Section: OBG

Original Research Article

STUDY OF OUTCOMES IN PREGNANT WOMEN WITH EPILEPSY

M. Sofia Sowjanya[1], M. Sudha Rani[1], K. Sowmya[2], P. Padmavathi[3]

[1]Assistant Professor, Department of OBG, Government Medical College, Kadapa, Andhra Pradesh, India
[2]2nd year Post Graduate, Department of OBG, Government Medical College, Kadapa, Andhra Pradesh, India.
[3]Associate Professor, Department of OBG, Government Medical College, Kadapa, Andhra Pradesh, India.

Received : 15/10/2024
Received in revised form : 04/12/2024
Accepted : 19/12/2024

Keywords:
Antiepileptic drugs, epilepsy, periconceptional counselling.

Corresponding Author:
Dr. P. Padmavathi,
Email: padmapolakal@gmail.com

DOI:10.47009/jamp.2024.6.6.179

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2024; 6 (6); 945-948

Abstract

Background: Epilepsy is the most common neurological complication encountered in pregnancy. The incidence of seizures during pregnancy ranges from 0.15% to 10%. In India it is estimated that there are about 2.73 million women with epilepsy (WPW) and 52% of them are in reproductive age group. WWE account of 0.3 to 0.4% of all pregnancies. The levels of most Antiepileptic drug concentrations are reduced during pregnancy and this may increase seizure frequency. Women with epilepsy have an increased risk of pregnancy complication that includes abortion, congenital anomalies, hemorrhage, hypertensive disorders, preterm birth, fetal growth restriction, cesarean delivery, SUDEP (sudden unexpected death in epilepsy). The risk of death is increased tenfold in pregnant WWE compared with those without the condition. Prepregnancy counselling and prescribing 5mg/day of folic acid and to continue until the end of the first trimester to reduce the incidence of major congenital malformation. Regular planned antenatal care with designated epilepsy care team and multidisciplinary approach are needed to reduce the complications. **Materials and Methods:** This is a prospective analytical study in Government General Hospital, obstetric department, KADAPA, Andhra Pradesh from October 2023 to September 2024.Cases suitable for inclusion are pregnant women with proven epilepsy whether or not taking an Antiepileptic drug either in mono therapy or poly therapy. After taking consent details like age, parity, type of presenting seizures, frequency, drug history, time at which last attack had occurred, number of seizure medication are collected and pregnancy complications and maternal fetal outcomes are studied. **Result:** During the period of our study of 1year 34 cases are admitted with epilepsy complicating pregnancy. Most common maternal complications are anaemia (35.2%), preterm birth (11.7%), preeclampsia (2.9%), jaundice with HCV positive (2.9%), congenital anomalies (2.9%), maternal mortality (2.9%). Fetal complications are fetal growth restriction (5.8%), fetal distress(5.8%), abortion (2.9%). **Conclusion:** Women with epilepsy require more care during pregnancy as the rate of complications are relatively high among them. Risk of congenital anomalies can be lowered with proper preconceptionally counselling. Multidisciplinary strategy is essential to improve maternal and fetal outcomes.

INTRODUCTION

Epilepsy is one of the most common neurological conditions in pregnancy with a prevalence of0.5-[1%].[1]

An estimated 2500 Infants, are born to WWE (women with epilepsy) every year in the unitedkingdom.[2]

About 〖1/3〗^rd of WWE are in the reproductive age group.[3]

The risk of death is increased tenfold in Pregnant WWE compared with those without the condition,[1] Fourteen maternal deaths that occurred between 2009 - 2012 were attributed to epilepsy in the 2014 MBRRACE-UK report,[4] [confidential death enquiries into maternal deaths and morbityTwelve of these 14 deaths were classified as SUDEP (sudden unexpected death in epilepsy). The report highlights the urgency for developing a multiagency

ISSN (O): 2687-5365; ISSN (P): 2753-6556

guidance to standardize and improve the care of pregnant WWE.

