



## Levetiracetam as Treatment for a Woman with Epilepsy in Pregnancy: A Case Report and Discussion

Karunakaran KE\*

Department of Clinical Sciences, Eastern University, Sri Lanka

### Abstract

Epilepsy in pregnancy raises concern for optimum seizure control with safety of the fetus from teratogenicity. Levetiracetam is a broad-spectrum Antiepileptic Drug (AED) and is reported to be safe. Our experience with this medication seems very limited. We herewith present a case from Teaching Hospital, Batticaloa, Sri Lanka. COVID-19 restrictions hampered the continuous compliance to treatment however, with good outcome.

**Keywords:** Epilepsy in pregnancy; Levetiracetam; Compliance

### Introduction

Epilepsy is a neurologic condition characterized by recurrent seizures. Epilepsy affects 1% of the South Asian population and thus approximately 15 million people suffer from this condition [1]. One third of such patients have generalized tonic clonic seizures [2]. This condition is managed with Anti-Epileptic Drugs [AED]. Pregnancy is a special situation in which teratogenicity of any treatment to be considered seriously. In every 1000 pregnancies, between two and five infants are born to women with epilepsy [3]. Thus, the goal of management is to achieve seizure control with minimal therapy with least potential for teratogenicity. Levetiracetam is a broad-spectrum Antiepileptic Drug (AED) and is reported to be safe [4]. Sri Lanka is with a 'Low Resource Setting' nevertheless have clinical potential to manage epileptic women with pregnancy [5]. Our experience with Levetiracetam seems very limited. We report such a case management.

### Epilepsy Case

A 30 years old Mrs. S in her third pregnancy presented to the University Obstetrics Unit of Teaching Hospital, Batticaloa, Sri Lanka at 39 weeks of gestation for confinement. Her pregnancy progressed normally. She is a known patient with grand mal epilepsy for six years of age, was on regular treatment. She didn't develop seizures for over a year when she conceived this pregnancy in March 2020. Upon confirming the pregnancy, she was prescribed Levetiracetam 250 mg twice daily by the neurology care team. Three months into her pregnancy she developed an episode of seizure. At the sixth month [26 weeks of gestation] she developed fits. When admitted for confinement, she was not on treatment with AED medication. The treatment with Levetiracetam again commenced. Despite that she developed another episode of fits. On the same day itself she developed features of labor and had a normal vaginal delivery of a girl weighing 2.8 kg. Post-partum period was uneventful. Both partners consented for sterilization and she had undergone bilateral ligation and resection of tubes. She was advised to continue the treatment and regular clinic follow up. Going deep into inquiring about poor compliance, she admitted that it was due to restrictions due to COVID-19 she could not receive regular treatment.

### Discussion

Epilepsy is the commonest disabling neurologic condition. The incidence is about 50 per 100,000 per annum. In Sri Lanka the crude prevalence figure for active epilepsy ranges from 9 to 11 cases per 1000 [2]. Women with Epilepsy when pregnant, tend to become anxious about the wellbeing of the baby to be born. In most instances' pregnancies are unplanned and thus often alterations in AED occur well into the first trimester of pregnancy. Pregnant mothers have the tendency to poor compliance with medication. Restrictions imposed due to the COVID pandemic add to this situation further. The woman in this study appears to have regularly been taking treatment owing to the fact that she was disease free for over one year. When she became pregnant, in the early weeks of pregnancy, her treatment was altered to Levetiracetam. This is a newly introduced medication in our hospital. It has been introduced in Sri Lanka within ten years. Thus, this would

### OPEN ACCESS

#### \*Correspondence:

Karunakaran KE, Department of Clinical Sciences, Eastern University, Sri Lanka  
50, New Road, Batticaloa 30000, Sri Lanka,

E-mail: kekarunakaran@gmail.com

**Received Date:** 05 Jan 2021

**Accepted Date:** 04 Feb 2021

**Published Date:** 08 Feb 2021

#### Citation:

Karunakaran KE. Levetiracetam as Treatment for a Woman with Epilepsy in Pregnancy: A Case Report and Discussion. *Neurol Disord Stroke Int.* 2021; 3(1): 1022.

