

Maternal and Fetal Outcomes in Epilepsy

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Received: June 15, 2022; **Published:** September 09, 2022

Abstract

Background: Epilepsy is a common chronic disorder affecting approximately over one million women of childbearing age. Patients who are epileptic who become pregnant are at risk of complications, including changes in seizure frequency, maternal morbidity and mortality and congenital anomalies of the fetus due to antiepileptic drug exposure. Women who are seizure free in the 9 months prior to pregnancy have an 84% - 92% chance of remaining seizure-free during pregnancy on their current regimen.

Objective: To study the incidence, risk factors and management in known case of epilepsy patients.

Methods: It is a retrospective study conducted at ESIC-PGIMS Bangalore from January 2016 to December 2020. All pregnant women who were known case of epilepsy who are on treatment during this period were included in this study.

Results: The total number of cases was 80 out of 15660 deliveries in this period. The prevalence of epilepsy patients in this study is 0.51%. Majority were multigravida (55%) of the age group 26 - 30 years (46.25%), majority belongs to gestational age 37 - 40 weeks (82.5%) and most of them delivered cesarean section (60%) and majority are > 2.5 kg birth weight babies (82.9%). Majority cases were previous cesarean section (26.25%).

Conclusion: Pre-pregnancy counselling is necessary to avoid congenital malformations due to few anti-epileptic drugs. Patients who are booked from first trimester with regular antenatal check ups are have less morbidity and mortality due to earlier detection of associated co-morbidities.

Keywords: Epilepsy; Cesarean Section; Preconception Counselling; Congenital Malformation

Introduction

Neurologic conditions are among the more common concurrent medical conditions encountered during pregnancy. Epilepsy is probably the most common serious neurologic problem faced by obstetricians. In every 1000 pregnancies, between two and five infants are born to women with epilepsy. For such women, pregnancy can be a time of anxiety over maternal and fetal wellbeing.

Women with known epilepsy will not have increased frequency of seizure and will deliver a healthy child. However, some women (between 14 and 32 per 100) will develop increased frequency which is harmful to the fetus [1]. The factors like increased steroid hormone levels, sleep deprivation and metabolic changes can be attributed to physiologic changes and psychological stress associated with pregnancy. As a rule, the fewer the number of seizures occurring in the 9 months before conception, the less the risk of worsening epilepsy during pregnancy. If the seizure frequency is at least one seizure monthly before pregnancy, there is a high probability that increased seizure frequency will be seen during pregnancy. This is in contrast to women having only one seizure during the 9 months before pregnancy. These patients have only a 25% risk of seizing during pregnancy [2].

Good seizure control in the first trimester is similarly associated with good control in later pregnancy is shown by a large multicentric prospective study European Registry of Antiepileptic Drugs and Pregnancy (EURAP). It also showed that the risk of intrapartum seizures is between 14 and 26 per 1000 pregnancies, and the risk of status epilepticus was low at < 1 per 100 pregnancies [1].

Women with epilepsy who are planning their pregnancy should be advised about the management of epilepsy and choice and dose of antiepileptic drugs, based on the risk to the fetus and control of seizures. Women should be reassured that most mothers have normal healthy babies and the risk of congenital malformations is low if they are not exposed to AEDs in the periconception period. Women should be informed that the risk of congenital abnormalities in the fetus is dependent on the type, number and dose of antiepileptic drugs [3].

96% of babies born to mothers with epilepsy will have no major malformations [1]. All women with epilepsy should be advised to take folic acid 5 mg/day prior to conception and to continue the intake until at least the end of the first trimester to reduce the incidence of major congenital malformation. Pre-pregnancy folic acid 5 mg/day may be helpful in reducing the risk of AED-related cognitive deficits. The lowest effective dose of the most appropriate AED should be used [3].

Aims and Objectives

To study the incidence, risk factors and management in known case of epilepsy patients.

Materials and Methods

This is a retrospective observational study from January 2016 to December 2020 in The Department of Obstetrics and Gynaecology, ESIC Medical College PGIMSR Bengaluru.

All pregnant women who were diagnosed to have epilepsy during this period were included in this study. We retrieved data from MRD and the case files pertaining to maternal demographic profile such as age, parity and associated risk factors. Mode of delivery, birth weight were recorded. Data was analyzed using SPSS version 24.

Inclusion criteria

All pregnant women who were diagnosed to have epilepsy during the period from January 2016 to December 2020 in the Department of Obstetrics and Gynaecology, ESIC Medical college PGIMSR Bengaluru were included in this study. There were a total of 80 cases.