The risk of major congenital malformation in the foetus is increased in WWE taking antiepileptic drugs (AED).[5] Exposure to sodium valproate and potentially other antiepileptic drugs (AED) may also have an adverse effect on the neurodevelopment of the new born in the long term,[5,6] Care of WWE continue to be fragmented. The need for better epilepsy review services and engagement with WWE during the preconception period and in pregnancy, has been a recurrent focus of confidential enquiries into maternal and child health in UK.[4]

Women with a history of epilepsy who are not considered to have a high risk of unprovoked seizures can be managed as low risk women in pregnancy.Women who have remained seizure free for at least 10 years (with last 5 years off AED's) and those with a childhood epilepsy syndrome who have reached adulthood seizure and treatment free are considered no longer to have epilepsy.[7]

Genetic counselling should be considered if one partner has epilepsy, particularly if partner has positive family history of epilepsy.

MATERIALS AND METHODS

This is prospective analytical study in Government General Hospital Obstetric department, Kadapa, Andhra Pradesh state from October 2023 to September 2024.

Inclusion Criteria

Pregnant women with proven epilepsy whether or not taking antiepileptic drugs either monotherapy or polytherapy

Exclusion Criteria

Eclampsia

CVA

Details collected

Epilepsy details: Time of onset seizure type

Frequency

Drug history

Time at which last attack has occurred

Number of seizure medications taken.

RESULTS

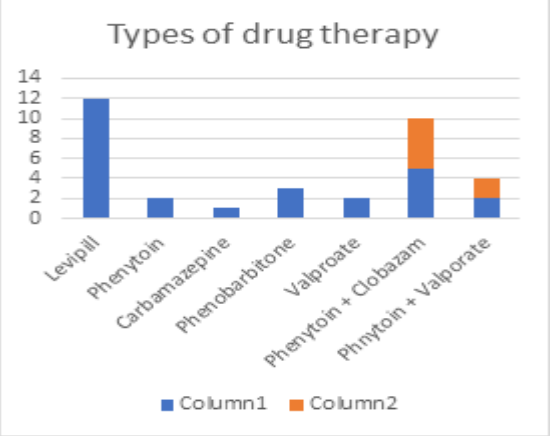

Figure 1: Types of drug therapy

Total no. of deliveries during the study period of 1 year are 6474.

Among them 34 had epilepsy complicating Pregnancy (0.5%).

Most of women come under 20-29y (91.1%) of age group. out of them 20 cases (58.8%) cas are booked and 12(35.2%) are un booked cases but 2(5.8%) are on irregular treatment.

64.7% of women presented with GTCS type of seizure which are common followed by complex partial (29.4%) and least to focal seizures l(5.8%).

Monotherapy is the most preferable treatment,20(58.8%) cases taken monotherapy.Among them most of the cases 12(35.2%) used T.Levipril, followed by T.phenobarbitine 3(8.8%),T.phenytoin2(5.8%),T.valproate2(5.8%), T.carbamazepine1(2.9%).

Poly therapy is taken by 14(41.1%)cases, Among them 10(29.4%) cases are onT.phenytoin and clobazam, followed by 4(11.7%)cases on T.phenytoin and valproate.

Most common complications are Anaemia 12(35.2%), followed by preeclampsia 1(2.9%), Jaundice with HCV positive, preterm birth 4(11.7%), congenital Anomalies 1(2.9%),and this is cleft lip and cleft palate with T.sodium valproate.

Maternal mortality 1(2.9%) due to épilepsy with jaundice with DIC.

Most of them had normal vaginal delivery (55.8%)

Indications for caesarean section8(41%)cases are prior LSCS (57.7%), 4 cases with CPD (28%), & 2 cases with fetal distress(14.2%).

27 cases (79.4%)has Apgar score of 7-10,4 cases(11.7%) has low Apgar of 4-6,2 cases (5.8%),has Apgar score of 2-3.4 cases(11.7%) had NICU admisscions. Perinatal mortality rate is 5.8%

ISSN (O): 2687-5365; ISSN (P): 2753-6556

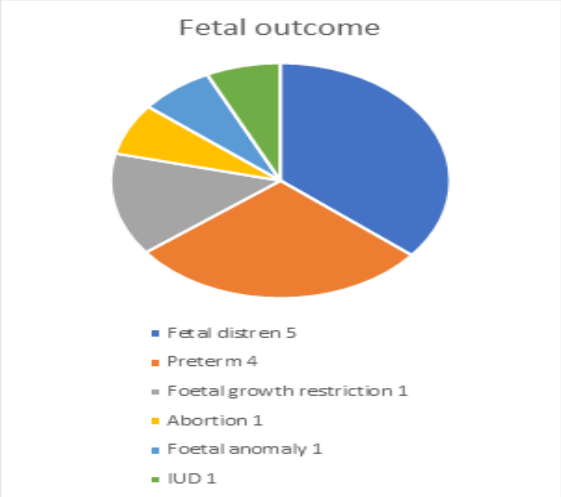

Figure 2: Fetal outcomes

Children of epileptic women have 10% risk of seizure disorder.

