

Recurrent Seizures in Pregnancy: Epilepsy or Eclampsia?

William Alexander Setiawan¹, Melisa Andriana², A.A. Eka Wardani³

^{1,3}Department of Obstetrics and Gynaecology, Wangaya General Hospital, Bali, Indonesia

²Krida Wacana Christian University, Jakarta, Indonesia

Abstract: *Seizure in peripartum is an obstetrical emergency with substantial morbidity and mortality for the mother and fetus. Among various causes of such seizures, sometimes 2 causative factors can occur, simultaneously creating a dilemma in pharmacotherapeutic management. This reports the case of a 23 years old primigravid woman, 38 weeks of gestation, with the chief complaints of about to give birth with recurrent seizures. She had previous epilepsy history. In this pregnancy, hypertension was diagnosed on admission. She underwent emergent cesarean delivery under general anesthesia to rescue the baby. Blood pressure control was achieved using amlodipine, ramipril and bisoprolol. High vigilance required for such patients, and therapy should be titrated according to patient response.*

Keywords: Eclampsia, epilepsy, pregnancy, recurrent seizures

1. Introduction

Peripartum seizure is an obstetrical emergency with high morbidity and mortality for mother and fetus. Regardless of the cause of idiopathic, various other causes seizures in pregnancy including eclampsia, antiphospholipid syndrome, cerebral venous thrombosis, cerebral infarction, alcohol withdrawal, and hypoglycemia.^[1]

Peripartum seizure is a symptom that often occurs in epilepsy and eclampsia. Epilepsy is a chronic neurological disorder that makes pregnancy dangerous. What must be considered in complicated pregnancies caused by epilepsy is an increased risk of congenital abnormalities associated with the consumption of antiepileptic drugs in which antiepileptic drugs will reduce folic acid levels. The risk of seizures also increases during labor, with 2% of women with epilepsy experiencing seizures during labor or in the first 24 hours after delivery.^[2]

Eclampsia is a hypertensive disorder in pregnancy with manifestations of edema, proteinuria, and seizures. Eclampsia is also associated with a variety of neurological problems, such as cerebrovascular disorders, visual disturbances and blindness. In severe preeclampsia and eclampsia, the delivery process is immediately carried out so that the baby is born healthy and the mother survives.^[3]

The dangerous things during pregnancy for the mother and fetus are if uncontrolled seizures occur. Tonic-clonic seizures can cause physical injury and placental abruption in the mother and hypoxia, acidosis, intracranial hemorrhage, and death can occur in fetus. The pregnant patient may also have aspiration causing aspiration pneumonitis during seizures.^[4] But it is difficult to distinguish eclampsia seizures and epileptic seizures. Emergency caesarean section is needed if recurrent seizures occur in labor.^[2]

2. Case Summary

A 23 years old primigravid woman, 38 weeks of gestation, came to Wangaya General Hospital with the chief complaints of about to give birth with recurrent seizures. In this pregnancy, hypertension was diagnosed on admission

because on previous examination the patient did not have hypertension. Recurrent seizures occurred 3 times that started about five hours before admission and the duration of every seizure about 5 minutes. There is a decrease in consciousness after a seizure. On a review of the medical history, she had known epilepsy for 2 years and not taking antiepileptic drugs.

On physical examination found bad general condition, somnolent, the blood pressure was 170/110 mmHg, pulse 94/minutes, respiratory 20/minutes, heart and lung in normal limit, no ascites and pretibial edema was found. Obstetrical examination found fundal height was 28 cm, cephalic presentation, fetal heart rate 143/minutes, regular, vaginal toucher examination not done. Results of her laboratory investigation showed the following values: hemoglobin 13.1 gr/dL, platelets 389.000/mm³, AST 62 u/L, ALT 25 u/L, ureum 16 mg/dL, creatinin 0,8 mg/dL, natrium 147 mmol/L, kalium 2,4 mmol/L, chloride 104 mmol/L, urinalysis +2 protein. The results of the EEG examination 1 year ago showed a spike in the left temporal region. Thorax X-ray showed cardiomegaly, arcus aorta elongation, and bilateral pleural effusion. The results of the Head CT scan do not show abnormalities.

