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Original Research

Assessment of incidence of ocular changes in pregnancy

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***ABSTRACT*:**
Background: Retinal changes in diabetic and hypertensive women can worsen with pregnancy and may correlate with the severity of gestational diabetes mellitus. The present study was conducted to assess ocular changes during pregnancy. **Materials & Methods:** 92 pregnant women underwent eye examination. Occurrence of chloasma, dry eyes, intra- ocular pressure, ptosis, contact lens intolerance etc. was recorded. Hypertensive related retinopathy observations in either eye were recorded. **Results:** Age group 18-28 years had 34, 28-38 years had 46 and >38 years had 12 patients. The difference was significant (P< 0.05). Clinical findings were chloasma in 20, dry eyes in 15, contact lens intolerance in 5, ptosis in 10 and pregancy induced hypertension in 16 patients. The difference was significant (P< 0.05). Retinal changes showed grade 1 in 4, grade 2 in 8, grade 3 in 3 and grade 4 in 1 patient. The difference was significant (P< 0.05). **Conclusion:** Commonly occurring ocular change was cholasma and retinal changes in pregnancy induced hypertension.
Key words: Pregnancy, Chloasma, Retinal

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INTRODUCTION

Pregnancy is known to cause several physiological changes in the parturient. These physiological changes affect multiple organ systems including the visual system. The ophthalmic complications are divided into physiologic and pathologic changes.[1] Pathologic changes in pregnancy are further segregated into three categories including: first time ocular pathology during pregnancy, modification of an existing ocular pathology, and ocular complications of systemic disease. Although ocular complications are common in pregnancy, many are mild, temporary, and require little to no treatment.[2] However, it is important to recognize that serious ophthalmic pathology can occur which requires immediate medical intervention. Physiological changes during pregnancy involve changes to the interior of the eye and to the outer ocular surface. Among the pathological alterations, several are related to gestational hypertension, such as, central serous retinopathy and occlusive vascular diseases, in addition to the evolution of preexisting pathologies.[3]

Affected ocular structures during pregnancy include eyelid, conjunctiva, cornea, lens, retina, optic nerve/tract, and orbit. Retinal changes in diabetic and hypertensive women can worsen with pregnancy and may correlate with the severity of gestational diabetes mellitus (GDM) or eclampsia.[4] Additionally, hormonal changes in pregnancy may lead to increased corneal thickness and curvature which can lead to or worsen keratoconus, decreased intraocular pressure (IOP), and improve glaucoma slightly. Other ocular changes include chloasma, subconjunctival hemorrhage, increased thickness of lens and subsequent refractive errors, enlargement of the pituitary gland and optic nerve compression, and increased volume of intraorbital contents by growing hemangioma.[5] The present study was conducted to assess ocular changes during pregnancy.

MATERIALS & METHODS

The present study comprised of 92 pregnant women. All were informed regarding the study and their consent was obtained.

Demographic data such as name, age, etc. was recorded. A thorough eye examination was performed by eye surgeon. Occurrence of chloasma, dry eyes, intra- ocular pressure, ptosis, contact lens intolerance etc. was recorded. Dry eye was confirmed by tear film break up time (TBUT) and Schirmer's test. Both eye's pupils were dilated with 1% tropicamide eye drops and then fundus examination was carried out by directly by ophthalmoscope. Hypertensive related retinopathy observations in either eye were recorded. Blood pressure levels, gravida, para and proteinuria parameters were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Age group (Years)	Number	P value
18-28	34	0.01
28-38	46	
>38	12	

Table I shows that age group 18-28 years had 34, 28-38 years had 46 and >38 years had 12 patients. The difference was significant (P< 0.05).

Table II Assessment of clinical findings

Clinical findings	Number	P value
Chloasma	20	0.04
Dry eyes	15	
Contact lens intolerance	5	
Ptosis	10	
Pregnancy induced hypertension	16	

Table II, graph I shows that clinical findings were chloasma in 20, dry eyes in 15, contact lens intolerance in 5, ptosis in 10 and pregancy induced hypertension in 16 patients. The difference was significant (P< 0.05). Table III shows that retinal changes showed grade 1 in 4, grade 2 in 8, grade 3 in 3 and grade 4 in 1 patient. The difference was significant (P< 0.05).

DISCUSSION

Pregnancy also affects normal tear film and corneal physiology. Tear production decreases due to lacrimal dysfunction, resulting in dry eye syndrome. Also, corneal sensation is significantly decreased. The combination of poor tear film and diminished corneal sensation, make contact lens wear difficult and somewhat dangerous.[6] Any symptomatic contact lens wearer during pregnancy should discontinue contact use to prevent more serious complications. Other refractive changes in pregnancy may be due to transient loss of accommodation. A loss of accommodation has been reported with pregnancy and lactation during the postpartum. Pregnancy is also known to alter corneal thickness and curvature. Due to these physiological changes, it is better to delay refractive surgery during pregnancy.[7] Refractive corneal procedures such as LASIK are contraindicated and should be postponed until refractive changes stabilize in the postpartum. Also, dry eye and decreased corneal sensation could result in significant postoperative complications such as poor wound healing and corneal melt. It is even recommended to delay changing prescription glasses as new lenses are not likely to be suitable once physiological changes resolve in the postpartum. Intraocular pressure can also be affected. It can be significantly decreased during pregnancy.[8] The present study was conducted to assess ocular changes during pregnancy.

