Multiple Daily Seizures in a Pregnant Woman - A Case Report

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INTRODUCTION

A seizure is a brief disturbance of cerebral function, lasting from seconds to a few minutes, caused by an abnormal electrical discharge. Epilepsy is the tendency to have seizures on a chronic, recurrent basis, not resulting from a temporary condition. The term, epilepsy, does not presuppose a cause; there are many causes. Essentially, anything that disturbs the normal functioning of the cerebral cortex can cause seizures, and if this abnormality is enduring, it can result in epilepsy.[1] Epilepsy is a common neurological condition with a global prevalence of 1.2 %. Most women with epilepsy who become pregnant or are planning to conceive are recommended to continue taking antiepileptic drugs (AEDs) to minimise seizure recurrence during pregnancy, adverse effects to the fetus, and unintended ill consequences during labour and / or delivery.[2,3] The seizure pattern during pregnancy may be influenced by variations in ovarian hormones, blood levels of antiepileptic drugs, and metabolic changes.[4]

Status epilepticus occurs in only 1 – 2 % of pregnancies,[5] and if treated appropriately and aggressively carries a fairly low risk of morbidity and mortality. Structural and metabolic changes may precipitate new-onset seizures during pregnancy. The structural causes include intracranial haemorrhage of multiple types, cerebral venous sinus thrombosis, and ischemic stroke. Metabolic causes include hyperemesis gravidarum; acute hepatitis (due to fatty liver of pregnancy or viral hepatitis); metabolic diseases, such as acute intermittent porphyria; infections, such as malaria; and eclampsia.[5] Evaluation and management should be performed in a stepwise fashion and may require a multidisciplinary approach with other specialties such as neurology.[6] The threat of seizures during pregnancy and the consequences that they might have on the developing foetus are fundamental reasons for the prescription of daily antiepileptic medication to a pregnant woman with epilepsy (WWE).[7] We present an original case of 3 episodes of seizures, of 22-year-old female who was 16 weeks pregnant. This study was approved by Sree Uthradom Thirunal Hospital, Pattom, Trivandrum, Kerala (ethics committee).

PRESENTATION OF CASE

A 22-year-old female who was 16 weeks pregnant, was referred to our emergency medicine department with a history of 3 episodes of seizures. The patient was in postictal state at the day of admission. Patient was treated immediately by an emergency intubation of inj. rocuronium and further was maintained by inj. vecuronium and midazolam infusion. Arterial blood gas (ABG) was taken. On lab investigations we found patient to have hyperammonaemia. The type of seizures presented by the patient was generalised tonic-clonic seizures (GTCS) type.

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DOI: 10.18410/jebmh/2021/193

How to Cite This Article:
Vivek G, Nair BC, Ayappan K, et al. Multiple daily seizures in a pregnant woman - a case report. J Evid Based Med Healthc 2021;8(15):1000-1002. DOI: 10.18410/jebmh/2021/193

Submission 07-10-2020,
Peer Review 14-10-2020,
Acceptance 23-02-2021,
Published 12-04-2021.

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The woman was pregnant for the second time. During her first pregnancy there was no history of seizures and she delivered a full-term baby by normal vaginal delivery. For last one and half years she was under treatment for seizure disorder (localisation-related epilepsies-LER, frontal). The carbamazepine (400 mg 1 – 0 - 1) and clobazam (5 mg - 0 - 10 mg) dosage kept her seizure free for almost 1 year. On November 2019 patient experienced break through seizures. She was admitted on November 29 and was evaluated. Magnetic resonance imaging (MRI) brain was normal, and electroencephalogram (EEG) showed left frontal interictal epileptiform discharges (IEDS) she had dimorphic anaemia with normal vitamin B12 and ferritin levels.

