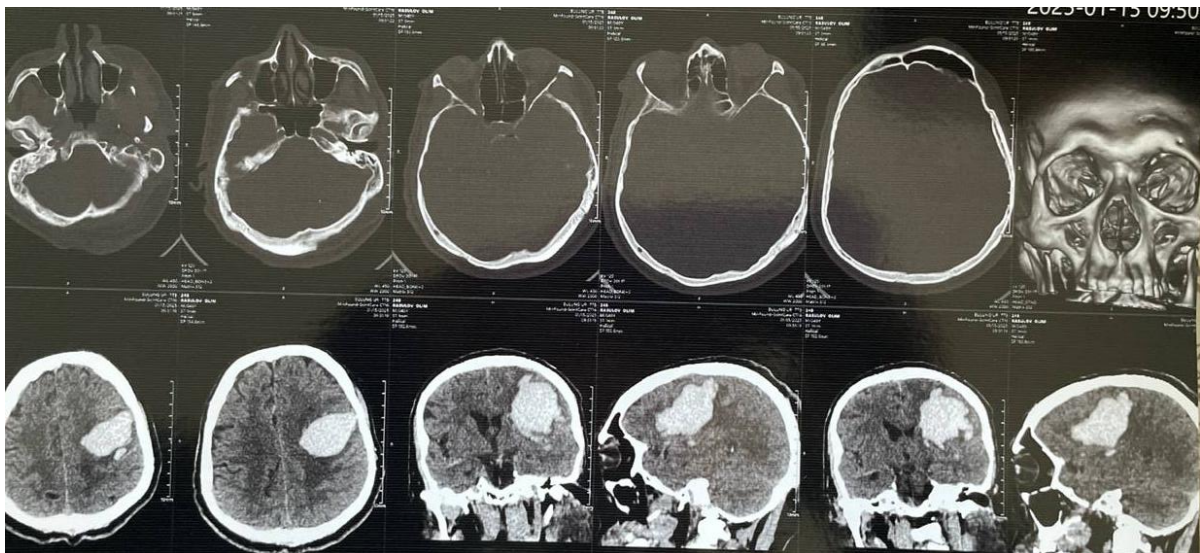
In modern medicine, the last decade has been marked by the rapid development of new diagnostic methods and techniques, the emergence of additional capabilities for classical diagnostics, and other approaches to the use of diagnostic equipment. The main methods of radiation diagnostics, complementing each other, are distinguished by their information content, accessibility, ease of implementation, and occupy one of the leading places in the system of clinical and preventive examination of the population. Thanks to the introduction of the latest computerized technologies in practical health care, created on the basis of modern electronic and microprocessor technology, digital image processing methods, the possibilities and role of radiation diagnostic methods in medicine are increasing even more [1, 2].

**Materials and Methods:** Health care quality management includes resources consisting of personnel, equipment and diagnostic equipment, buildings, medicines and medical supplies, the process, treatment and diagnosis using modern treatment technologies that are effective and safe for the patient, as well as the result, i.e. the outcome of the treatment [3]. In health care, for a long time, the organization of a radiation diagnostic service did not take into account the financial loss due to the poor use of equipment and the duplication of radiation research during the treatment and diagnosis stages of the patient, so that the economic planning of the medical organization becomes relevant also because inpatient treatment is the most expensive medical service [4]. A

total of 56 children aged 6 months to 3 years were examined during the recovery period of the haemorrhagic stroke. Nosological forms of child haemorrhagic stroke were presented as follows: parenchimatosis (39.29 per cent), subarachnoid hemorrhage (23.21 per cent), mixed (37.50 per cent). By gender: boys accounted for 58.93% (33 observations), girls 41.07% (23 observations). Retrospective analysis of anamnestic data was carried out, defining the age of development of haemorrhagic stroke, clinical symptoms and acute treatment. Clinical currents and acute treatment have been studied. The neurological examination of children during the recovery period was conducted according to the classical method [6], taking into account the age characteristics. To determine the development, development and development of basic psychosocial functions by psychologists and speech therapists

**Fig. 1. MSCT of patients with stroke**





Hemorrhagic stroke is one of the most severe forms of vascular pathology of the brain. Intracerebral hemorrhage accounts for 10% of all strokes, and subarachnoid hemorrhage - 5%. The frequency of intracerebral hemorrhage in the world is from 10 to 20 cases per 100,000 population per year. Clear diagnosis of the nature of stroke at the earliest stages of the disease is extremely important in choosing the tactics of treating the patient. Currently, effective methods of computed tomography and magnetic resonance angiography have also been developed, which successfully compete with direct X-ray angiography, in particular in the diagnosis of vascular changes in cases of intracranial non-traumatic hemorrhages. Acute intracranial hemorrhages have uniform and well-defined signs on images obtained by X-ray computed tomography [6, 7]. Computer tomography is widely used to differentiate the nature of cerebral stroke, which is associated with reliable and accurate detection of hemorrhages by this method, especially in the first days. Computer tomography remains the method of choice for diagnosing intracranial hemorrhages in the acute period, but with the transition to the subacute and especially the chronic stage, the diagnostic value of this method is significantly reduced and the advantages of magnetic resonance imaging increase.

**Results:** Currently, X-ray computed tomography of the brain is an international standard in the diagnosis of hemorrhagic stroke, allowing not only to conduct differential diagnostics of the nature of cerebrovascular accident and establish its localization, but also to identify the presence of a possible cause in the patient. Magnetic resonance imaging does not always determine small aneurysms and vascular malformations, but is more sensitive than computed tomography in detecting cavernous malformations. Angiographic studies also occupy an important place in the complex of diagnostic tests for hemorrhagic stroke and are usually carried out in all patients with an unclear cause of hemorrhage, primarily in young people and in people with normal blood pressure. The initial manifestations of the disease were characterized by gradual (73.21%) and acute development of symptoms (26.79%) in children with subarachnoid and mixed stroke. With gradual development of clinical symptoms the following were noted: anxiety (26.79%), decreased activity (17.86%), vomiting (21.43%), refusal to breastfeed (75%) with increasing severity of the disease, convulsions (30.36%), manifestations of DIC syndrome (8.93%). In all cases, children showed a decrease in spontaneous motor activity in the first hours of the disease, impaired consciousness (stupor, coma), respiratory rhythm, decreased response to stimuli, decreased or suppressed reflexes of innate automatism. During the first 24 hours of the disease, all children were hospitalized. In the acute period of stroke, surgical treatment was performed in 3 (5.36%) cases, the remaining children received conservative treatment. CT examination of the brain made it possible to determine the localization of the hemorrhage: 19 cases on the left (33.9%); 20 on the right (35.7%) and on both sides in 17 cases (30.36%). Hemorrhage occurred predominantly in the parenchyma of the cerebral hemispheres with the formation of 1 hematoma (44.64%), two hematomas of different sizes and locations (25%) and in 7.14% of observations - multiple foci. In 5 (8.93%) observations, the images revealed hematoma growth with displacement of the midline structures of the brain. The presence of blood only in the subarachnoid space was noted in 13

cases (23.21%).

**Conclusion.** Thus, the further development of radiation diagnostics and determination of the effectiveness of the need for high-tech types of radiation diagnostics is associated with the improvement of equipment and the creation of fundamentally new installations, with the development of new methods and drugs for artificial contrasting of various organs and systems.

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