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POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME

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PRES is a Clinico-radiological entity which presents with various neurological signs and symptoms like ABSTRACT

headache, seizures, loss of consciousness and visual disturbances which may result in intracranial hypertension, cerebral edema and ischemia. PRES is commonly seen in young and middle aged adults females. In this case series 3 patients presenting with different case scenarios are described. Patients with PRES mostly presents with neurological symptoms associated with or without high blood pressure. Patients most commonly present with focal/generalised tonic clinic seizures, severe headache, blurring of vision, temporary blindness, loss of conciousnes ,vomitings, hallucinations or sometimes even coma. Two theories explains pathophysiology of PRES, Vasogenic and cytotoxic theory. MRI is more sensitive and acts as a confirmatory test for diagnosis of PRES .MRI shows high intensity lesions and edema in T2-weighted or FLAIR sequences most commonly involving parietal occipital regions. Symptomatic treatment of PRES remains as gold standard . The management of hypertensive episodes by reduction of blood pressure levels by 25% from baseline value helps in better prognosis.Magnesium sulphate plays a key role in Neuro protection and reduces the risk of status epilepticus. Whenever antenatal or postnatal female present with acute onset headache, blurring of vision, altered sensorium with or without elevated blood pressure, epilepsy due to trigerring factors PRES should always be considered as one of the differential diagnosis. Timely diagnosis and early treatment paves path towards good prognosis.

KEYWORDS:

INTRODUCTION -

PRES is a Clinico-radiological entity which presents with various neurological signs and symptoms like headache, seizures, loss of consciousness and visual disturbances [1] which may result in intracranial hypertension ,cerebral edema and schemia [2] .Hinchey et al in 1996 first described PRES .[3]. PRES is commonly seen in young and middle aged adults females [4]

Case 1-

22 yrs Primi 37 weeks 5 days , came with complaint of pedal edema for one week .On Examination BP 150/90 mmHg , T. Labetelol 100 mg stat given , proteinuria 2+ ,urine spot PCR was 0.3 . Patient underwent emergency LSCS in view of fetal distress. Post op vitals monitoring was done and patient started on antihypertensives. On POD-6 patient had tonic clonic seizures ,inj. Midazolam 10mg iv given. BP was 150/110 ,Inj. Labetelol 20mg iv stat, Inj. MgSO4 loading and maintainance dose given following zuspan regimen. MRI with MRV brain done . Parietooccipital parenchyma and left cerebellum showed high intensities and no evidence of hemorrhage . Inj levipil 500 mg iv BD given, Ocular examination showed no papilledema. Patient was discharged on POD11 with T. Levipil 500 mg TDS, gradually tapered.

Case 2-

29 yrs ,Primi , 38weeks4 days with no comorbidities was admitted in early labour underwent emergency LSCS in view of CPD in labour. Postop vitals were noted to be within normal limits. On POD5 she had 2 episodes of vomitings and headache, 2 hours later she had tonic clonic seizures, inj. Midazolam 2mg iv stat given and BP was 130/80 mmhg, Inj MgSo4 iv loading dose and maintenance dose given. MRI with MRV done showed ill-defined areas of altered signal intensity in parieto-occipetal region suggestive of PRES. All the routine investigations are within normal limits.Patient was Started on INJ. Levipil 500mg iv BD .Fundoscopy showed no papilledema. patient improved and was discharged on POD-13.

A 27 year antenatal, G2P1L1, Prev LSCS, 38 weeks and 5 days admitted for planned repeat LSCS. Postop Patient looked anemic and hemoglobin was noted to be 7.9 g/dl, 1 unit PRBC was given on POD 3. Post transfusion vitals were stable. Patient had 4 episodes of vomiting and severe headache 6 hours after blood transfusion. Vitals were within normal limits. Tablet paracetamol 500 mg and inj. Emeset 8 mg iv stat given. Patient had tonic clonic seizures 2 hours after her complaints ,BP noted to be 150/100 mm Hg. Inj MgSo4 loading dose given following zuspan regimen , inj. Midazolam 2 mg iv and Tab Labetelol 100 mg oral stat was given followed by inj.MgSO4 maintainance dose . All blood Investigations found to be within normal limits.MRI with MRV showed high intensities in bilateral parietooccipital region and cerebellum suggestive of PRES. Tab. Dexamethasone 4 mg BD, Inj. Levipil 500 mg BD given. Fundoscopy done showed no papilledema. Patient improved and discharged on POD-10.



A) sagital T2 weighted images showing subcortical edema involving posterior, frontal, parietal, occipital lobe B) AXIAL FLAIR imaging demonstrating subcortical edema C) Difussion weighed sequence showing bilateral asymmetrical cortical images.

DISCUSSION-

Patients with PRES mostly presents with neurological symptoms associated with or without high blood pressure [1] [5]. Patients most commonly present with focal/generalised tonic clinic seizures, severe headache, blurring of vision,

Case 3-

11.

temporary blindness, loss of conciousnes, vomitings, hallucinations or sometimes even coma[2,4,6,7].

Two theories explains pathophysiology of PRES.Vasogenic and cytotoxic theory. In pregnancy as arterial walls are not hypertrophic due to progesterone effect acute onset Severe hypertension causes increased receptiveness to blood brain barrier which damages posterior brain circulation [10,11,12]. Visual disturbances are foremostly due to damage of posterior circulation. The cytotoxic theory explains PRES in nonhypertensive patients. Any stress causing factors like chemotherapy, acute or chronic kidney injury, blood transfusions, organ transplantations can lead to cerebral vasoconstriction which may result in brain ischemia and edema [13,14,15].

Diagnosis -

PRES can be suspected When antenatal or postnatal patient presents with any of the neurological symptoms of acute onset along with or without severe hypertension and trigerring factors. MRI is more sensitive and acts as a confirmatory test for diagnosis of PRES .[MRI shows high intensity lesions and edema in T2-weighted or FLAIR sequences most commonly involving parietal occipital regions[2,14,16,17]]. Electroencephalogram can be used for evaluation of encephalopathy in patients with PRES[9].

Treatment -

Most of the times, symptomatic treatment of PRES remains as gold standard [1,14,19]. The management of hypertensive episodes by reduction of blood pressure levels by 25% from baseline value helps in better prognosis [20,21,22]. Magnesium sulphate plays a key role in Neuro protection and reduces the risk of status epilepticus [4]. Dexamethasone improves the microcirculation and stabilises Blood Brain Barrier (BBB) .Mannitol decreases brain edema by lowering the water and blood volume by vasoconstriction [18].

CONCLUSION

Whenever antenatal or postnatal female present with acute onset headache, blurring of vision, altered sensorium with or without elevated blood pressure,epilepsy due to trigerring factors PRES should always be considered as one of the differential diagnosis. Timely diagnosis and early treatment paves path towards good prognosis.

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