An injection of magnesium sulfate 10 mg was administered intramuscularly. The patient goes through emergency caesarean delivery under general anesthesia. Written informed high-risk consent was obtained. After delivery, blood pressure control was achieved using amlodipine 10 mg once daily, ramipril 5 mg once daily, and bisoprolol 2,5 mg once daily. Antiepileptic drugs given to control seizures is phenytoin with addition folic acid supplement.

3. Discussion

The first management of patients with seizures in pregnancy should include airway maintenance, oxygenation, and adequate perfusion support. monitor the condition of the fetus immediately, especially if it has reached a viable gestational age. Computational tomography (CT) brain scans are needed to differentiate the organic causes of seizure centers from eclampsia, but attention to the safety of the mother and fetus is due to constant radiation exposure.^[5]

In these patients there is a recurrent generalized tonic-clonic seizures with an image leading to eclampsia along with a history of epilepsy. In this case, there is a dilemma in determining pharmacotherapy management during seizures.

Epileptic disorder can improve or even worsen during pregnancy. Reasons for worsening during pregnancy include poor adherence, lack of sleep, increased distribution volume, reduced absorption of antiepileptic drugs from the gastrointestinal tract, nausea and vomiting, hyperventilation during labor, and hormonal changes. We should need to have an initial blood level of early pregnancy antiepileptic medication to confirm compliance and to guide any improvement that might be needed, but in this emergency case, the measurement of plasma levels for antiepileptic drugs is not feasible and the level is not obtained in early pregnancy.^[2]

In these patients respond to conventional antiepileptic agents, which then subside only after the start of magnesium therapy. This means that if seizures occur in pregnancy, they must be evaluated as eclampsia until proven otherwise. Emergency cesarean section is required if there is repeated generalization of the seizure, to avoid maternal and fetal morbidity.^[6]

The use of several pharmacotherapy in the management of patients with recurrent seizures has a good impact on the fetus, as seen in these patients. The baby has a poor Apgar score at delivery, which improves only after adequate resuscitation. in perioperative management of patients like this, the presence of a pediatrician and resuscitation equipment must be available.

4. Conclusion

The conclusion obtained is that high alertness is needed in patients with comorbidities such as epilepsy and high-risk pregnancies with eclampsia. patient response will determine dose adjustment, given the impact on the fetus.

References

- [1] Cagnetti C, Lattanzi S, Foschi N, Provinciali L. Seizure Course During Pregnancy in Catamenial Epilepsy. *American Academy of Neurology*. 2014: 339-342.
- [2] Kanako A, Iromi H, Takahiro Y, Mana OY. Impact of Planning of Pregnancy in Women with Epilepsy on Seizure Control During Pregnancy and on Maternal and Neonatal Outcomes. *British Epilepsy Association*. 2013: 112-116.

- [3] Ravindra P, Rakes G, Vanial D, Jyostna P. Recurrent Seizures in Pregnancy—Epilepsy or Eclampsia: A Diagnostic Dilemma? A Case Report. *ANAA Journal*. 2011: 388-390.
- [4] Angela LN, Giovanni B, Teresa F, Marzia P. Prospective, Case Control Study on the Effect of Pregnancy on Seizure Frequency in Women with Epilepsy. *Neurol Sci*. 2015: 79-833.
- [5] Frank J, Terrence O, Cecilie L, Janet G. The Efficacy of the Newer Antiepileptic Drugs in Controlling Seizures in Pregnancy. *Epilepsia*, 55(8). 2014: 1229-1234.
- [6] Sveberg L, Svalheim S, Tauboll E. The Impact of Seizures on Pregnancy and Delivery. *SEIZURE: European Journal of Epilepsy*. 2015.

Author Profile



William Alexander Setiawan, MD. Graduate from KridaWacana Cristian University. Work at WangayaGeneral Hospital. Interest in Obstetrics and Gynaecology.



Melisa Andriana, MD. Graduate from KridaWacana Cristian University. Interest in Obstetrics and Gynaecology.



Anak Agung EkaWardani, MD, PhD, Obstetrician and Gynaecologist, Graduate from Udaana University and work at Wangaya General Hospital.