Table 1: Prevalence of epilepsy complicating pregnancy is 0.5%.

Age	Number of individuals epilepsy	Percentage
<20	2	5.8
20.29	31	91.1
>30	1	2.9

Table 2

Type of seizure	Number of individuals	Percentage
GTCS	22	64.7%
Focal	2	5.8%
Complex	10	29.4%

Table 3: Antenatal complications

Complications	Number	Percentage (%)
Anaemia	13	35.2
Preeclampsia	1	2.9
Jaundice	1	2.9
Preterm birth	4	11.7
Congenital Anomalies	1	2.9

Table 4: Mode of delivery

Mode of delivery	Number of cases	Percentage
Abortion	1	2.9%
Normal vaginal delivery	19	55.8%
Caesarean section	14	41%

Table 5: Fetal Outcome

Apgar score	Number	Percentage
7-10	27	79.4
4-6	4	11.7
2-3	2	5.8

DISCUSSION

Seizure disorders are the most frequent major neurologic complication in Pregnancy. In general more than 90% of pregnancies in women with epilepsy result in a normal delivery without any apparent complications.[8]

However, women with epilepsy are often considered at high risk in pregnancy because of increased obstetric and fetalrisks and maternal mortality is10 times higher in women with epilepsy than in the general population.[9] Offsprings of women with epilepsy were at higher risks of still birth, diagnosis and Proper drug selection can reduce risks.

In our study mean age of increase prevalence is 20-29 years. It is almost in correlation with study by Thomas et al.[16]

In this study higher percentage is in second pregnancy. In our study most of seizures are GTCs. (64.7%), followed by complex partial seizures (29.4%.) and focal seizures (5.8%).According to Li et al focal seizures were 31.1% of the study group.[17]

In our study monotherapy is 58,8%, compared to Polytherapy (41.1%).It is comparable to a study by Alsfouk et al where monotherapy was given at 52% and Polytherapy at 29%.[18]

ISSN (O): 2687-5365; ISSN (P): 2753-6556

In our study incidence of preeclampsia is 2.9% which is similar to National cohort study in Sweden. In 2017 national cohort study in Sweden, the incidence of preeclampsia was 4%. In women with epilepsy compared to 2.8% in the control group,[10] which is similar to the rate of preeclampsia in women with epilepsy in the United States (5.9%).A registry-based cohort study in Norway collected during 2004 to 2012 similarly observed an increased risk of gestational hypertension in women with epilepsy, with the most frequent hypertensive complication being mild preeclampsia.[12]

In our present study rate of cesarean section is 41.1% and common indications are prior cesarean section (57.1%), followed by CPD(28%) and fetal distress (14.2%).The overall Caesarean delivery rate in the United States was 32.7% in 2013 (13) and common indications are, in North America are elective repeat caesarean delivery (30%), dystocia or failure to progress (30%), mal presentation (11%), fetal distress (10%). In a population based, cohort Study in Iceland, the frequency of caesarean delivery in women with epilepsy was about twice.

In the present study the prevalence of congenital malformation is 2.9% and this is with sodium valproate.A 2016 Cochrane review conducted a meta-analysis for antiseizure medication monotherapy and pooled data showed that the malformation prevalence is 1.47%. for gabapentin, 1.77% for levetiracetam 62.6% for phenytom, 10.93% tor Valproate.[15]

In our study the rate of preterm birth is 11.7%.The rate of preterm birth in women with epilepsy is 7.6% with the highest rate seen in United States and the lowest in European countries.[11]

In our study maternal mortality is 2.9-% and death are due to associated comorbidity of Jaundice with attired coagulation profile.

Most of the babies in our study weighed between 2to 3kg amongst which almost 2/3rd was appropriate weight for gestational age and the rest were low birth weight.In a Sturdy by chen et al,[19]there is an increased risk of small for gestational age babies and preterm labor.

