www.jmscr.igmpublication.org
Impact Factor 5.84
Index Copernicus Value: 83.27
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v5i7.248

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

A Study of Clinical Profile of Premature Presbyopia in A Tertiary Care Hospital

Authors
Dr Manoj Venugopal, Dr Ann Tresa Antony
Department of Ophthalmology, Govt.T.D. Medical College, Alappuzha, Kerala, India
Corresponding Author
Dr Manoj Venugopal
Department of Ophthalmology, Govt.T.D. Medical College, Alappuzha, Kerala, India
Email: *venugopalmanoj19@gmail.com*

Abstract
Purpose: *To study the clinical profile of premature presbyopia in a tertiary care hospital.*
Materials & Methods: *Three sixty patients with defective near vision below the age of 40 years who attended ophthalmology outpatient department at a tertiary care hospital during a period of 6 months were included in the study. Enrolled subjects underwent unaided visual acuity testing for distant vision using snellen's chart and near vision chart. Refraction was performed by a trained refractionist and later on confirmed by a senior ophthalmologist. A detailed history of the patients was taken regarding their occupation, tobacco use, drug intake, glaucoma. hypertension and diabetes mellitus. Data was recorded and analyzed on SPSS*
Results: *The age range of patients included in the study was 30-40 years with a mean age of 37.5 years. Out of the 360 patients studied 32%(116) were males and 68%(244) were females. 60% patients included in the study were emmetropic for distance vision, 30 % were having hypermetropia and 10 % patients were myopic. 24 % patients in the present study were tobacco chewers and 40% were tobacco smokers. . In our study among the early presbyopes 15 (4.1%) patients had associated hypertension , 18 (5%) patients had diabetes, 12 (3%) patients had glaucoma, 8(2.2%)patients were on anti psychotic medications and 5 (1.3%) patients had anaemia.*
Conclusion: *Premature presbyopia is more commonly seen in females and preexisting hypermetropic refractive error is associated with early onset of hypermetropia. Systemic diseases (diabetes, hypertension), tobacco use, glaucoma and use of antipsychotic medications also cause early onset of presbyopia to some extent.*
Keywords: *Presbyopia, Hypermetropia, refractive error.*

INTRODUCTION

Presbyopia is the gradual loss of accommodative response resulting from loss of elasticity of the lens. As age advances the amplitude of accomodation decreases. The elastic force of the lens capsule diminishes which reduces the spontaneous steepening of lens surface when cilliary muscle contract. Lenitcular sclerosis also reduce the elasticity of lens capsule and hardening of lens substance leads to ineffective action of accommodation. The word "presbyopia" means "old eye" in Greek. The eye is capable of 14 D

(dioptres) accommodation in infancy which declines to 4 D by the age of 45 years and 1 D by the age of 60 years.[1] Symptoms of presbyopia usually begin after 40 years. This discomfort for near vision is experienced due to reduced amplitude of accommodation and the person is said to be presbyopic and is prescribed convex lenses to aid the near vision.

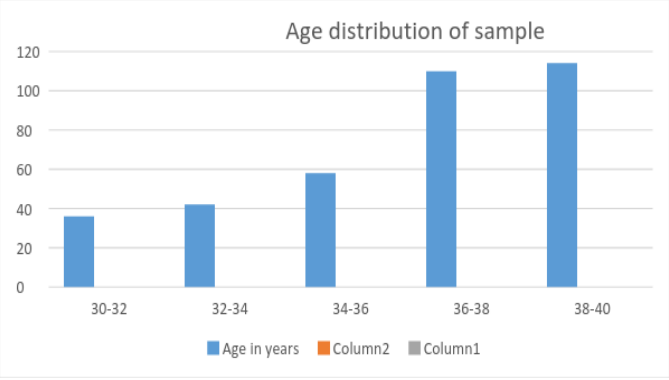
In premature presbyopia, accommodative ability becomes insufficient for the patient's usual near vision tasks at an earlier age than expected, due to environmental, nutritional, disease related, or drug induced causes[2].Although age is the major risk factor for development of presbyopia, but the condition may occur prematurely as the result of factors such as trauma, systemic disease, cardiovascular disease, or a drug side effect. Persons involved in occupations with near vision demands may also develop premature presbyopia. In hypermetropic patients where there is additional accommodative demand (if uncorrected) also leads to early presbyopia[3]. Ocular disease or trauma, removal or damage to lens, zonules, or ciliary muscle, laser photocoagulation of retina systemic disease like diabetes mellitus where changes in lens leads to change in refractive state of the eye, multiple sclerosis associated with impaired innervations, cardio vascular accidents leading to impaired accommodative innervations, vascular insuffic-iency, myasthenia may all lead to early onset of presbyopia.[5] Decreased accommodation is a side effect of both non prescription of appropriate spectacles and drugs such as chlorpromazine, hydrochlorothiazide, anti anxiety agents, anti depressants, antipsychotics, antispasmodics, anti histamines and diuretics.

