Empiric Therapy the Rule in Status Epilepticus

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JACKSON HOLE, WYO. — Faced with the need for acute treatment of status epilepticus, emergency physicians need to remember that treatment practice is more empiric than evidence-based—and when lorazepam and fosphenytoin fail to stop the seizures, the next step is unknown, Eelco F.M. Wijdicks, M.D., said at a meeting on high-risk emergency medicine sponsored by the Mayo Clinic. Clinical trials, and even case series, with an appreciable number of patients are rare in status epilepticus.

Data from the two existing trials have established fairly clearly that lorazepam is the first-line drug of choice, said Dr. Wijdicks, director of the division of critical care neurology at the Mayo Clinic, Rochester, Minn.

The earlier of the two trials compared treatment with lorazepam, phenytoin, phenobarbital, and diazepam followed by phenytoin (N. Engl. J. Med. 1998;339:792-8)—regimens that, except for lorazepam, have largely fallen from first-line use today, Dr. Wijdicks noted. The second trial compared intravenous lorazepam or diazepam with placebo, delivered in an ambulance (N. Engl. J. Med. 2001;345:631-7).

In both studies, lorazepam was the most effective agent, terminating seizures in about 60% of patients.

Fosphenytoin is generally considered the second-line treatment, and it was the next most effective agent in the first clinical trial. Fosphenytoin is safer than phenytoin, Dr. Wijdicks said, but still can cause heart arrhythmias.

Absolutely no data indicate how long treatment should be continued, he cautioned.

With lorazepam and fosphenytoin, the practice at the Mayo Clinic is not to continue treatment for longer than 6-8 hours if seizures are controlled.

Dosages are titrated back at 10% an hour, unless seizures reappear. If that occurs, Mayo physicians go back to the dosage that achieved control and try again.

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Likewise, no data suggest what agent should be used next in refractory cases. Surveys indicate that many physicians report using midazolam or propofol. For a treatment of last resort, physicians list their options to include lidocaine, ketamine, and barbiturates.

Dr. Wijdicks said he prefers intravenous valproate because it does not affect blood pressure and carries less risk than barbiturates.

The dosage is a bolus of 25 mg/kg, followed by an infusion of 1 mg/kg per hour.

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These drugs are very tricky, however, said Dr. Wijdicks. If the patient should go into a barbiturate coma, it would mean weeks in intensive care and on mechanical ventilation, he said.

Although many status epilepticus patients become acidotic, treatment with bicarbonates is generally not necessary or advisable, Dr. Wijdicks said.

In many cases, the patient's pH does not change enough to warrant treatment, given the risk that making a patient alkaline may perpetuate seizures.

Dr. Wijdicks touched on two other subjects as well: psychogenic status epilepticus and outcomes.

Psychogenic status is a serious matter, he cautioned. When it is not recognized, patients can be subjected to the wrong interventions and suffer iatrogenic injury or death.

There is one key to recognizing psychogenic status even before an EEG: Patients will have their eyes open during their convulsions.

The outcome of status epilepticus is not universally dismal, Dr. Wijdicks said. Studies have shown that when patients come out of status epilepticus in less than an hour and have no structural brain lesion, most will return to functional independence. ■