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### **The Cases of Patients Treated in Neurology Clinic of the Medical Academy in Lublin on Account of Status Epilepticus**

Losy pacjentów leczonych w Klinice Neurologii Akademii Medycznej w Lublinie z powodu stanu padaczkowego

Status epilepticus is an emergency state in neurology, that is the state requiring an immediate establishment of diagnosis and application of proper and active treatment. Unless these conditions are satisfied, it may lead to permanent invalidism or death (2—6).

According to the definition stated by the World Neurology Federation status epilepticus is a pathological state, in which an epileptic seizure is so prolonged or frequently recurring that it causes a fixed and extended epileptic situation (7). The time limit for the occurrence of such a situation is 30 min. Epileptic seizures in status epilepticus occur one after another within the time not longer than 30 min, although in some clinical forms of status epilepticus it does not come to any disturbances of consciousness.

There are mentioned as many forms of epileptic state as there are clinical kinds of epileptic seizures (2—6). For practical reasons there can be distinguished convulsive and nonconvulsive epileptic states. In adult people pathology convulsive epileptic states are those most frequently occurring (2, 6, 7, 10). Status epilepticus of tonic-clonic seizures constitutes the most serious threat to the patient's life. Mortality in this state amounts to about 10% (7, 8, 10). The patient does not regain consciousness between the seizures. The most frequent causes of these states are vascular damages of the brain, meningoencephalitis, brain hypoxia, brain tumours, metabolic disturbances, hydrous-electrolytic disturbances, exo- and endogenous intoxication, discontinuation of treatment with anticonvulsants, as well as alcoholism (1, 3, 4, 6—8, 10).

In epileptic convulsive state it comes to an excessive metabolism, which is initially manifested by hyperglycaemia, and then hypoglycaemia and lowering of sugar in tissues, hyperthermia, hyperhidrosis, hypohydraemia and arterial hypertension. Insufficient oxygen supply in relation to the requirement quickly leads to hypoxia. Under these conditions anaerobic glucose metabolism intensifies, which causes a considerable metabolic acidosis. A dangerous complication of status epilepticus is brain oedema and pulmonary oedema (3, 7, 10).

The treatment ought to be multidirectional and taking into account the basic disease as well as complications occurring in the basic disease as well as complications occurring in the course of existing epileptic state.

Between 1989 and 1991 in Neurology Clinic of the Medical Academy in Lublin there were hospitalized nineteen patients admitted to the Clinic in epileptic state, which constituted 17% of the patients in whom epilepsy had been diagnosed.

The group consisted of 8 males and 11 females. The age of the patients ranged from 18 to 81 years, 58 years on the average. In males status epilepticus mostly occurred at about 50 years of age, in females — at about 60 years of age. In the discussed patients convulsive epileptic states were the only ones observed. Maximum generalized seizures occurred in 10 persons in the course of status epilepticus, while partial simple attacks — in 9 persons. In 2 persons status epilepticus was the first manifestation of the disease and the attacks were of tonic-clonic character. 1 person before the occurrence of status epilepticus had maximum generalized seizures, while in the course of status epilepticus partial simple attacks were observed.

The causes of epilepsy in our patients were the following pathological states: perinatal injury — in 3 persons, late brain trauma — in 2 persons, vascular brain damage — in 7 persons, metabolic toxic disorders — in 5 persons, cerebral atrophy — in 2 persons. Neither cerebral neoplasm nor vascular anomalies were found among the possible causes of epileptic seizures.

The causes of status epilepticus in the patients hospitalized in the Clinic were found to be the following, among others: cerebral circulatory disturbances — in 7 persons, effect of alcohol — in 6 persons, status epilepticus in the course of epilepsy — in 4 persons, a change or discontinuation of epilepsy treatment — in 1 person, brain oedema — in 1 person. In the group of observed patients in status epilepticus brain trauma and paracerebral haematoma were not the cause of status epilepticus.

Epileptic states have occurred for the first time during lifetime of 16 persons, for the second time — in 1 person, and more than twice — in 2 persons. The frequency of epileptic seizures amounted to: several attacks within an hour — in 12 persons, more than 10 attacks within an hour — in 7 persons. The duration of status epilepticus was several hours in 12 persons, about 1 h in 1 person, more than several hours — in 6 persons. The time between the occurrence of status epilepticus and the establishment of diagnosis and the beginning of treatment in all the patients was approximately 1 h. The state of respiration of the patients being in status epilepticus: 12 persons breathed self-dependently, while in 7 of them there arose a need of intubation and of guiding a controlled respiration. The state of the circulatory system of the patients in status epilepticus: in 9 persons pressing and cardiac drugs were applied. In 3 patients pneumoedema occurred, whereas in 4 of them — symptoms preceding oedema development. Such consequences of epileptic state were not observed in 12 persons.

In the course of status epilepticus the following therapeutic management was applied: all the persons received anticonvulsants (Relanium, Luminal, Rivotril)

and antioedematous drugs (Furosemid, Hydrocortison, 20% Mannitol). In 2 patients a short lasting thiopental narcosis was applied. In the patients with prolonged status epilepticus Hemineurinum drip infusion was applied.

A positive therapeutic effect in the form of leading out the patients from status epilepticus was obtained in the case of 14 persons, while the remaining 5 persons, (26%), died.

The list of remote consequences of epileptic state goes as follows: there were no complications in 6 persons, hemiparesis occurred in 5 patients, organic brain damage syndrome — in 1 person, encephalopathy — in 3 persons.

### Conclusions

1. The causes of status epilepticus in our cases correspond with the causes presented in references.

2. The management applied in the treatment of status epilepticus is approximate to the one generally accepted. Worth noting is the fact that a very efficient drug, interrupting status epilepticus, is Hemineurine, which is applied in the Clinic. It is an anticonvulsant drug. A beneficial side of the drug administration is the possibility of its continued application and its general availability. We have not observed any side effects of Hemineurine.

3. Although the analysis of status epilepticus in our patients did not reveal the presence of paracerebral haematoma as a direct cause of this state, however, in our clinical practice a causality was found between the presence of paracerebral (subdural) haematoma and prolonged status epilepticus, which retreated after evacuation of haematoma. Therefore we think that it is only right that diagnostics should be broadened by tomographic or angiographic examination in patients suffering from prolonged status epilepticus.

4. It seems necessary that the drugs leading out patients from status epilepticus should be applied as quickly and efficiently as possible (e.g. parenteral application of Luminal or Relanium by an ambulance service doctor).

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Otrzymano 1994.12.30.

### STRESZCZENIE

W doniesieniu przedstawiono sytuację chorobową 19 pacjentów hospitalizowanych w latach 1989—1991 w Klinice Neurologii AM w Lublinie z powodu stanu padaczkowego. Szczególną uwagę zwrócono na przyczyny, czas trwania stanu padaczkowego, stan oddychania oraz funkcję układu krążenia. Postępowanie terapeutyczne zastosowane u pacjentów było zbliżone do postępowania ogólnie przyjętego, jednak na uwagę zasługuje fakt skutecznego zastosowania Hemineuriny w przerywaniu stanu padaczkowego. Istotne było maksymalnie szybkie podanie leków przeciwdrgawkowych oraz ewentualne rozszerzenie diagnostyki i zastosowanie badania TK lub angiografii u chorych obciążonych przedłużającym się stanem padaczkowym.