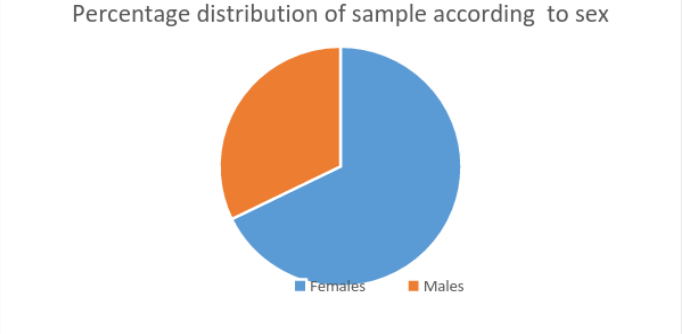
MATERIAL AND METHODS

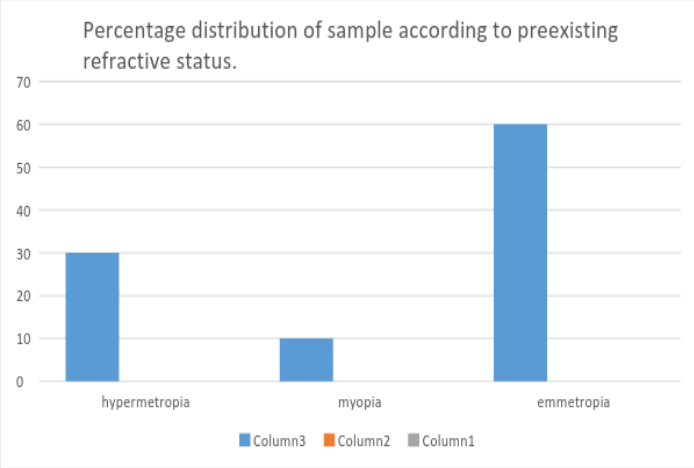
The study was conducted in Ophthalmology department at a tertiary care hospital during a period of 6 months. Three sixty patients with defective near vision below the age of 40 years who attended ophthalmology outpatient department were included in the study. It was a hospital based descriptive cross sectional study. Exclusion criteria was patients with ocular pathologies like corneal opacities cataract, uveitis, chorioretinitis and other retinal, macular pathologies. .

Informed consent was obtained. Enrolled subjects underwent unaided visual acuity testing for distant vision using snellen's chart and near vision chart. Inability to read N8 at 40 cm distance was taken as presbyopia. Any improvement with pin hole for distant vision was documented and refraction was performed by a trained refractionist and later on confirmed by a senior ophthalmologist. After that patients underwent complete anterior and posterior segment evaluation. A detailed history of the patients was taken regarding their occupation tobacco use, any refractive error, drug intake, glaucoma, hypertension and diabetes mellitus . Random blood sugar and haemoglobin were also done as and when required. Slit lamp examination, applanation tonometery, direct and indirect fundoscopy were done in all cases. Patients were refracted and appropriate glasses prescribed. Data was recorded and analyzed on SPSS.