CONCLUSION

Women with epilepsy requires more care during pregnancy and the rate of maternal, fetal complications are relatively high among them. Risk of congenital anomalies can be lowered with proper preconceptional counselling, commencing folic acid 5mg once daily prior to pregnancy. They should have access for regular planned antenatal care with a designated epilepsy care team. Serial growth scans are required for detection of small-for -gestational age babies. Uncontrolled tonic clonic Seizures are risk factor for SUDEP (Sudden unexpected death in Epilepsy) so Multidisciplinary strategy is essential to improve Maternal and fetal outcomes.

REFERENCES

1. Edey S, Moran N, Nashef L.SUDEP and epileply-related mortality in pregnancy. Epilepsia 2014;55 :e72-4
2. UK Epilepsy and pregnancy register[http://www.epilepsy and pregnancy.co.uk/] Accessed 2016 Jan6.
3. Adab N, Chadwick DW. Management of women with epilepsy during pregnancy. The Obstetrician and Gynaecologist 2006, 8:20-5
4. Knight M, Kenyon s BrocklehuntP,Neilson J, shakespeare J, kurinczukJJ(Ed) on behalf of MBRRACE-UK
5. Artoma M, Auvinen A, RaudaskoskiT, Iso Jarvi I,Isojarvi J. Anti epileptic drug use of women with epilepsy and congenital Malformations in offspring Neurology 2005; 64:1874-8
6. Banach R. Boskovic R, Einarson T, koren G. Long term developmental outcome of childen of women with epilepsy unexposed or exposed prenatally to antiepileptic drugs;ametaanalysis. of cohort studies;Drugsaf 2010; 33 :73-9.
7. Fisher Rs, Acevedo c, Arzimanoglou A, Bogacz A. Cross JH, Elger CE, et alILAE official report: a practical Clinical definition of epilepsy.Epilepsia 2014, 55 475-82
8. Teramok, Hiilesmaa V, Bardy A, SarikoskS,Fetal heart rate during a maternal grandmal epileptic seizure J. perinat Med 1979, 7:3-6
9. chowdhury FA Nashef L Elwes RD. Mis diagnosis in epilepsy, a review and recognition of diagnostic UncertainityEur J Neurol 2008; 15. 1034-42
10. Razaz N, Tomson T, Wikstrom Ak, Corattingius S. Association between pregnancy and perinatal outcomes among women with Epleysy JAMANeurol2017; 74(8) ; 983-991
11. Allotey J, Aroyo-Manzaned, Lopez p et al. Globalvariation In pregnancy complications in women with Epilepsy a mete analysis. Eur J obst-GynecolReprodBiol 2017:215:12-19.
12. Danielsson kc, Borthen I, Morken NH, Guillus NE Hypertensive pregnancy complications in women with epilepsy and antiepileptic drugs ;a population-based cohort study of first pregnancies on Norway. BMJ open 2018, 8(4);e 020998. doi:
13. Martin JA, Hamilton BE osterman MJ, et al Births final data for 2013 Natl vital Stat Rep 2015, 64(1):1-65.
14. Olafsson E, Hallgrimsson JT, Hauser WA, et al. pregnancies of women with épilepsy a population based study in Iceland.. Epilepsia 1998, 39(8);887-892 doi: 10.111 J.1528 -1157. 1998 tbo1186.x
15. weston J, Bromley R, Jackson of, et al. Monotherapy treatment of epilepsy in pregnancy: congenital Malformations out comes in the child"cochrane Database Syst Rev 2016,;11(4):CD010224. doi:10.1002/14651858. CD010 224 ,pub 2
16. Thomas SV indrani L, Devi GC, Jacob S, Begum, Jacob PP, et al. Pregnancy in women. with epilepsy preliminary results of Kerala registry of epilepsy and pregnancy Neurol India 2001, 49;60-6.
17. Li W Hao N Xiao Y, Zhou D. clinical characteristics and pregnancy outcomes of new-onset epilepsy during pregnancy Medicine (Baltimore) 2019; 98.016156.
18. Alsfousk BA, AlmarzouqiMR,Alsfouk AA. AlagrelS,Alsemari A, Anti seizure medications during pregnancyand congenital malformations, A retrospective study in saudiArabia,soudi pharm J 2021;29: 939-45

ISSN (O): 2687-5365; ISSN (P): 2753-6556