



## Internal Medicine

ACUTE STROKE-ELICITED EPILEPSIA PARTIALIS CONTINUA  
RESPONSIVE TO LEVETIRACETAM

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**ABSTRACT** We present an interesting case of epilepsy partialis continua (EPC) responsive to levetiracetam treatment as an acute manifestation of cortical ischemia. A 54-year-old, right-handed man presented with Epilepsia partialis continua (EPC) ensued as an acute complication of an acute infarct in high parietal region, with clonic jerks of left upper limb, was admitted to our department of general medicine. When the standard treatment with benzodiazepines and phenytoin failed, levetiracetam was started. This completely abolished seizure activity, bringing an improvement of the patient's neurological condition EPC may be an acute complication of cortical ischemic damage and levetiracetam, is an interesting alternative for the treatment of this poorly studied condition.

## KEYWORDS :

## INTRODUCTION

Epilepsia partialis continua (EPC) was a name first introduced by Kozhevnikov on January 21, 1894 when he presented his description of a unique type of prolonged focal seizure in four patients at a meeting of the Moscow Neurological and Psychiatric Society(1). It is defined clinically as a syndrome of continuous focal jerking of a body part, usually localized to a distal limb, occurring over hours, days or even years(2). It is due to cerebral origin, limited to one part of the body and repeating at no more than 10-second intervals that can be stimulated by action or sensory stimuli (3).

The main causes of EPC are vascular disorders like stroke, encephalitis, neoplasms, and metabolic disorders like non-ketotic hyperglycaemia (NKH)(3)(4).

## Case report

A 54-year-old, right-handed male patient was admitted to the emergency room because of continuous rhythmic clonic movements of the left forearm and hand that persisted for more than 4 days. He was tired of the continuous activity in his extremity. Consciousness was preserved throughout the event. His physical examination was unremarkable. He was completely alert and oriented. There was no aphasia, comprehension was intact, muscle strength of his right upper extremity could not be examined because of clonic movements but that of his lower extremity and right side were normal. The patient was a known case of systemic hypertension and old CVE and was on regular medications. Blood electrolyte levels and cell blood counts were normal. Brain CT showed acute infarct in right high parietal lobe also involving precentral gyrus with chronic infarct with gliosis right frontal region. EEG showed no abnormalities.

Brain MRI was performed. On diffusion weighted images, diffusion restriction revealed multiple acute ischemic lesions at the right frontal lobe, including the cortical regions of the right precentral gyrus Five milligrams of diazepam was intravenously administered in the emergency room, but there was no change in the clinical course. Phenytoin was intravenously administered by an infusion of 20 mg/kg for a period of 60 minutes. Similarly, the treatment did not affect the abnormal continuous activity. Levetiracetam was then intravenously administered at a dose of 500 mg/bid. On the next day, the dose of levetiracetam was increased to 1500 mg/day. On the third day, the clonic twitches remarkably decreased. On the fourth day, the dose of levetiracetam was increased to 2000 mg/day, and the clonic twitches completely stopped. No treatment-related side effects were noted. The

treatment switched to the oral form of levetiracetam from the same dose and administered orally. On the sixth day, the patient was discharged on levetiracetam 2000 mg/day aspirin 75mg/day and atorvastatin 40 mg/day.

## DISCUSSION

Epilepsia partialis continua (EPC) is a seldom type of focal status epilepticus. It is easy to diagnose and distinguish EPC from other movement disorders or myoclonic symptoms because of its characteristic semiological features(5). It is also a rare complication of acute stroke, and its pathogenesis is unclear. EPC has been considered to originate from the cortex(6). Other subcortical localizations have also been reported(3). Etiology of EPC include the most frequent cause of EPC in childhood is Rasmussen encephalitis and at older ages, vascular and neoplastic diseases are the most frequent causes. Metabolic, toxic, and other immune-mediated causes account for most of the remaining cases(7). Other rare cases dysplasia, schizencephaly, mitochondrial encephalopathy, hypocalcemia and non ketotic hyperglycemia (6).

Levetiracetam is one of the most frequently used new antiepileptic drugs for the treatment of partial seizures because of advantages over traditional therapy, including once or twice daily dosing, low side effect profile with no requirements for serum drug concentration monitoring, and no interactions with other antiepileptic drugs. The intravenous infusion of levetiracetam is bioequivalent to that of oral tablets and is well tolerated after 15-minute (2000–4000 mg/ bid) and 5-minute (1500–2500 mg/bid) infusions(3).

Our case of EPC was an acute manifestation of acute cortical ischemia. Although there are no clear guidelines for the management of this condition, it is generally accepted that the treatment of EPC depends on the underlying disorder. Our patient's EEG was normal, which might be because in some special cases, scalp EEG cannot capture the discharge due to the smaller range of electrical activity, weaker epileptic potential, or a different position of the electrode. We did not continue the patient's treatment with phenytoin because of its side effects, especially in older patients

## CONCLUSION

our observation suggests that intravenous levetiracetam followed by oral levetiracetam is a promising therapeutic option for treatment of EPC because it has a rapid antiepileptic effect with low side effects and easy titration possibility and helps to avoid polytherapy especially in elderly.

**REFERENCES**

1. W VA van EB. Kozhevnikov epilepsy: the disease and its eponym. [Internet]. epilepsy. 2011 [cited 2021 Apr 3]. Available from: [https:// reference. medscape. com/ medline/ abstract/21204824](https://reference.medscape.com/medline/abstract/21204824)
2. Cockerell OC, Rothwell J, Thompson PD, Marsden CD, Shorvon SD. Clinical and physiological features of epilepsy partialis continua: Cases ascertained in the UK. *Brain*. 1996;119(2):393–407.
3. Yön Mİ, Ulusoy EK, Bilen Ş, Yön MEE. Levetiracetam may be the first choice for managing epilepsy partialis continua related to ischemic stroke. *Erciyes Tip Derg*. 2016;38(4):157–8.
4. Chang Y, Zheng ZS, Wang HH, Liu SY. Epilepsia partialis continua associated with non-ketotic hyperglycaemia. *Adv Mater Res*. 2013;680:620–3.
5. Bien CG, Elger CE. Epilepsia partialis continua: Semiology and differential diagnoses. *Epileptic Disord*. 2008;10(1):3–7.
6. Lv Y, Wang Z, Chu F, Liu C, Meng H. Epilepsia partialis continua present with shoulder joint-trunk-hip joint rhythmic clonic seizure: A case report. *Neuropsychiatr Dis Treat*. 2016;12:2363–6.
7. Schomer DL. Focal Status Epilepticus and Epilepsia Partialis Continua in Adults and Children. *Epilepsia*. 1993;34:S29–36.
8. Ashkenazi A, Kaufman Y, Ben-Hur T. Bilateral focal motor status epilepticus with retained consciousness after stroke. *Neurology*. 2000;54(4):976–8.