ORIGINAL ARTICLE

A CLINICAL STUDY OF MYOPIA AMONG PATIENTS ATTENDING KATURI MEDICAL COLLEGE HOSPITAL AND SANJEEVANI HOSPITAL, GUNTUR

D. V. C. Nagasree[1], G. Vijayalakshmi[2]

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ABSTRACT: We have studied retrospectively a total of 650 cases of myopia among 3500 refractions done in Katuri medical college, Guntur and Sanjeevani hospital, Guntur, Andhra Pradesh. 10.1% of the patients of the patients attending Ophthalmic department of Katuri medical college and Sanjeevani hospital Guntur have refractory errors. Males are more affected than females. There is family incidence of myopia in 15%. About 86% of cases come with difficulty in seeing distant objects, and 12% with head ache. Highest diaptoric power of myopia recorded is -22D. Only a single case of retinal detachment was noted in our study.

KEYWORDS: MYOPIA, PATHOLOGICAL MYOPIA, KERATOCONUS, degenerative myopia, astigmatism, radial, Diapter.

INTRODUCTION: The incidence of MYOPIA has increased recently in developing countries.[1]Children are exposed to various electronic gadgets like cell phone, I pad, videogames, e.t.c. now a days and there is no house without television so that from very young age they are viewing television. Adolescents are becoming computer addicts. Though heredity seems to play a significant role in the development of myopia in childhood, some research suggests that eye strain, and specifically computer eye strain, also may be involved.[2]

To see clearly up close, the eye has to exert focusing effort. Some researchers feel that fatigue caused by excessive focusing can lead to changes within the eye that cause myopia. And experts agree that focusing on images on a computer screen causes greater eye fatigue than reading normal print in a book or magazine young adults are job wise exposed to computers.[2,3]

Middle age people are being affected by diabetes mellitus and other diseases due to lifestyle changes and environmental factors. The prevalence of myopia and high myopia was found to be 19.9 and 1.9% respectively among subjects with type II diabetes. Myopia was not associated with diabetic retinopathy, thereby, suggesting the need for a longitudinal study.[4]

Allergic conditions are on the increase. Specific IgE levels for indoor allergens, such as house dust, might be associated with refractive errors.[5]

Degenerative myopia (also called malignant or pathological myopia) is a relatively rare condition that is believed to be hereditary and usually begins in early childhood. About 2 percent of Americans are afflicted, and degenerative myopia is a leading cause of legal blindness. In malignant myopia, the elongation of the eyeball can occur rapidly, leading to a quick and severe progression of myopia and loss of vision. People with the condition have a significantly increased risk of retinal detachment and other degenerative changes in the back of the eye, including bleeding in the eye from abnormal blood vessel growth (neovascularization). Degenerative

myopia also may increase the risk of cataracts. Surgical treatment for complications of degenerative myopia includes a combination drug and laser procedure called photodynamic therapy that also is used for the treatment of macular degeneration. Also, a recent pilot study found that an oral medicine called 7-methylxanthine (7-mx) was effective in slowing the elongation of the eye in nearsighted children ages 8 to 13.[2]

Above middle age and old people are developing lenticular sclerosis and cataract leading to lenticular myopia. Hereditary factors also play role in causing myopia. Basing on all these causative factors we have conducted a clinical study of myopia in about 500 cases attending Katuri Medical College, Chinakondrupadu, Guntur.

MATERIALS AND METHODS OF STUDY:

Six hundred and fifty cases of myopia are recorded and analysed.

The study of myopia and its various types is undertaken on the patients attending the outpatient department of Ophtalmology of Katuri medical college, Chinakondrupadu, Guntur 2012 to 2014.

A detailed case history is recorded with family incidence and consanguinity.

A systematic local examination is conducted. Refraction and post mydriatic tests are done and glasses are prescribed suitably.

Necessary investigations are done.

Six hundred and fifty cases of myopia are recorded and statistics are submitted with reference to sex and age incidence, family incidence, improvement of vision and fundus changes.

OBSERVATIONS:

Total Outpatients	Total Refractions done	Percentage
35054	3500	10.1%

Table 1: Percentage of refractive Errors

No. of cases having Refractive error	Total no. of myopic cases	Percentage
3,500	650	18.5%

Table 2: Percentage Myopia in Refracted cases

No. of cases of Myopia	No. of Degenerative myopia	Percentage
650	86	13.2

Table 3: Incidence of Degenerative Myopia

Females	Males	Total
236	414	650

Table 4: Sex Incidence

Family incidence:

	No. of cases	Percentage
History of myopia in the family	97	15%
No History of myopia in the family	553	85%

Table 5: In my study of 650 cases 15% of patients gave family history of myopia

The analysis shows that hereditary factors play an important role in the aetiology of myopia.

Sl. No.	Age group	Males	Females	Total	Percentage
1.	1-5 years	nil	nil	nil	Nil
2.	6-10 years	13	26	39	6%
3.	11-15 years	78	45	123	19%
4.	16-20 years	104	59	163	25%
5.	21-25 years	39	45	84	13%
6.	26-30 years	39	26	65	10%
7.	31-35 years	26	20	46	7%
8.	36-40 yrars	33	39	72	11%
9.	41-50 years	26	13	39	6%
10.	51-60 years	6	13	19	3%
				Total	
				650	100%

Table 6: Age Incidence

From this data it is found that myopia is common between 11-20 years.