Levetiracetam 1 gm 1 - 1 -1 was added, gynaecology evaluation was done. On 6th December 2019 she was seizure free and was discharged. On next day, she was again admitted due to 3 episodes of seizures. Semiology was eyes deviation to right, head turn to right, jerky movements of right upper limb followed by generalisation. Patient had post ictal aphasia and EEG showed left frontal electrographic seizures. Patient was admitted in ICU and started on midazolam infusion and lacosamide 200 mg 1 – 0 - 1 was added. Midazolam infusion was continued for 24 hours.

On 9th December 2019, EEG was repeated which showed bilateral frontal (IEDS). Patient remained aphasic. She had (twice) recurrence of seizures on next day as well and she was loaded with fosphenytoin. She was intubated and mechanically ventilated and loaded with sodium valproate IV 100 mg / ml. She was put on midazolam infusion. Burst suppression was attained and maintained for 24 hours. DVT (Deep Venous Thrombosis) prophylaxis was initiated. Gynaecological assessment was done regularly. Nature and prognosis of status epilepticus and the effect of epilepsy and antiepileptics on the foetus was explained to the relatives.

On 12th December 2019 patient developed hyper ammonia (237) and valproate was stopped and phenobarbitone was initiated. Next day midazolam was tapered off. Cardiology consultation was done in view of tachycardia, ECHO showed normal LV function. Carbamazepine level came as 2.3 and dose was increased to 600 mg 1 – 0 - 1. EEG showed Bipeds (bilateral epileptiform discharges) CSF study was normal. Patient's relatives opted for medical termination of pregnancy.

Hysterotomy and sterilisation was done under general anaesthesia on 14th December 2019. Intermittent hypoventilation and saturation fall developed which was managed with non-invasive ventilation. On 19th December 2019 patient experienced recurrence of seizures and perampanel IV 8 mg was added. Patient was given 3 -day course of IV methyl prednisolone 500 mg.

Patient continued to have 2 - 3 episode of seizures daily, lasting less than 1 minute. She developed high grade fever and cough. Xray was suggestive of aspiration pneumonia. Inj. meropenem was started and patients had fever, serial worsening of WBC counts and increase in seizure frequency. Meropenem was stopped and colistin and teicoplanin was added. Topiramate 100 mg 1 – 0 - 1 was started but dose was reduced to 25 mg 1 – 0 - 1 after 2 days due to hyperammonaemia (271). Patient was initiated on gabapentin 300 mg 2 – 2 - 2.

EEG showed multiple electrographic seizures with suppressed background. EEG in addition showed left frontal electrographic seizures and later bilateral frontal IEDs. On neurosurgeon opinion anticonvulsant therapy was started. The dose of anticonvulsant loading dose of 0.03 - 0.3 mg / kg in increments of 1 - 2.5 mg and a maintenance dose of 0.03 - 0.2 mg / kg / hour was given intravenously.

Anti-convulsants used and their doses:
Midazolam: 15 mg / hr. for three days IV infusion. Total of 1080 mg for three days
Fosphenytoin: (Dose) 20 mg / kg 150 mg 8th hourly.
Lacosamide: 200 mg stat followed by 200 mg IV BD.
Frisium: 10 mg BD.
Sodium valproate: dose: 25 mg / kg Total of: 1250 mg IV BD.
Gabapentin: 600 mg TID FOR 3 days.
Topiramate: 300 mg stat was given then a dose of 100 mg BD was started.
Vigabatrin was started but was not responding hence, stopped.

Patients' pneumonia improved and she underwent tracheostomy for protection of airway. Patient continued to have seizures lasting less than one minute at a frequency of 1 / hr. Vigabatrin 500 MG 1 – 0 - 1 was added. Patient had tracheostomy block due to blood clot on 28 / 11 / 2019 and Inj. Clexane was withheld. Patients seizure frequency was reduced to 4 – 5 / day. Endotracheal suction culture grew Serratia sensitive to ceftriaxone. Teicoplanin was stopped on day 6 and colistin was stopped on day 7. Ceftriaxone was started as patient had fever. Patient had multiple episodes of right focal seizures, and she was started on midazolam infusion at 5 mg / hour. Patient was afebrile, on mechanical ventilator (pressure support). Patient was stuporous, had eye opening to pain with normal pulse, blood pressure and oxygen saturation. She was having recurrent right focal seizures. She was referred to department of neurology, super speciality block, for further management. Availability of ICU bed and ventilator was ensured. No surgical intervention was done. We found MgSO4 not useful in this patient.