Graph I Assessment of clinical findings

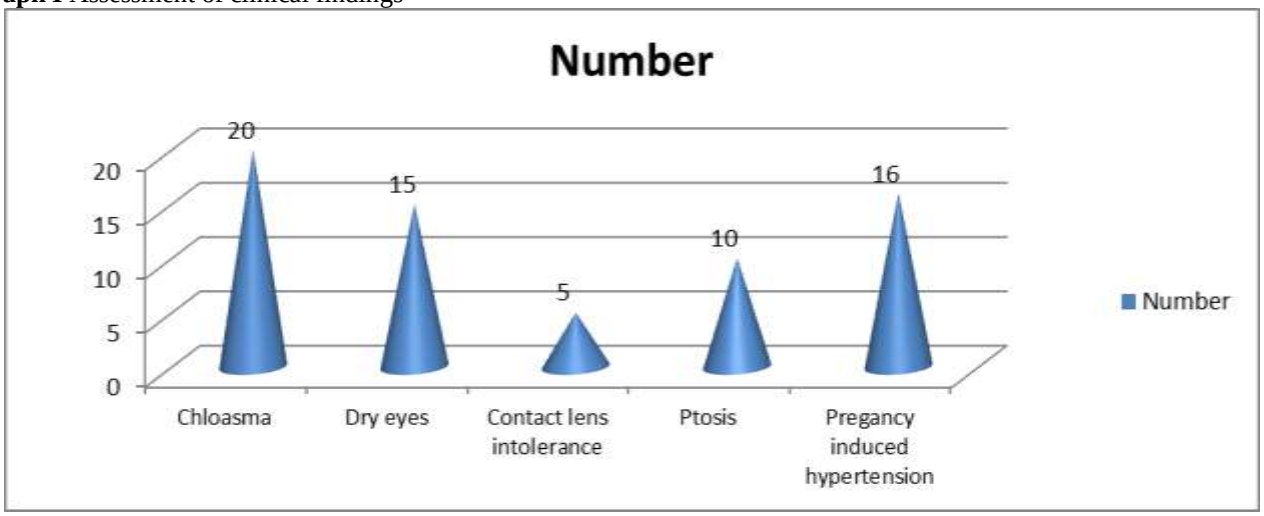

Table III: Assessment of retinal changes in pregnancy induced hypertension

Retinal changes	Number	P value
No change	0	0.02
Grade 1	4	
Grade 2	8	
Grade 3	3	
Grade 4	1	

We found that age group 18-28 years had 34, 28-38 years had 46 and >38 years had 12 patients. Nellore et [a9l] in their study blood pressure, gravida, gestational period, and proteinuria other details were recorded. Previous history related any eye symptoms were recorded. Patients after admission in to the ward, fundus examination carried out by dilating the pupil with direct ophthalmoscope. A total of 70 patients were examined. Mean age of the patient was 24.12 years (15-40). Changes in the retina were noted in 37 patients (53.29%). Grade I in 33 patients (47.14%) and Grade II in 4 patients (6.15%). There was no haemorrhages, no hard exudates, and no retinal detachments recorded in any of admitted subjects.

We found that clinical findings were chloasma in 20, dry eyes in 15, contact lens intolerance in 5, ptosis in 10 and pregancy induced hypertension in 16 patients. Chloasma or melasma, which is a hypermelanosis of sun-exposed areas, commonly occurs during pregnancy with a possibility of solo involvement of eyelids and often resolves postpartum. Eyelid retraction as a result of underlying sinus disease and ptosis due to the presence of blepharophimosis, ptosis, and epicanthus inversus syndrome have also been reported. However, the latter is a coincidence with pregnancy rather than a consequence of the gestational changes. Unilateral ptosis has been reported during pregnancy and after normal delivery due to fluid and hormonal effects on levator aponeurosis which resolves postpartum.[10]

We found that retinal changes showed grade 1 in 4, grade in 8, grade 3 in 3 and grade 4 in 1 patient. Pregnancy conditions a modification in the physiology of the tear film, due to hormonal changes and disruption of acinar cells, producing dry eye syndrome. The photopic and mesopic diameters of the pupil appear to increase during pregnancy (not increasing wavelength aberrations), mainly in the third trimester. It has been postulated that this is due to increased sympathetic activity. The cornea, which acts as a barrier, may show a decrease in sensitivity an increase in thickness (minimal, due to edema), and an increase in curvature during pregnancy causing temporary refractive changes.[11] All of these factors may contribute to contact lens intolerance (or the need to use more flat lenses). This is common in pregnant women, even if the lenses have been used for several years. This occurs mainly in the second and third trimesters, and pregnancy is considered a contraindication to ophthalmic surgery. These physiological changes tend to reverse, usually in the first two months, and it is advised to only consider lens upgrade or refractive surgery after this period.[12] A transient loss of accommodation may occur during pregnancy and lactation, and any potential surgery should be postponed until stable refraction is achieved (if the pregnancy is anticipated).

CONCLUSION

Authors found that most commonly occurring ocular change was cholasma and retinal changes in pregnancy induced hypertension.

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