

A clinical study of ocular fundus changes in pregnancy induced hypertension

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Abstract

Background: The purpose of this study is to know the ocular fundal changes in pregnancy induced hypertension in Koims Madikeri. **Methods:** All the patients who were admitted to the OBG Department with a diagnosis of pregnancy induced hypertension were subjected to fundoscopy using both direct and indirect ophthalmoscope. **Results:** A total of 271 patients were examined 131 with severe preeclampsia 65 with mild eclampsia 57 with eclampsia and 18 with gestational hypertension were examined, of which 222 patients had normal ocular fundus and 49 patients had positive ocular findings, **Conclusion:** Fundoscopy is a very essential examination in patients with pregnancy induced hypertension as the management differs with the fundal changes. The fundal changes resolves with the termination of pregnancy. **Keywords:** Fundus findings, ophthalmoscopy pregnancy induced hypertension.

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INTRODUCTION

Pregnancy induced hypertension is one of the unique challenge as it may contribute to mortality and morbidity in both the mother and the fetus^{1,2,3}. Pregnancy induced hypertension is classified as gestational hypertension mild preeclampsia severe preeclampsia and eclampsia. It is defined as hypertension disorder in pregnancy that occurs after 20 weeks of pregnancy in the absence of other causes of elevated blood pressure measured at least twice 6 hours apart The visual symptoms may be the precursors of seizures.^{4,5,6} the fetal mortality may be due to similar ischaemia in placenta.⁷

MATERIALS AND METHODS

In our study we examined all pregnant women who were admitted in the department of obstetrics Kodagu Institute

of Medical Sciences Madikeri during an 18-month period between Jan 2020 to June 2021 the study was conducted on 271 persons diagnosed as pregnancy induced hypertension, all patients were evaluated by obstetrician with a detailed history general physical examination and systemic examination. The ophthalmologist sees the patient and asks for ocular symptoms the anterior segment and pupillary reactions, were seen in the bedside. The pupils were dilated with tropicamide 0.8% and phenylephrine 5% eyedrops the fundus was seen in detail with both direct ophthalmoscope and indirect ophthalmoscope.

Inclusion Criteria: All patients who were diagnosed as pregnancy induced hypertension admitted to the department of obstetrics were examined

Exclusion Criteria: Patients with other systemic disorders which have ocular fundal pathologies like diabetes renal hypertension. Patients with corneal opacities ocular trauma cataract were excluded

RESULTS

The age group of patients ranged from 15 to 34 with a mean age of 24.16. The cases studied were primigravida 175 cases (63.76%) second gravid 77 cases (28.2%) third gravid 14 cases (5.1%) fourth gravid 8 cases (2.8%). The most common week when diagnosed with pregnancy induced hypertension was 34-35 weeks. The retinopathy

was seen in 36 patients with severe eclampsia (73.4%) and 13 patients with eclampsia (26.6%). The patients with severe pre eclampsia was 48.3% (131) patients mild preeclampsia (65) patients 24.1% eclampsia 20.8% (57) patients gestational hypertension was 6.6% (18) patients.

Table 1: Distribution of Fundal findings in different types of PIH

Types of PIH	No	Positive Fundal
	Retinopathy	Findings
eclampsia	51 (22.9%)	13 (26.5%)
Mild preeclampsia	67 (30.1%)	-
severe preeclampsia	86 (38.7%)	36 (73.4)
gestational hypertension	18 (8.1%)	-
Total	222	49

Table 2: Distribution of cases in various Gravida

	Total Cases	No Retinopathy	Ocular findings seen
primigravida	175	136	39 (22.28%)
second gravida	77	68	9 (11.68 %)
third gravida	14	14	1 (7.14 %)
fourth gravida	8	8	

Table 3: Distribution of Cases of PIH

	No	%
eclampsia	131	48.3%
mild preeclampsia	65	24.1%
severe preeclampsia	57	20.8%
gestational hypertension	18	6.6%
Total	271	100%

Mean BP	No Retinopathy	Fundal changes
	153.2/102.1	163/108.2

Table 4: Age wise distribution of retinal changes

Age	PIH	Positive Fundus Findings
< 20	48 (17.7%)	13 (27.08%)
21 - 25	118 (43.54%)	36 (30.5%)
26-30	69 (25.46%)	-
>30	36 (13.28 %)	-

Table 5: Relation between BP and Retinopathy

B P	< 150/100	150/100 and above	Total
Retinopathy	11 (7.2%)	38 (31.9%)	49 (18.08%)
No retinopathy	141 (92.7%)	81 (68.06%)	222 (81.9)
Total	152	119	271

The incidence of positive fundal findings was 22.28 % in primigravida and 11.68% in second gravid and 7.14% in the third gravid. The young patients <25 are prone to have positive findings. The blood pressure was higher in patients who had positive fundal changes. AV crossing changes were present in 8 patients, 4 patients had hard exudates 2 patients had superficial nerve fibre layer haemorrhage one had cotton wool spot and one patient had

papilloedema, there was a correlation between the levels of hypertension and the severity of the disease and the fundal changes. The fundal changes resolves with the termination of pregnancy^{7,8,9} with the restoration of vision if any had occurred.

CONCLUSIONS

The retinal vascular change correlates with the severity of the hypertension, ocular fundus changes acts as a guide in terminating the pregnancy as it signifies ischaemic changes in the placental circulation.^{10 11} Ophthalmologists help in the diagnosis and the ocular findings indirectly paves the way for the obstetrician to take a decision in the further management^{13,14,15}

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