

Maternal And Neonatal Outcomes In Women With Epilepsy; 20-Year Tertiary-Care Hospital Study

Shahwar.D, Mohib.Q, Raza.A, Majid. A, Maqsood.W



آغا خان یونیورسٹی ہسپتال
The Aga Khan University Hospital



Objective

This study aims to **evaluate** the effect of **epilepsy** and **Antiepileptic** drugs on **maternal and perinatal** outcomes.

Design and rationale

Epilepsy is the most common neurological disorder, affecting **40% women of reproductive age**. While it has an impact on maternal outcomes, it can affect perinatal outcomes, particularly due to the effects of anti-epileptic drugs (AEDs), hence we conducted a retrospective case-control study to analyse pregnant women with epilepsy

Methodology

This retrospective case-control study was conducted at AKUH, including all pregnant women with diagnosed epilepsy in the past 20 years from January 2002 till December 2022. Data analyses were done using Statistical Product and Service Solutions (SPSS) version 20.0

RESULTS

A total of **359 pregnant women** with epilepsy were reviewed. The **median age** and **BMI** in cases were **28.49±4.88** and **27.75±4.91 (P= 0.001)** respectively. Most were primigravida (73%), and the majority (70.5%) had conception in remission.

Of the patients, 205 (57%) were on monotherapy, and 53 (14%) received polytherapy. Most of the patients on carbamazepine (23.1%), Lamotrigine (18.4%), Levetiracetam (18.4%), and oxcarbazepine (4.2%). During pregnancy, **90 (25%) patients experienced generalized tonic-clonic seizures whereas 3.3% of patients had seizures in the postpartum phase.**

Fetal/Neonatal Outcomes				
Fetal/Neonatal Outcome	Case	Control	OR [95% CI]	P-Value
SGA	14 (3.9%)	7 (1.8%)	2.26 [0.90–5.65]	0.075
IUGR	20 (5.6%)	30 (7.6%)	0.72 [0.40–1.29]	0.269
Low birth weight	52/347 (15%)	39/396 (9.8%)	1.61 [1.03–2.51]	0.043
Apgar <7 at 1 min	13/347 (3.7%)	8/396 (2%)	1.88 [0.77–4.61]	0.157
Apgar <7 at 5 min	10/347 (2.9%)	4/396 (1%)	2.91 [0.90–9.35]	0.061
Still Birth	2/347 (0.6%)	1/396 (0.3%)	2.21 [0.21–25.36]	0.506
NICU Admission	22/345 (6.4%)	28/395 (7.1%)	0.89 [0.50–1.59]	0.700
NND	4/345 (1.2%)	2 (0.5%)	2.31 [0.42–12.66]	0.323
Fetal Anomalies	23 (6.4%)	0	NA	0.0005

Statistically significant outcomes included **fetal CNS and cardiac anomalies (6.4%) related to patients who were on valproate (4.2%) and carbamazepine (23%)**. Other statistically significant outcomes were **cesarean delivery (56.27%), preterm birth (23%), preterm rupture of membranes (PPROM) (2.2%), low birth weight (LBW) (15%), and maternal ICU admission (3.4%) p = < 0.05**

Conclusion:

In addition to valproate, **carbamazepine was also associated with fetal anomalies** hence should be used cautiously and further research is required to analyse its safety. **Preterm birth, PPROM, LBW, caesarean delivery and maternal ICU admission** are all risk factors that should be kept in mind while managing and counselling women with epilepsy.

Maternal Outcomes				
Maternal Outcome	Case	Control	OR [95% CI]	P-Value
PIH	34 (9.5%)	24 (6.1%)	1.62 [0.94–2.79]	0.079
Pre-eclampsia	9 (2.5%)	19 (4.8%)	0.51 [0.23–1.14]	0.096
Eclampsia	2 (0.6%)	2 (0.5%)	1.10 [0.15–7.87]	0.992
GDM	13 (3.6%)	23 (5.8%)	0.61 [0.30–1.22]	0.159
Cesarean delivery	202 (56.3%)	188 (47.5%)	1.42 [1.07–1.89]	0.016
Preterm <34	40 (11.1%)	17 (4.3%)	2.79 [1.55–5.03]	0.0005
Preterm <37	84 (23.4%)	59 (14.9%)	1.75 [1.21–2.52]	0.003
PPROM	8 (2.2%)	1 (0.3%)	9.03 [1.12–72.34]	0.012
PROM	1 (0.3%)	0	NA	0.296
Severe Morbidity/ICU	12 (3.4%)	0	NA	0.0005