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CASE REPORT OPEN ACCESS

Case Report on the Management of Posterior Reversible Encephalopathy Syndrome (PRES) Postpartum

Benita Grace Babu*

Department of Pharmacy Practice, Bapuji Pharmacy College, Davangere, Karnataka, INDIA.

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***Correspondence to:**

Benita Grace Babu, Pharm D Intern,
Bapuji Pharmacy College, Davangere-577004, Karnataka, INDIA.

Email.id: benitagrace1998@gmail.com

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Abstract

Posterior Reversible Encephalopathy Syndrome (PRES) is an underdiagnosed neurological disorder characterized by neurological symptoms which can develop acutely or sub acutely. It is usually more common among middle aged females. As specified by its name, it is a reversible condition, however timely detection and appropriate management is necessary in order to prevent complications like neurologic deficits and cerebellar herniation. Here is a case report of a 20 year old patient who presents with PRES syndrome in the early postpartum period.

Keywords: Posterior reversible encephalopathy syndrome, PRES, Management, Neurology, Postpartum, Rare disease.

INTRODUCTION

Posterior reversible encephalopathy syndrome (PRES) is a neurological disorder characterized by varied neurological symptoms, like, headache, impaired visual acuity or visual field deficits, disorder of consciousness, seizures and focal neurological deficits.[1] Common causes include blood pressure fluctuations, preeclampsia, renal failure, cytotoxic agents and autoimmune conditions.[2] PRES can occur in any age group and has a higher occurrence rate in middle aged female patients.[3] Although most cases resolve successfully and carry a favorable prognosis, patients with inadequate therapeutic support or delay in treatment may lead to serious complications like, transforaminal cerebellar herniation and focal neurologic deficits.[4-5] PRES results in cerebral vasogenic edema which appears to be its central pathogenic mechanism.[6] MRI is considered to be the gold standard for the diagnosis and evaluation of PRES.[7] Antiepileptic drugs are used to manage seizures associated with PRES. Anaesthesia and ventilation should be considered in case of status epilepticus and to protect airways in patients with altered sensorium. Corticosteroids must supposedly correct vasogenic edema, however there is no proof for their usage in PRES.[8]

CASE REPORT

A pregnant female patient, aged 20, (primigravida with term gestation and cephalic presentation), delivered a baby girl weighing 2.9 kg by emergency caesarean section at 2:30 pm. She had a history of oligohydroaminos. Patient was apparently normal till 5:30 pm after which she developed dull aching frontal headache. She had two episodes of vomiting and one episode of involuntary movement of upper limbs, lasting for five minutes associated with uprolling of eyes with tongue bite ie. one episode of GTCS (generalised tonic clonic seizure) at 7:05pm. Patient regained consciousness after five minutes and was able to recognise attendees. She was immediately shifted to the ICU for further examination as well as management. On examination, patient had blood pressure of 88/60 mm Hg, pulse rate 68bpm, respiratory rate of 20 cpm, Sp02 99% and was afebrile. She was not a known case of diabetes mellitus, hypertension, epilepsy, thyroid and asthma. The blood tests revealed sodium level of 138.5, potassium level 4.4 and chloride level 102.9. Hb 11.2, total count of 8700, platelet 2.12, RBS 72, serum creatinine 0.7, and blood urea nitrogen 26. In the ICU, she was administered with Inj. levetiracetam 1g in 100 ml NS and Inj. magnesium sulphate 4 g (slow IV, over 20 min).

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MRI scan findings of bilateral cerebral hemisphere showed near symmetrical multifocal T2, FLAIR hyperintensities noted involving bilateral cerebral cortex and bilateral cerebellar hemispheres- signs of vasogenic edema were seen. Bilateral caudate nucleus appears mildly bulky and shows FLAIR hyperintensity. No diffuse restriction and intraparenchymal haemorrhage were seen. Features of the MRI were suggestive of posterior reversible encephalopathy syndrome (PRES).

On the same day, the patient was prescribed with inj. normal saline 75ml/hr, inj. vegacef-s (ceftriazone+sulbactam) 500 mg BID, inj orni (ornithine) 100 ml OD, inj. paracetamol 100 ml OD, inj. ondansetron 4 mg TID. On day 2, inj. levetiracetam 500 mg BID, inj. pantoprazole 40 mg OD inj. mannitol 100ml TID and glycerol syrup 30 ml TID was added. Additionally, prophylactic antibiotics (ornithine, ceftriazone), a proton pump inhibitor (pantoprazole) and an analgesic (paracetamol) were administered. After 2 days of treatment in ICU, patient's condition improved. The patient was shifted to emergency on the 3rd day and the same treatment was continued. On examination, BP was 100/60 mm Hg, pulse rate 80 bpm and SpO2 100%. Patient was conscious and oriented. The baby was active and feeding well. The patient was discharged on the fourth day.

DISCUSSION

The treatment of PRES is symptomatic and is determined by the underlying condition.[1] The most common antiepileptic drugs that have been prescribed for PRES syndrome include benzodiazepines, levetiracetam and phenytoin. On discharge, levetiracetam and phenytoin are given with majority of the patients on a single agent.[2] PRES can develop acutely or sub acutely, with symptoms emerging within hours to days. Frequently, this syndrome presents in the setting of acute uncontrolled hypertension, with systolic blood pressures ranging between 160 to 190 mmHg,[5] however in the present case, our patient was found to be hypotensive. Clinically, PRES presents with headache, seizures, encephalopathy, visual disturbances and focal neurological symptoms.[6] Similarly, our patient had developed dull aching frontal headache followed by two episodes of vomiting and one one episode of GTCS. Certain patients with severe manifestations of PRES, like coma and/or status epilepticus, may require admission to the intensive care unit (ICU). Moreover, permanent neurological damage or death occurs only in a few patients.[6] Magnesium is one of the most abundant trace elements in the body and has been known to stabilize blood pressure, reduce inflammation and decrease blood brain barrier permeability. Also, magnesium sulphate is a conventional treatment for preeclampsia and eclampsia.[7] Typically, the prognosis of PRES is favorable, though, devoid of appropriate management, status epilepticus, cerebral ischemia, haemorrhage, intracranial hypertension or even death can occur infrequently.[7] In our patient also, magnesium sulphate has been given as an antiedema agent. Mannitol may be used for decreasing intracranial hypertension and drainage decompression.[9]

CONCLUSION

PRES must be contemplated in patients that present with seizures, altered consciousness, visual disturbance, or headache. Though this syndrome occurs generally in the context of hypertension, in this case it has occurred in a hypotension as well. Awareness of PRES among healthcare workers will help in prevention of adverse outcomes, ensure timely treatment, improve patient care and improve their quality of life. If recognised and treated early, PRES will fully resolve (both the symptoms and radiologic features) within few days to weeks.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

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