ORIGINAL RESEARCH PAPER

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KEY WORDS:

SEVERAL ASPECTS OF CLINICAL AND ELECTROPHYSIOLOGICAL CORRELATION IN COMATOSE PATIENTS WITH STATUS EPILEPTICUS

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ABSTRACT

Status epilepticus **(SE)** is one of the most common neurological conditions, which requires an emergency treatment. In general, **SE** management is more difficult in patients with unidentified cause of coma. Under observation, there were 32 patients with different etiologic factors of coma. 11 of them were women, 21 - men. All of these patients had different expressions of epilepsy, for example: 6 of them had immunological disorder causing **SE**. In 7 of these cases, non-convulsive SE was identified. In 14 cases, we have diagnosed progressive forms of main diseases, but we could not find out etiologic factors of developed immunological disorders. For the treatment, we have decided to use anti-convulsive drugs in combination with hormonotherapy and immunoglobulin therapy while all the patients were under the general anesthesia, including Ketamine. Despite the effort, the **SE** development in 2 of these cases was uncontrollable for a long period of time. In all of the cases, we intensively monitored the patients using EEG and MRI in dynamics. These observations showed that the inability to the **SE** development were related to the complications caused by the main disease. In conclusion, the acute disorder of the central nervous system and its development is very important in the **SE** management. In addition, the **SE** management process itself defines the solution. It relates to both types of status: Non-convulsive and convulsive. Moreover, timely diagnosis plays a significant role in the management of refractory **SE.**

INTRODUCTION:

Nowadays there are many debates about development and management of status epilepticus **(SE)** in comatose patients, and it is more difficult to treat patients with unidentified causes of coma. It is impossible to assert the final diagnosis in some cases, even though we have used different studies. In general, the mortality of **SE** cases is about 20 %, but it can reach more than 40 % in the elderly patients with acute symptomatic **SE** [1-5] and many co-morbidities [6].

Treatment of **SE**, especially in refractory or super-refractory stages, is almost an "evidence-free zone" [7]. So, each clinical case is important and each clinical data must be discussed.

METHODS:

There were 32 patients with coma under our observation and they were divided in two clinical groups: Patients with different etiological factors (autoimmune, unknown) causing coma- 24cases were included in the group A. We diagnosed non-convulsive status epilepticus **(NCSE)** in 4 cases from the first group. Eight patients with traumatic brain injury were included in the group B. In 3 cases of this group **NCSE** was found in the patients with oncological diseases and secondary brain damages were excluded.

All patient underwent the following studies:

1. Long-term EEG monitoring.
2. Intensive brain CT or MRT in dynamics.
3. Objective neurological status (by GCS).
4. Other basic clinical and para-clinical studies.

RESULTS:

In three cases of group A, **NCSE** with refractory and super refractory developing were under observation and in two cases of group B, refractory **SE** was mentioned.

Table 1 EEG Patterns In All Cases Of NCSE From Both Groups.

Number of patients	9	9	14
GCS	4-6	4-5	3-4
EEG Patterns	Lateralized Periodic Discharges (LPDs)	Bilateral Periodic Discharges (BPDs)	Generalized Periodic Discharges (PDs)

Long-term EEG monitoring shows development **NSCE** in all cases in dynamic

For management of SE, we used treatment with Valproic Acid (VPA), Levetiracetam (LEV) and Carbamazepine (CBZ) in high doses.

Figure 1 Precious EEG data super-refractory SE.

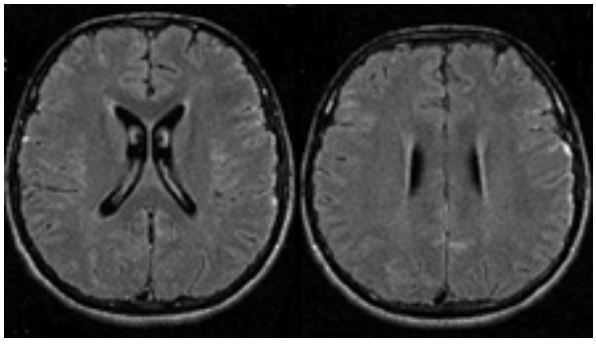

Figure 2 MRI Data Of Patients With Autoimmune Encephalitis.

Figure 1 shows super-refractory **SE** EEG monitoring findings-Bilateral periodic discharges (BPDs).

Figure 2 shows MRI finding in these cases.

In the cases of super-refractory **SE**, we used VPA, LEV and CBZ at the same time with intravenous Propofol infusion (4 mg/kg/day), pulse corticosteroid therapy with Methylprednisolone, Thiopental and Ketamine infusion –dosage 2.75 mg/kg (3 days). Super refractory **SE** was continued. EEG monitoring shows generalized periodic discharges (PDs)-negative dynamics.

In additional we used plasma exchange (PE), intravenous immunoglobulin (IVIG). Regardless of all, EEG dynamics were negative and MRI studies also revealed negative radiological changes. We find out the brain activity deprivation after using Thiopental infusion in patients with **SE.** We've received maximal depression of brain activity and full control under convulsion. Of course, we have positive MRI dynamics in development of main disease.

All cases of refractory and super-refractory **SE** were hard to

manage and prevent from developing into the major brain damages.

CONCLUSION:

Refractory and Super refractory NCSE have severe clinical developments. It is difficult to manage each case and requires an individual treatment.

Outcome of these cases depends on what is the cause of initial disease and its severeness.

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