RESULTS







Associated factors of premature presbyopia	Frequency %
Tobacco chewing	24(6.6%)
Tobacco smoking	40(11.1%)
Diabetes Mellitus	18(5%)
Glaucoma	12(3%)
Hypertension	15(4.1%)
Anti psychotic medications	8(2.2%)
Anaemia	5(1.3%)

DISCUSSION

The present study included 360 patients over a period of 6 months. The age range of patients included in the study was 30-40 years with a mean age of 37.5 years. Out of the 360 patients studied 32% (116) were males and 68% (244) were females. Our study showed a female preponderance which could be due to more stress the females bear in our society. There are similar studies in the literature which shows increased prevalence of premature presbyopia among females. Weale RA et al has also reported a female preponderance in his study.[6] We also analysed the factors associated with early onset presbyopia. In our study it was found that office workers were the highest affected group of occupation with premature presbyopia. Office workers of government and private sector formed highest number seeking early intervention for presbyopia as compared to other. Presbyopia affects the quality of life. Among office employees where reading and writing are main tasks this appears straight forward.

In our present study 60% were emmetropic for distance vision, 30 % were having hypermetropia and 10 % patients were myopic . Keziah N. Malu et al in their study found (51.65%) subjects to be Emmetropic, (32.57%) Hypermetropic and (15.76%) subjects myopic[7].This points out that hypermetropes have early onset of presbyopia as compared to myopes of same age group.

We have found out that 24 % patients in the present study were tobacco chewers and 40% were tobacco smokers. A Population Based Assessment of presbyopia was conducted in the State of Andhra Pradesh, South India known as 'The Andhra Pradesh Eye Disease Study'. According to this study 35.1% of subjects aged 35 years had presbyopia and they were tobacco users.[8] Stressful living conditions leading to increased tobacco use is involved in the early onset of presbyopia. In our study among the early presbyopes 15 (4.1%) patients had associated hypertension, 18 (5%) patients had diabetes, 12 (3%) patients had glaucoma, 8(2.2%)patients were on anti psychotic medications and 5(1.3%) patients had anaemia. The medical history is important in the diagnosis of premature presbyopia, particularly diabetes mellitus, anti psychotic drug intake, cardiovascular accidents, (impaired accommodative innervation) vascular insufficiency, myasthenia gravis, anemia, influenza, measles.[9,]

Anaemia and poor nutritional status are also associated with early onset of presbyopia. Gary L et al has also reported an association between poor nutrition and early onset of presbyopia.[10]

With this study we conclude that females have early onset of presbyopia. Hypermetropia is associated with premature presbyopia. Although other factors like systemic diseases, nutritional deficiencies and stressful living conditions also cause early onset of presbyopia to some extent. Awareness needs to be done in the communities about presbyopia showing that it can easily be corrected with spetacles. Health workers need heightened awareness to detect and treat those patients in their mid thirties who are not symptomatic.

REFERENCES

1. Helena J Frank, Michael J Greaney Presbyopia in Clinical OpticsAndrew R. Elkington, 3rd 141.
2. Patorgis CJ. Presbyopia. In: Amos JF, ed. Diagnosis and management in vision care. Boston: Butterworths, 1987: 203-38.
3. Pointer JS**.** The presbyopic add. III. Influence of the distance refractive type. Ophthalmic Physiol Opt. 1995; 15:249-53.
4. Kleinstein RN**.** Epidemiology of presbyopia. In: Stark L, Obrecht G, eds. Presbyopia: recent research and reviews from the third international symposium. New York: Professional Press Books, 1987: 12-8.
5. Jain IS, Ram J, BuptaA**.** Early onset of presbyopia. Am J Optom Physiol Opt. 1982; 59: 1002-4.
6. WealeRA. Epidemiology of refractive errors and presbyopia. Surv Ophthalmol. 2003; 48: 515-43.
7. Keziah N. Malu: Presbyopia in plateau state, Nigeria: A hospital study: Journal of Medicine in the Tropics Vol. 15 Issue 2 Jul-Dec 2013.
8. Susan AS. Lawrence MS. Progress in retinal and eye research. Elsvier. 2005; 24: 379-9
9. Sardi B**.** Nutrition and the eyes, Vol. 1. Montclair, CA: Health Spectrum, 1994: 59-65.
10. Gary L**.** Care of the patient with presbyopia. Optometric clinical practice guidelines. 2006; 1:3-5.