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## **THE INTELLIGENT INFORMATION TECHNOLOGY FOR DECISION SUPPORT IN THE STROKES DIAGNOSIS**

According to the World Health Organization stroke ranks the second place in the world in deaths and disability [1]. In Ukraine, this problem has been remained undervalued for a long time, while in all developed countries the prevention and the fighting with effects of acute cerebrovascular has been recognized as the highest priority objectives of the health system long time ago. Although the incidence of stroke in Ukraine doesn't differ a lot from this indicator in other countries and is around 100-120 thousand cases per year, the mortality from stroke is still several times higher than in other European countries. In Ukraine, more than 40 thousand people die because of the stroke [2]. Such a high value of deaths in Ukraine can be explained by a number of reasons. Firstly, there are the patients that lead unhealthy lifestyle and are indifferent for themselves. Secondly, there are delayed diagnosis and hospitalization. This is due to the lack of necessary diagnostic equipment in hospitals and the lack of qualified experts who can quickly and accurately make a diagnosis and appoint an effective treatment. The mistakes of physicians are equally important causes which range from 20 to 45%. That's why the problem of reducing death and disability in diseases with acute cerebrovascular accident (CVA) is actual.

Problem statement. Today, the researches on the use of information and communication systems (ICS) to solve this problem are actively performed. These computerized systems are usually based on the knowledge of experts that can compensate the drawback of specialist's absence in the hospital, increase accuracy by reducing the number of diagnostic errors and increase efficiency by automating diagnostics process. Many scientific and practical results related to specific problems in diagnosing stroke, namely, forecasting a possible stroke, and provisional and final diagnosis of certain types of CVA, tomographic image brain recognition [3-7], are known. However, there is no comprehensive concept for the ICS using to assist in the diagnosis and treatment of strokes. Therefore, it is necessary to develop integral information technology for intelligent decision support in the strokes diagnosis, implementation of which will reduce death and disability from stroke.

To solve the problem a comprehensive intelligent decision support system for users has been proposed, which consists of the following basic subsystems: forecasting subsystem, tomograms recognition subsystem, diagnostic subsystem. The forecasting subsystem will allow to predict and prevent the occurrence of disease based on risk-factors. The recognition subsystem will allow forming a reliable conclusion with time expenditures and subjective error reducing. The diagnostic subsystem will allow establishing provisional and final diagnoses highly accurately, based on the data of other subsystems, and help to automate the accounting process of treatment events. The intelligent component of the system is the complex usage of an artificial neural networks and fuzzy logic, which has repeatedly proven effective in medical diagnostics [3, 5, 8]. Such approach to organization of intelligent information technology decision support in the stroke diagnosis is advisable to use as part of a telemedicine system.

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