	No. of cases	Percentage
1. Head ache	78	12%
2. Defective distant vision	559	86%
3. Sudden loss of vision	Nil	Nil
4. Night Blindness	12	12%
	650	**100%**

Table 7: Cardinal Complaints

Associated condition		
1. Night Blindness	13	2%
2. Nystagmus	7	1%
3. Pigmentary degeneration	26	4%
4. Typical colaboma of the iris	32	5%
5. Colaboma of choroid	20	3%
6. Convergent squint	13	2%
7. Divurgent squint	26	4%
8. keratoconus	6	1%
9. without any associated eye condition	517	78%
	650	100

Table 8: Associated ocular condition

Diaptors	No. of cases	Percentage
1-5	377	58%
6-10	150	23%
11-15	78	12%
16-20	26	4%
21-30	19	3%
	650	100

Table 9: Incidence off Degree of Myopia

The highest dioptric power of myopic error recorded in my series is – 22D.

Improvement with glasses	No. of cases	Percentage
6/6	299	46%
6/9	104	16%
6/12	84	13%
6/18	39	06%
6/24	39	06%
6/36	52	08%
6/60	13	02%
No improvement	20	03%
	650	100

Table 10: Degree of improvement with glasses

In my series 46% of cases improved to 6/6 vision. The non-improvement of vision is due to macular choroiditis with haemorrhage and lenticular opacities.

Complication		
1. Vitreous floater	78	12%
2. Choroidal thrombosis and haemorrhage	45	07%
3. Retinal detachment	1	0.15%
4. Complicated cataract	27	04%
5. No complication	499	77%

Table 11: Incidence of complications

	No. Of cases	Percentage
Diabetes mellitus	39	06%
Chronic simple glaucoma	33	05%

Table 12: Associated conditions

Fundus Appearance	No. of cases	Percentage
Media:		
1. Clear	546	84%
2. Hazy due to vitreous floaters	84	12%
3. Hazy due to lenticular opacities	26	04%
4.	650	100

Table 13: Fundus Changes

2. Optic Disc:

1. Clear margins	488	75%
2. temporal crescent	99	16%
3. Nasal crescent	26	04%
4. Annular crescent	19	03%
5. Atrophic disc	13	02%
	650	100

Table 14A

Normal	553	85%
Foster Fuch,s fleck	51	08%
Degenerative changes	39	06%
Stippling	07	01%

Table 14B: Macula

1. Normal	448	69%
2. Tessellated fundus	91	14%
3. Pigmentary changes	26	04%
4. Advanced degenerative changes	84	13%
5. Detachment	01	<1%

Table 14C: Retina

The above data shows clearly that 84% have clear media12 % have hazy media due to vitreal opacity, 23% showed crescents where as 75% showed no crescent.

SUMMARY AND CONCLUSIONS:

1. 10.1% of the patients of the patients attending Ophthalmic department of katuri medical college and Sanjeevani hospital Guntur have refractory errors.
2. In refractory errors 18.55 were due to myopia.
3. among myopia 13.2% were due to degenerative myopia.
4. In sex, males are more affected than females.
5. there is family incidence of myopia in 155 of cases.
6. About 86% of cases come with difficulty ibn seeing distant objects, and 12% with head ache.
7. Highest diaptoric power of myopia recorded is -22D.
8. Degenerative changes were also seen in low degree of myopia and no changews I n high myopia. This shows that degree of refractory error has no relation with degree of degenerative changes.
9. About 46% cases improved to 6/6 vision and correction at an early age resulted in good visual acuity than late.
10. 5% of cases are associated with chronic simple glaucoma and 65 of cases are associated with Diabetes mellitus.
11. Regarding complications vitreous floters are the most common
12. In our series of 650 myopics only one case of retinal detachment was recorded

DISCUSSION: Prevalence of myopia among patients attending ophthalmic department in our study is 10.1%. In a study by Prema Raju et al[6] incidence of myopia was around 30% in rural Tamil nadu. Our study is hospital based. And we analysed only patients seeking ophthalmic consultation. Various international studies showed a prevalence of 14 to 48%.[6] The highest prevalence estimates for myopia are for young adults in east Asia, with estimates encroaching 90% in some urbanized and highly educated populations.[7]

In our study more males were investigated for refractive errors probably because of more males seeking ophthalmic consultation. However there was no sex difference in the digit ratio measured in various studies done.[8]

The prevalence of degenerative myopia among myopic s in our study is 13.2%. In a study of south Indian population Premaraju et al[6] found a prevalence of 10%.

15% of myopics in our study showed a family history of myopia.

Degenerative changes were seen in low myopia. Highest diaptoric power of myopia recorded is -22D.

In our study maximum number of refractory errors occurred in the 10-25 year group showing that it may interfere with the learning abilities and performance of students if not corrected.

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AUTHORS:

1. D. V. C. Nagasree
2. G. Vijayalakshmi

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Ophthalmology, Katuri Medical College, Gunutur, Andhra Pradesh.
2. Post Graduate, Department of Ophthalmology, Katuri Medical College, Gunutur, Andhra Pradesh.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. D. V. C. Nagasree,
A2, Raghavas Vista,
Krishna Nagar Park Road,
Guntur, Andhra Pradesh-522006.
E-mail: ramakrishna45@yahoo.co.in

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