**Copyright** © 2021 Karunakaran KE. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

be the first reported experience from Sri Lanka with Levetiracetam in treating pregnant women. The recent study reported in Sri Lanka was in 2018 and the commonest medication used was carbamazepine [5]. Although Mrs. S was prescribed with Levetiracetam, she did not take it regularly except for the last two weeks before delivery. Literature in Levetiracetam and pregnancy indicate the safety of the drug. The study in north India reported as 'None of the child born to pregnant women receiving Levetiracetam had any congenital malformation' and concluded that 'Levetiracetam is a first-line AED during pregnancy' [6]. Another study reported from Europe also reported the same [7]. It was also reported that 'Levetiracetam had not shown a substantial risk for major congenital malformations in over 1000 women exposed to this drug as monotherapy during the first trimester', gradually decreasing plasma levels of this drug may occur through pregnancy [8]. It was also reported that the LEV also has increased clearance during pregnancy, with the decrease plasma level being most pronounced during the third trimester [8,9]. The best predictor of seizure frequency during pregnancy appears to be seizure frequency 1 year prior to pregnancy. This is particularly true in the woman in this study who was seizure free for over one year and despite poor compliance to treatment, developed seizures once in three months. Had not COVID intervened, she would have had good compliance to Levetiracetam medication and thereby free from the illness. Since Levetiracetam appears to be a safe medication in pregnancy, women with epilepsy at child bearing age are to be converted from the potent teratogenic agent such as Valproate to this drug is reported to be effective [10]. Thus, treatment on this subset of women with Levetiracetam is an advisable option.

## References

1. Epilepsy in the WHO South-East Asian Region. Bridging the gap. 2020.
2. Clinical Practice Guidelines. Management of Epilepsy; Sri Lanka College of Obstetricians & Gynecologists. 2020.
3. Kinney MO, Morro J. Epilepsy in pregnancy. *BMJ*. 2016.
4. Mawhinney E, Craig J, Morrow J, Russell A, Smithson WH, Parsons L, et al. Levetiracetam in pregnancy: Results from the UK and Ireland epilepsy and pregnancy registers. *Neurology*. 2013;80(4):400-5.
5. Galappaththy P, Liyanage CK, Lucas MN, Jayasekara D, Abhayaratna SA, Weeraratne C, et al. Obstetric outcomes and effects on babies born to women treated for epilepsy during pregnancy in a resource limited setting: a comparative cohort study. *BMC Pregnancy Childbirth*. 2018;18(1):230.
6. Bansal R, Suri V, Chopra S, Aggarwal N, Sikka P, Saha SC, et al. Levetiracetam use during pregnancy in women with epilepsy: Preliminary observations from a tertiary care center in Northern India. *Indian J Pharmacol*. 2018; 50(1):39-43.
7. Koc G, Guler KS, Karadas O, Yoldas T, Gokcil Z. Fetal safety of levetiracetam use during pregnancy. *Acta Neurol Belg*. 2018;118(3):503-8.
8. Elepsia XR, Keppra, Keppra XR, Roweepra, Roweepra XR, Spritam. Levetiracetam pregnancy and breastfeeding warnings. *Drugs.com*. 2019.
9. Patel SI, Pennell PB. Management of epilepsy during pregnancy: An update. *Ther Adv Neurol Disord*. 2016;9(2):118-29.
10. Kuo CY, Liu, YH, Chou JJ, Wang HS, Hung PC, Chou ML, et al. Shifting valproic acid to levetiracetam in women of childbearing age with epilepsy: A retrospective investigation and review of the literature. *Front Neurol*. 2020;11:330.