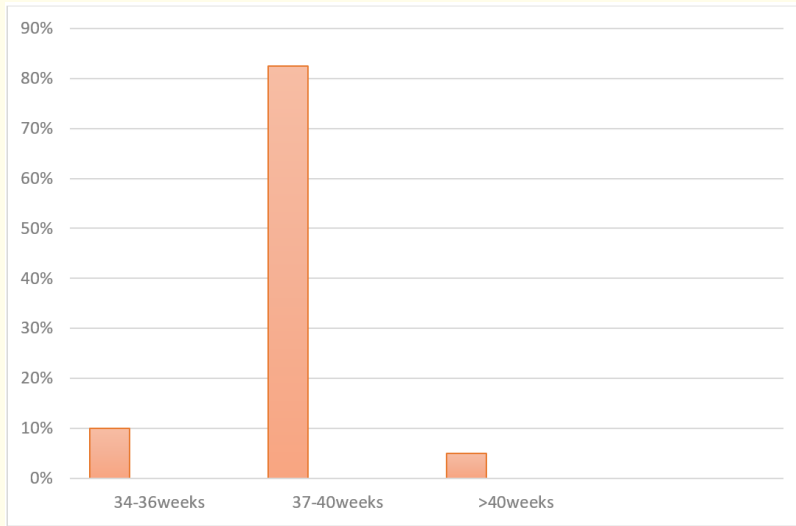
Exclusion criteria

Cases were excluded if eclampsia was present.

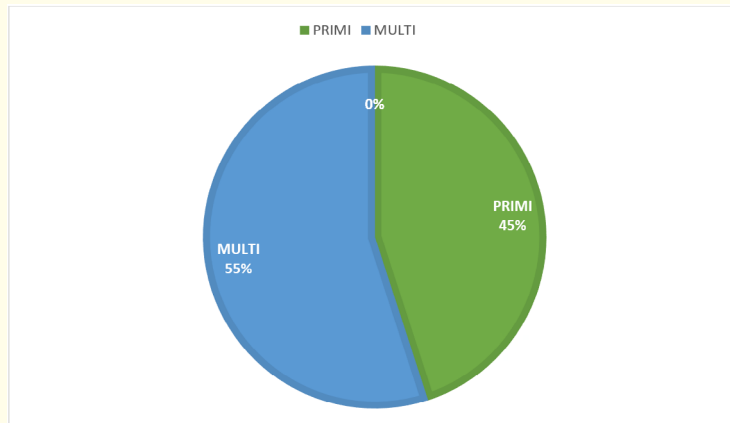
Results

The total number of deliveries during the study period was 15660 which included 80 cases who are known case of epilepsy accounting for an incidence of 0.51%.

Majority of women were of the age group 26 - 30 years (46.25%). 45% were primigravida and 55% were multigravida. Majority were belongs to gestational age group of 37 - 40 weeks (82.5%).



Graph 1: Distribution of cases according to gestational age.



Graph 2: Distribution of cases according to parity.

Age (years)	Number of cases	Percentage (%)
≤ 20	4	5
21 - 25	32	40
26 - 30	37	46.25
> 30	6	7.5

Table 1: Distribution of cases according to age.

Risk factors includes majority of previous cesarean section (26.25%), thyroid diseases (12.5%), pregnancy induced hypertension (10.5%), intrauterine growth restriction (8.5%), premature rupture of membranes (8%), oligohydramnios (7.5%), polyhydramnios, gestational diabetes mellitus (3.75%), twin gestation, oligodendroglioma (2.5%), h/o tubercular meningitis (1.25%), placenta previa, cardiac disease, gestational thrombocytopenia, anemia, bronchial asthma, Rh negative pregnancy (1.25%).

Risk factors	Number of cases	Percentage (%)
Previous cesarean section	21	26.25
Thyroid diseases	10	12.5
Pregnancy induced hypertension	9	10.5
Intrauterine growth restriction	8	8.5
Premature rupture of membranes	7	8
Oligohydramnios	6	7.5
Polyhydramnios	3	3.75
Gestational diabetes mellitus	3	3.75
Twin gestation	2	2.5
Oligodendroglioma	2	2.5
h/o tubercular meningitis	1	1.25
Placenta previa	1	1.25
Cardiac disease	1	1.25
Gestational thrombocytopenia	1	1.25
Anemia	1	1.25
Bronchial asthma	1	1.25
Rh negative pregnancy	1	1.25

Table 2: Associated risk factors.

