

INTELLIGENT SUPPORT SYSTEM IN EPILEPSY AND NARCOLOGY

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In the paper is described the review of research in the area of development of some intelligent software design for assistance of: differential diagnosis, clinical overview and treatment of mental and behavioral disorders in patients with epilepsy and patients with drug dependent.

The development of these software products are designed to: a) assist scientific researches in the mentioned domains, b) develop some methods unique for a rational treatment to achieve remissions in patients and c) be used in educational process and professional improvement of doctors and specialists in the field of biomedical engineering.

The study is interdisciplinary and integrates knowledge in the fields of psychiatry, pharmacy, genetics, informational and communication technologies (artificial intelligence, support systems for decision, e-learning, bioinformatics, etc.).

The study is based on experience gained over 22 years of rational treatment of over 2000 patients epilepsy Psychiatric Hospital in Moldova. This activity was expected remission of more than 140 patients with resistant forms of epilepsy.

As a result of research, on one side was collected and systematized information on treatment of patients with epilepsy and narcology, on other side, started the development of intelligent software systems for assistance of: research in the professional domain, treatment of patients with epilepsy and drug addicts.

It was developed a *system of e-Learning* on research issues and an *expert system* for diagnosis of epilepsy groups F00 - F09 as classified "*The ICD -10 Classification of Mental and Behavioral Disorders*". The knowledge of expert system classifier is represented by a *knowledge base* that reflects the link between diseases and symptoms.

Experience achieved by developing the expert system was used to design a multy-expert-systems. The multy-expert-systems is a generic system of artificial intelligence. The multy-expert-systems is intended for use in developing a range of expert systems for different areas of expertise. For example, with multy-expert-systems can be generated: an expert system for diagnosis of mental and behavioral disorders in patients with epilepsy and an expert system for diagnosing mental and behavioral disorders in patients with drug addicts and other.

Developments of patients' recovery individual programs are weak-structured problems. The problems in this class do not have a unique solution. Solving the problems on computer is performed with assistance of a decision support system (DSS) specialized in the research issues.

DSS role is to assist the physician in developing individual programs of recovery of patients. Each individual program of recovery is obtained from a dialogue between doctor (the expert) and DSS. DSS integrates a knowledge base regarding: stages of diagnosis, laboratory tests, legal standards for medicines etc.