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Ocular manifestations of pregnancy induced hypertension

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Abstract

Background: Pregnancy Induced Hypertension (PIH) is a challenging stigma in the field of obstetrics and one of the major contributors to maternal and perinatal mortality. Hence; the present study was undertaken for assessing ocular manifestations in patients with pregnancy induced hypertension.

Materials & Methods: A total of 100 patients with pregnancy induced hypertension were enrolled. Patients with the chronic hypertension, preexisting renal diseases, diabetes mellitus, hematological disorders, infectious diseases and any prior ocular diseases were excluded. Anterior segment examination was carried out with torch light. Pupils were dilated with tropicamide and fundus examination was carried out with indirect ophthalmoscope. All the results were recorded and analysed by SPSS software.

Results: Defective vision was seen in 19 percent of the patients. Macular oedema was seen in 11 percent of the patients. Lid oedema and choroidal infarcts were seen in 2 percent and 3 percent of the patients respectively. Arteriolar narrowing was seen in 14 percent of the patients.

Conclusion: Ocular symptoms were seen in 32% of preeclampsia. Frequent and prompt screening of retina in PIH patients is indicated.

Keywords: pregnancy induced hypertension, ocular

Introduction

Pregnancy Induced Hypertension (PIH) is a challenging stigma in the field of obstetrics and one of the major contributors to maternal and perinatal mortality. PIH is classified into Mild PIH, Pre-eclampsia, and Eclampsia.¹⁻³ Mild PIH is defined as blood pressure of 140/90 mmHg which returns to normal by 12 weeks postpartum. Pre-eclampsia is the presence of hypertension (BP>140/90mmHg) on two occasions with spacing of four hours and significant proteinuria (>300 mg per 24 hrs) and/or edema. Eclampsia is the occurrence of convulsions or coma unrelated to other cerebral conditions, with signs and symptoms of pre-eclampsia. Ocular involvement occurs in a majority of patients of PIH. Ocular examination of PIH patients not only helps in diagnosis of eye problems but repeated observations assist in assessing the severity and progression of disease, response to treatment and ultimate outcome or prognosis^[1-3]. Ocular symptoms concern up to 50% patients with eclampsia and 25% with severe preeclampsia. The common symptoms include blurred vision, photopsia, field defects, scotoma and diplopia. Arteriolar narrowing develops in about 40-100% preeclampsia patients. Even though retinopathy is the most common manifestation, choroidopathy and optic neuropathy can develop in preeclampsia eclampsia spectrum^[4-6]. Hence; the present study was undertaken for assessing ocular manifestations in patients with pregnancy induced hypertension.

Materials & Methods

The present study was undertaken for assessing ocular manifestations in patients with pregnancy induced hypertension. A total of 100 patients with pregnancy induced hypertension were enrolled. Patients with the chronic hypertension, preexisting renal diseases, diabetes mellitus, hematological disorders, infectious diseases and any prior ocular diseases were excluded. Anterior segment examination was carried out with torch light. Pupils were dilated with tropicamide and fundus examination was carried out with indirect ophthalmoscope. All the results were recorded and analysed by SPSS software.

Results

In the present study, a total of 100 patients were analysed. Defective vision was seen in 19 percent of the patients. Macular oedema was seen in 11 percent of the patients. Lid oedema and choroidal infarcts were seen in 2 percent and 3 percent of the patients respectively. Arteriolar narrowing was seen in 14 percent of the patients. Overall, ocular manifestations were seen in 32 percent of the patients.

Table 1: Ocular manifestations in patients with PIH

Ocular manifestations	Number of patients	Percentage
Defective vision	19	19
Macular oedema	11	11
Lid oedema	2	2
Choroidal infarcts	3	3
Arteriolar narrowing	14	14

Discussion

Pregnancy induced hypertension (PIH) is a hypertensive disorder in pregnancy that occurs in the absence of other causes of elevated blood pressure (140/90mmHg, or a rise of 30mmHg of systolic pressure, or a rise of 15mmHg of diastolic pressure), taken on two occasions after rest, in combination with generalized edema and/or proteinuria. When there is significant proteinuria it is termed as preeclampsia; seizures or coma as a consequence of PIH is termed as eclampsia. The pathological changes of this disease appear to be related to vascular endothelial dysfunction and its consequences (generalized vasospasm and capillary leak). The retinal vascular changes generally, but not always, correlate with the severity of systemic hypertension. Vasospastic manifestations are reversible and the retinal vessels rapidly return to normal after delivery.⁶⁻¹⁰ Hence; the present study was undertaken for assessing ocular manifestations in patients with pregnancy induced hypertension.

In the present study, a total of 100 patients were analysed. Defective vision was seen in 19 percent of the patients. Macular oedema was seen in 11 percent of the patients. Lid oedema and choroidal infarcts were seen in 2 percent and 3 percent of the patients respectively. Indu B studied the ocular manifestations in severe preeclampsia and eclampsia. 150 patients, admitted with severe preeclampsia and eclampsia were studied. Patients were examined and the details including the highest recorded BP and lab parameters were collected. Anterior segment examination and dilated fundus examination were done. Ocular symptoms were seen in 22% of severe preeclampsia. Blurred vision was the most common ocular complaint. Fundus changes were seen in 45.4% total study subjects. 40% had arteriolar narrowing, which was the most common fundus finding. Systolic and diastolic blood pressure was higher in those with fundus changes than in those without fundus involvement. SBP and DBP were higher in those with fundus changes compared to those without fundus changes. Increase in BP are indications for frequent and prompt screening of retina to detect early changes, which may reflect similar changes in other organs including placental circulation^[10].

In the present study, arteriolar narrowing was seen in 14 percent of the patients. Overall, ocular manifestations were seen in 32 percent of the patients. Bakhda RN *et al.* in another study assessed the role of ophthalmoscopy in pregnancy induced hypertension (PIH) in diagnosis, prognosis, differential diagnosis, line of treatment and effect

of treatment. Detail obstetric history, general examination and relevant pathological investigations were carried out. In every case, pupil was dilated with homatropine (2%) eye drops and detailed ophthalmic examination was carried out. In their study out of 300 cases of PIH, there are 182 cases of mild preeclampsia and 76 cases of severe preeclampsia and 42 cases of eclampsia. Among these, 37 cases (20.33%) of mild preeclampsia and 75 cases (98.68%) of severe preeclampsia and 41 cases (97.62%) of eclampsia show positive fundus changes. The incidence of pre-term babies, intra uterine death, still birth and low birth weight infants is high in mothers having positive fundus changes, i.e. for pre-term infant (72.46%), still birth (62%) and low birth weight (45.56%) in our series. The perinatal mortality is higher in patients having Grade II (33.85%), Grade III (54.29%), Grade IV (100%) hypertensive retinopathy. Retinal examination reveals important objective information in PIH, furthers their accurate diagnosis and refines their management^[11].

Conclusion

Ocular symptoms were seen in 32% of preeclampsia. Frequent and prompt screening of retina in PIH patients is indicated.

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