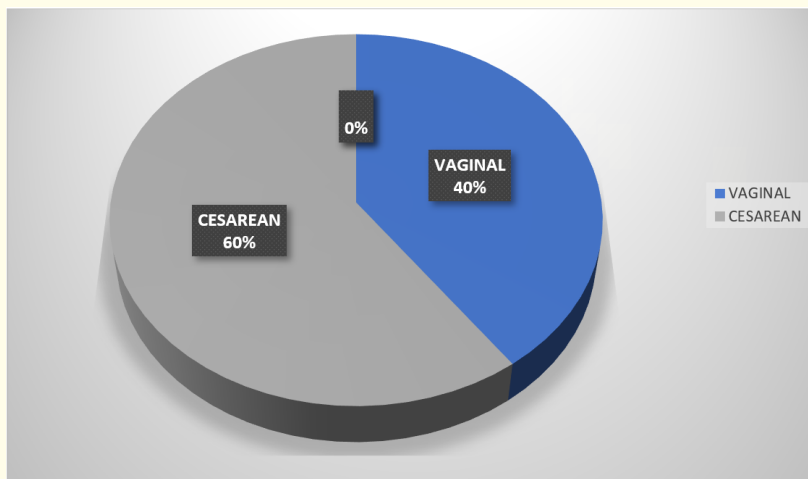
Majority were delivered by cesarean section (60%). Majority were more than 2.5 kgs birth weight. 51.2% were females.

Sex	Number of cases	Percentage (%)
Males	40	48.38
Females	42	51.21

Table 3: Based on sex of the babies.

Birthweight	Number of cases	Percentage (%)
1 - 2.5 kg	14	17.07
> 2.5 kg	68	82.92

Table 4: Based on birthweight of babies.



Graph 3: Based on mode of delivery.

Discussion

Epilepsy is a common chronic disorder affecting approximately over one million women of childbearing age. Patients who are epileptic who become pregnant are at risk of complications, including changes in seizure frequency, maternal morbidity and mortality, and congenital anomalies of the fetus due to antiepileptic drug exposure. The prevalence of epilepsy patients in this study is 0.51% which correlates with the study Hauser WA., *et al.* [4] showed 0.3 - 0.7%.

Majority of women were of the age group 26 - 30 years (46.25%) which correlates with the study done by Galappatthy P., *et al.* [5] and Ozdemir., *et al.* [6]. The advanced maternal age is not observed in our study, as women conceiving at an advanced age are slightly uncommon in our society. Advance maternal age is usually associated with medical disorders along with epilepsy. 45% were primigravida and 55% were multigravida. This is observed in Chawla L., *et al.* [7] study in which primigravida were 47.4% and multigravida were 52.6%.

Majority were belongs to gestational age group of 37 - 40 weeks (82.5%) which correlates with the study Ozdemir., *et al.* [6] and Chawla., *et al.* [7] as most women with epilepsy will not experience an increase in seizure frequency during pregnancy so they can be terminated at term gestation only.

Majority were delivered by cesarean section (60%) in our study as majority were previous cesarean section cases. 10% delivered spontaneously. 30% were induced for associated risk factors.

Majority were more than 2.5 kgs birth weight in our study which correlates with study Ozdemir, *et al* [6]. This may be due to good maternal care and proper regular antenatal checkups, follow up scans to look for fetal growth, doppler changes. Associated risk factors includes majority of previous cesarean section (26.25%), thyroid diseases (12.5%), pregnancy induced hypertension (10.5%), intrauterine growth restriction (8.5%), premature rupture of membranes (8%), oligohydramnios (7.5%) has been found in our study. History of tubercular meningitis is found in one case which is similarly seen in Chawla, *et al* [7].

Conclusion

Women with epilepsy are not at increased risk for obstetric and neonatal complications, provided there is a combined team management approach by a neurophysician and an obstetrician. Preconceptional counselling is necessary as it forms an important part of the management. Good antenatal care and administration of folic acid 5 mg/day preconceptionally.

Women with epilepsy should be reassured that most mothers have normal healthy babies and the risk of congenital malformations is low if they are not exposed to anti-epileptic drugs in the periconception period. Women should be informed that the risk of congenital abnormalities in the fetus is dependent on the type, number and dose of anti-epileptic drugs.

Bibliography

1. Kinney MO and Morrow J. "Epilepsy in pregnancy". *British Medical Journal* 353 (2016): i2880.
2. James D., *et al*. "High-Risk Pregnancy: Management Options". Cambridge: Cambridge University Press (2017).
3. Green-top Guideline No. 68 June 2016, Royal college of obstetricians and gynaecologists (2016).
4. Hauser WA., *et al*. "Descriptive epidemiology of epilepsy: contributions of population-based studies from Rochester, Minnesota". *Mayo Clinic Proceedings* 71.6 (1996): 576-586.
5. Galappatthy P., *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 and Childbirth* 18 (2018): 230.
6. Ozdemir O., *et al*. "Pregnancy outcome of 149 pregnancies in women with epilepsy: Experience from a tertiary care hospital". *Interventional Medicine and Applied Science* 7.3 (2015): 108-113.
7. Chawla L., *et al*. "Maternal and fetal outcomes of women with epilepsy: study from a tertiary care center in India". *International Journal of Gynecology and Obstetrics* 3.1 (2015): 223-227.

Volume 11 Issue 10 October 2022

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