



## Case Series

## Case series: Fetomaternal outcome with polytherapy in pregnant women with epilepsy at a rural tertiary care hospital

Sneha Singh<sup>1</sup>, Gomathy E<sup>1,\*</sup><sup>1</sup>Dept. of Obstetrics & Gynaecology, Sri Devaraj URS Medical College, Kolar, Karnataka, India

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## ABSTRACT

**Introduction:** Epilepsy is most common major neurological complication encountered in pregnancy. The etiology of seizures covers a wide range of diseases, vascular insults, infectious sequelae, malignant processes and primary central nervous dysfunction. A wide range of obstetric complications have been reported including spontaneous abortion, preterm labour, stillbirth, neonatal death, hemorrhagic disease of the newborn; low Apgar and low birth weight. The incidence of malformations increase from 2.9% in the non drug user group to 3.7% in patient on monotherapy and 6.6% in patients on polytherapy.

**Objectives:** To study the maternal and perinatal outcome in pregnant women with epilepsy on polytherapy.

**Materials and Methods:** This retrospective observational study was conducted in R.L. Jalappa Hospital Kolar India over a period of 6 months (December 2017-june 2018). Five pregnant women with epilepsy attending the antenatal clinic or admitted in labour ward in a tertiary care hospital taking two or more antiepileptic drugs were evaluated.

**Conclusion:** Cases included in this study concludes that, despite the increased risks of pregnancy in woman with epilepsy, with appropriate clinical management with newer drugs, more than 90 percent woman with epilepsy can have successful pregnancies and better neonatal outcome. Moreover because of pre-pregnancy planning, counselling and optimisation of antiepileptic drug regimens and use of preconception folic acid, pregnancy outcome have become better.

A higher teratogenic potential was confirmed for traditional antiepileptic drugs, particularly Valproate. Lower rates of congenital malformations were found for levetiracetam (1.7%) than in association with VPA (6.9%)

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### 1. Introduction

Pregnancy with epilepsy is indeed high risk pregnancy. About 2.5 million women in Indian suffer from epilepsy, with 52 of them being in the reproductive age group.<sup>1</sup> Epilepsy is the second most common neurological disorder in obstetrics encountered between 0.3% and 0.6% of the patients. Incidence of epilepsy in our hospital is 0.4%. The effect of epilepsy on pregnancy are varied and include the effect of epilepsy itself, like seizures, and the effect of antiepileptic drugs. Women with epilepsy are advised to continue antiepileptic drugs (AEDs) during pregnancy to reduce maternal and fetal trauma

associated with seizures. The goal is optimal seizure control with minimum fetal exposure to AEDs. Prenatal exposure to AEDs may be associated with major congenital malformations, intrauterine growth retardation, dysmorphic syndromes deficits in neurocognitive development.<sup>2</sup> It is proposed that epilepsy should be treated with smallest effective dose of an anticonvulsant drug. The overall risk for major congenital malformations is approximately 2.2% for carbamazepine, 3.2% for lamotrigine, 3.7% for phenytoin and 6.2% for valproate.<sup>3</sup> Valproate shows higher risk of congenital malformations as well as adverse behavioral developmental and cognitive outcomes. Also some studies have suggested that polytherapy increases risk of major congenital anomaly from 3.5% to 4%.<sup>4</sup> Nowadays the most

\* Corresponding author.

E-mail address: [egomathy72@yahoo.com](mailto:egomathy72@yahoo.com) (Gomathy E).

common preferred antiepileptic drugs are lamotrigine and levetiracetam. Here we are discussing 5 cases of pregnancy with epilepsy on polytherapy and the different components including maternal and perinatal outcome.

## 2. Objective

To study the maternal and perinatal outcome in pregnant women with epilepsy on polytherapy.

## 3. Materials and Methods

This retrospective observational study was conducted in R.L.Jalappa Hospital Kolar India over a period of 6 months (December 2017 – June 2018). Five pregnant women with epilepsy attending the antenatal clinic were admitted in labour ward in a tertiary care hospital taking two or more antiepileptic drugs were evaluated.

