STUDY OF OCULAR CHANGES DURING PREGNANCY IN A TERTIARY BASED HOSPITAL

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AIMS AND OBJECTIVES: To study various ocular changes during pregnancy in a tertiary based hospital. MATERIALS AND METHODS: Prospective cross-sectional study conducted on 100 pregnant women with gestational period from 24 weeks to 38 weeks attending Government General Hospital, Kadapa. Detailed medical, ocular and gestational history was obtained along with the assessment of visual acuity, refraction, ocular motility, keratometry, anterior segment examination, intraocular pressure recording, corneal sensitivity and dilated fundus examination was done. RESULTS: In our study, physiological and pathological ocular changes significant during pregnancy was reported. Majority of them showed physiological changes. 30% showed significant retinal changes with high blood pressure. Recognition of various physical symptoms and signs are necessary in pregnancy. All pregnant women should undergo complete ocular examination. Early detection of ocular changes prevent visual morbidity during pregnancy.

RESULTS:

Aims and objectives of study: To study various ocular changes during pregnancy in a tertiary based hospital. Materials and methods: Prospective cross-sectional study conducted on 100 pregnant women with gestational period from 24 weeks to 38 weeks attending Government General Hospital, Kadapa. Detailed medical, ocular and gestational history was obtained along with the assessment of visual acuity, refraction, ocular motility, keratometry, anterior segment examination, intraocular pressure recording, corneal sensitivity and dilated fundus examination was done. Results: In our study, physiological and pathological ocular changes significant during pregnancy was reported. Majority of them showed physiological changes. 30% showed significant retinal changes with high blood pressure. Conclusion: Recognition of various physical symptoms and signs are necessary in pregnancy. All pregnant women should undergo complete ocular examination. Early detection of ocular changes prevent visual morbidity during pregnancy.

KEYWORDS
Pregnancy, Ocular Changes, Refractive Error, Intraocular Pressure.

INTRODUCTION
Pregnancy results in metabolic, hemodynamic, vascular and immunologic changes. The ophthalmic changes that occur during pregnancy may be physiological or pathological. Although ocular changes are common in pregnancy, many are mild, temporary, and require little to no treatment.

AIM & OBJECTIVES
The aim of the study is to report significant ocular changes during pregnancy.

MATERIALS AND METHODS
The prospective cross-sectional hospital based study carried out for 100 pregnant women in the Department of Ophthalmology and Department of Obstetrics and Gynaecology of Government General Hospital, Kadapa during the period of one year from March 2019 to March 2020.

INCLUSION CRITERIA
Study subjects include 100 pregnant women with gestational period from 24 weeks to 38 weeks. An oral informed consent was obtained from all women participating in the study.

EXCLUSION CRITERIA
1. Pregnant women in first trimester and in active labor.
2. Pregnant women with any pre-existing comorbidity such as diabetes and hypertension.
3. Pregnant women with any pre-existing ocular morbidity such as cataract, uveitis, glaucoma, retinal, and optic nerve disorders.

EVALUATION
Complete ophthalmic history and medical history were obtained from the pregnant women. The uncorrected and best corrected visual acuity was done using Snellen's chart. Intraocular pressure was recorded using noncontact tonometer. Anterior segment of both the eyes was examined under the slit lamp biomicroscope. Corneal sensitivity was done with the help of Schirmer's test and binocular eye movement was observed. Fundus evaluation of both the eyes was done through dilated pupils using direct ophthalmoscope, and keratometry was done using Bausch and Lomb Keratometer. The obtained data were expressed in the form of percentage.

RESULTS
These 100 pregnant women based on their analysis showed a varied result. Physiological ocular changes were seen in 62% of the patients. 30% showed clinically significant retinal changes with high blood pressure. 8% showed papilledema. Percentage of physiological and pathological ocular changes was represented.

DISCUSSION
The majority of alterations in the ocular system arise from metabolic, hormonal, and immunologic changes provoked by pregnancy. All the components of the visual system can undergo physiological changes by gestational fluctuations in sex hormones. This effect occurs mostly due to the interaction of estrogen and progesterone with their counterpart receptors in eye tissues. Variations in the function of ocular system exist according to different gestational trimesters. Various physiological changes in pregnancy are low IOP, chloasma, hypopigmentation, tear film composition alterations, decreased corneal sensitivity, increased thickness of lens leading to refractive changes, and pituitary gland enlargement. Pathological changes are the growth of hemangiomas, carotid-
cavernous fistula, ptosis, Horner's syndrome, facial nerve palsy, vasospasm in preeclampsia, worsening of diabetic retinopathy, vascular changes in preeclampsia, serous retinal detachment, central serous chorioretinopathy, growth of melanomas, ischemic optic neuropathy, papilledema, and cortical blindness in eclampsia.\(^{10}\)

In pathological ocular condition, increased immune reaction in lacrimal duct cell and dehydration due to nausea and vomiting is the cause of tear film alteration. Corneal changes that can increase thickness and reduce sensation are due to corneal edema.\(^{11}\) This leads to refractive error and contact lens intolerance. Hence, it is important to avoid new spectacles prescription and avoid any refractive surgery during pregnancy. Retinal changes which are significant are either diabetic retinopathy or hypertensive retinopathy. Diabetic retinopathy is of low-risk which disappears on blood sugar control. In preeclampsia the most common finding being retinal arterial narrowing, followed by retinal hemorrhages and exudates which also give rise to Exudative Retinal Detachment.\(^{12}\) Central Serous Chorioretinopathy can occur during third trimester with increased frequency. Cortical blindness occurs due to reduced vision due to bilateral damage to any portion of the visual pathway. Most common symptom of papilledema is transient visual obscuration. These visual changes often occur due to orthostatic changes in the patient. The patient may also complain of loss of peripheral vision in one or both the eyes starting in the nasal inferior quadrant which progresses to the central visual field. Visual acuity may also be affected.\(^{13}\) Increase in headache is caused by the surge of hormones in pregnancy along with an increased volume of blood circulating throughout the body.\(^{14}\)

**CONCLUSION**

Certain ocular changes, whether physiological or pathological, may be increased during pregnancy. Regular perinatal eye examination should be scheduled in order to assure continuous surveillance of healthy eyes. Thus, it is important to be educated on pathophysiological changes that are common in pregnancy in order to better counsel women who are pregnant or planning to become pregnant.\(^{15}\) All ocular symptoms in pregnancy requires comprehensive ophthalmological examination and management.\(^{16}\)

**REFERENCES**