When patient was shifted from the present hospital to the government medical college the patient was stuporous but responding to pain stimulus. She was having right focal seizures which were recurrent, less than one-minute duration. After she got admitted to the medical college, Trivandrum in medical ICU ward she developed more frequent seizure episodes which was more than one minute in duration after which she was given injection levipil (levetiracetam). Then due to uncontrollable seizures which was frequent in episodes she was put on midazolam infusion. Her counts were on higher side and hence, she was started on antibiotics cefoperazone and sulbactum combination. She developed recurrent fever spikes with worsening lab values which was more on to multiple organ dysfunction syndrome (MODS) due to sepsis. On January 6th, 2020 she surrendered to death due to septicaemia. To best of our knowledge, the case was unusual and first of its kind in India.

DIFFERENTIAL DIAGNOSIS

Autoimmune encephalitis was ruled out by antibody testing neuro-infection (meningitis). On examination of CSF fluid there was no presence of cells of inflammation and hence, this cause was ruled out. No structural deformities were found on MRI scan.

CLINICAL DIAGNOSIS

Status epilepticus triggered by pregnancy

PATHOLOGICAL DISCUSSION

Well controlled epilepsy may improve or even deteriorate during pregnancy.[8] During pregnancy chances of seizures are increased (pre-existing seizures aggravates) and hence, anti-epileptics should not be decreased or withheld. The refractory status or status refractory seizures can result if already existing seizures are not being controlled or treated. If a patient is having previous history of seizure or if undergoing treatment for seizures, they must be counselled by the doctors regarding the complication during pregnancy. The finding of our study was in correlation to a study done by Nashef et al.[9] where out of 14 deaths in women with epilepsy, sudden and unexpected (SUDEP) accounted for 11 (79 %) and out of remaining three, 1 was due to chest trauma with secondary sepsis following a seizure. Maximum vigilance is required for such patients, and therapy needs to be titrated according to patient's response, keeping in mind its impact on the foetus.

FINAL DIAGNOSIS

Super-refractory status epilepticus worsened with aspiration pneumonia and finally lead to death.

Financial or other competing interests: None.
Disclosure forms provided by the authors are available with the full text of this article at jebmh.com.
We acknowledge the technical support in data entry, analysis and manuscript editing by "Evidencian Research Associates".

REFERENCES

[1] Faught E. Epilepsy case studies. Neurol Clin 2006;24(2):291-307.
[2] Bollig KJ, Jackson DL. Seizures in pregnancy. Obstet Gynecol Clin North Am 2018;45(2):349-367.
[3] Meador KJ, Pennell PB, May RC, et al. Changes in antiepileptic drug-prescribing patterns in pregnant women with epilepsy. Epilepsy Behav 2018;84:10-14.
[4] Thomas SV, Syam U, Devi JS. Predictors of seizures during pregnancy in women with epilepsy. Epilepsia 2012;53(5):e85-e88.
[5] Beach RL, Kaplan PW. Seizures in pregnancy: diagnosis and management. Int Rev Neurobiol 2008;83:259-271.
[6] Hart LA, Sibai BM. Seizures in pregnancy: epilepsy, eclampsia and stroke. Semin Perinatol 2013;37(4):207-224.
[7] Sveberg L, Svalheim S, Taubøll E. The impact of seizures on pregnancy and delivery. Seizure 2015;28:35-38.
[8] Calderwood C, Nelson-Piercy C. Medical disorders complicating pregnancy. Anaesthesia & Intensive Care Medicine 2004;5(8):256-263.
[9] Nashef L, So EL, Ryvlin P, et al. Unifying the definitions of sudden unexpected death in epilepsy. Epilepsia 2012;53(2):227-233.