Case Report

Treatment of refractory simple partial status epilepticus by the addition of oral lacosamide in neurosurgical patients. Report of 3 cases

Georgios F. Hadjigeorgiou a,b,⁎, Adamantios Petsanas b, Christos Anagnostopoulos b, Christos Chamilos b, Georgios Vranos b, Philokypros Spyridakis b

a Department of Neurosurgery, Red Cross Hospital, 1 Athanasaki St., 11526 Athens, Greece
b Department of Neurosurgery, Tzanio General Hospital, 1 Zani & Afentouli St., 18536 Piraeus, Athens, Greece

Abstract

Lacosamide is a new antiepileptic drug that has been successfully used for the treatment of partial seizures. We report three neurosurgical cases of simple partial status epilepticus refractory to multiple antiepileptic medications. The addition of oral lacosamide in doses of 200–400 mg in combination with the existing treatment had successfully controlled the seizures within four days.

1. Introduction

Simple partial status epilepticus (SPSE) is characterized by partial seizures, without impairment of consciousness or secondary generalization and preservation of neurovegetative regulation.

Lacosamide is a new antiepileptic drug, licensed in the USA and Europe, for adjunctive therapy of partial onset seizures in 2008. In this article, we present three patients with refractory SPSE, which was successfully controlled with the addition of oral lacosamide in their treatment.

2. Case presentation

2.1. 1st case

A 52-year-old female underwent a craniotomy in our department for a metastatic tumor in the left parietal lobe. The patient had no complications and was discharged on the 7th postoperative day, under levetiracetam on a dosage of 1500 mg bid and phenytoin on a dosage of 100 mg tid. Two months later, she presented again with focal seizures in her right arm. The blood levels of phenytoin were slightly over 20 μg/ml. The electroencephalogram (EEG) showed spikes and δ waves. Oral lacosamide was added starting with an initial dosage of 100 mg bid and four days after, it was increased to 200 mg bid. On the fourth day after the addition of oral lacosamide, seizures were totally controlled, and phenytoin treatment was interrupted. The patient was discharged home seizure-free ten days after the initiation of lacosamide.

2.2. 2nd case

A 66-year-old male underwent a craniotomy for an acute subdural hematoma after a head trauma. Postoperatively, he remained in the intensive care unit for one month. Three days after his transfer to the ward, he presented with myoclonic jerks of his right arm. He was already under phenytoin on a dosage of 150 mg tid. We added levetiracetam with a starting dosage of 1000 mg bid, without complete control of the status. We increased levetiracetam up to 1500 mg bid, but the seizures were refractory to the treatment. We finally added 100 mg bid of oral lacosamide. After gradual increase of the dosage at 200 mg bid, the seizures were totally controlled three days after, and the patient was discharged seizure-free.

2.3. 3rd case

An 80-year-old female was admitted to our department because of a small right acute subdural hematoma, with no midline shift, after a head injury. Her neurological examination revealed mild left-sided postictal weakness. We decided to treat her conservatively. Phenytin...
was started on a dosage of 125 mg tid. Six hours after her admission, the patient presented focal motor seizures in her left hand. Although we added 500 mg bid of levetiracetam to her treatment, she continued to have seizures. On the second day, we started 100 mg bid of oral lacosamide and three days after, the seizures were completely controlled. The patient was discharged home seizure-free twelve days after her injury.

3. Discussion

Administration of antiepileptic drugs (AEDs) is the mainstay of treatment for SPSE. Although almost 50% of patients become seizure-free with the first AED regardless of the agent, a substantial proportion of patients still have inadequate seizure control despite treatment with currently available AEDs [1].

Lacosamide has been approved for add-on treatment of partial seizures with or without secondary generalization in patients 16 years of age or older at a daily dose of 200 mg to 400 mg. Lacosamide has a novel dual mechanism of action. The active substance is (R)-2-acetamido-N-benzyl-3-methoxypropionamide. It selectively enhances slow inactivation of voltage-gated sodium channels, resulting in stabilization of hyperexcitable neuronal membranes and inhibition of repetitive neuronal firing without exhibiting effects on physiological neuronal excitability [2].

Being a newly introduced pharmacologic agent until now, there are only a handful of case reports and series in the literature demonstrating the benefits of lacosamide as an adjuvant therapy. Kellinghaus et al. analyzed 39 patients, who were admitted for status epilepticus, with a mean age of 63 years old. Out of the abovementioned patients, 16 presented SPSE. All but two patients previously received benzodiazepines, and lacosamide was started, in an initial dose between 200 and 400 mg, after a median latency of 30 h. Lacosamide successfully terminated the seizures in 44% of the patients [2]. Rantsch et al. concluded that administering lacosamide, as a fourth drug, in doses of 50–100 mg daily, effectively terminated SPSE in 20% of the cases. However, they supported the observation that the outcome at discharge seemed to depend considerably on the age of the patient and not on the therapeutic approach [3].

Chen et al. presented a case of a 57-year-old male with refractory SPSE, already under levetiracetam, who became seizure-free after the initiation of lacosamide at an initial dosage of 50 mg bid and then gradually increased to 200 mg bid [4].

Our series includes three patients, with a mean age of 66 years old, who suffered from SPSE because of a space-occupying lesion. Our experience demonstrates that oral lacosamide, in doses of 200–400 mg daily, can successfully control partial motor status, as an adjuvant to the already established antiepileptic treatment. In all cases, SPSE was totally controlled within four days, and no adverse effects were noted.

4. Conclusion

Oral lacosamide is a useful antiepileptic drug for refractory SPSE. Its mechanism of action might indicate that the drug could be advantageous in combination therapy. However, further reports are necessary to determine optimal timing, dosing, and duration of lacosamide treatment as well as its effectiveness as a first choice antiepileptic drug.

Conflict of interest

None of the authors have any conflicts of interest to disclose.

Appendix A. Supplementary data

Supplementary data to this article can be found online at http://dx.doi.org/10.1016/j.ebcr.2013.03.005.

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