## 4. Cases

### 4.1. Case 1

A 27 year old, primigravida, with preterm gestation with RH negative pregnancy and known case of epilepsy since 10 years on Tab Levetiracetam 1gm BD, Tab Clobazam 5mg BD and Tab Carbamazepine 400mg BD. Patient had history of generalised tonic clonic seizure once in three to four months. Last episode of seizure was at 8 months of amenorrhea. Patients antenatal anomaly scan showed no anomalies. Patient underwent emergency Cesarean Section and had a male baby 2.46 kg with normal apgar score. On postoperative day 1 patient had 3 episodes of generalised tonic clonic seizures with post-ictal confusion, Patient was started with Injectable Levetiracetam 500mg BD for few days and later on patient was discharged on Tab Levetiracetam 1gm BD, Tab Clobazam 10mg BD and Tab Carbamazepine 400mg BD.

### 4.2. Case 2

A 23 year-old, primigravida with term gestation with known case of partial tonic clonic seizures since 1 month of amenorrhea, was admitted for safe confinement. Initially she was on Tab Valproate 200mg BD. Patients antenatal scan was done and it showed no anomalies. She had multiple episodes of partial tonic clonic seizures at 8 months of amenorrhea and Tab Levetiracetam 500mg BD was added along with Tab Valproate on admission. Patient had multiple episodes of GTCS on admission, patient was shifted to ICU and Tab Phenytoin 300mg was added at night, regular fetomaternal monitoring was done and she was discharged after 3 days. Later she came to hospital in 2<sup>nd</sup> stage of labour and had a spontaneous vaginal delivery of a male baby, of birth weight 2.9kg with no congenital anomaly. Postnatal period was uneventful and patient was discharged on Tab levetiracetam 500mg BD.

### 4.3. Case 3

25 year old G3P2L2 with known case of Generalised tonic clonic seizures(GTCS) with 39weeks 2days of pregnancy came for safe confinement. Patient underwent elective caesarian section and extracted a live term male child of 3kg, with no congenital anomaly and a good apgar score. She was diagnosed with GTCS at 10yrs age and was on Tab carbamazepine 300mg OD. She had her last episode at 8months of amenorrhea following which one more antiepileptic tab Levetiracetam 500mg was added. Patient was given antibiotics, anti-inflammatory drugs. Postoperative period was uneventful.

### 4.4. Case 4

29 years old G2P1L1 with 37 weeks gestational age with known case of GTCS. Patient was a known case of epilepsy since 10 years of age and was on medication tab carbamazepine 200mg once a day. Patient had last convulsions 1 year back followed by admission in hospital and started on tab Levetiracetam 500mg once a day was added. Antenatal period was uneventful. Anomaly scan showed no anomalies. Patient underwent elective LSCS of a male baby 2.5kg with no congenital malformation. Patient was discharged with tab Levetiracetam 500mg BD.

### 4.5. Case 5

35 years old G2P1L1 reported to our hospital with 35 weeks 6 days gestation. She was a known case of epilepsy since 3 yrs on tab phenobarbiton 60mg OD and tab phynetoin 100mg OD. She had last episode of convulsions at 4 months of amenorrhea. Her anomaly scan revealed no gross anomaly. Patient underwent emergency LSCS in view of fetal distress, patient had a male baby 2.2 kg, with normal apgar score. Postnatally no further episodes of convulsions.

## 5. Conclusion

Cases include in this study concludes that, despite the increased risks of pregnancy in woman with epilepsy, with appropriate clinical management and with newer drugs more than 90 percent women with epilepsy had successful pregnancies and better neonatal outcome. Previous studies showed that monotherapy should be preferred than polytherapy owing to its risk of congenital malformations and low dose of anticonvulsant is preferred to high dose.<sup>5</sup> Since the main goal of pregnancy management is seizure prevention, dose should be increased until seizures are controlled and also a second drug can be added. A higher teratogenic potential was confirmed for traditional antiepileptic drugs, particularly Valproate. Lower rates of congenital malformations were found for tab levetiracetam (1.7%) than in association with VPA(6.9%).<sup>6</sup> In this study inspite of use two or more antiepileptics, no congenital

anomalies were detected in anomaly scan. Only one patient had post partum convulsion and 4 out of 5 patients underwent caesarean section. Fetal outcome was also good since no congenital anomalies were detected at birth and babies were born with good apgar score. Moreover because of prepregnancy planning, counselling and optimisation of antiepileptic drug regimens and use of preconception folic acid, pregnancy outcome has become better which is reflected in our study.

#### 6. Source of funding

None.

#### 7. Conflict of interest

None.

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#### Author biography

Sneha Singh Post Graduate Student

Gomathy E Professor

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