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SYMPTOMS AND VISUAL ACUITY IN PRIMARY ANGLE CLOSURE DISEASE-A STUDY IN A TERTIARY HOSPITAL IN SOUTH INDIA

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ABSTRACT: BACKGROUND: Primary Angle Closure Disease is a common cause of Blindness. So, our study was to know the symptoms and visual acuity in the Primary Angle Closure Disease. **OBJECTIVES:** This study was to evaluate symptoms and visual acuity in the Primary Angle Closure Disease, a common cause of Blindness. **MATERIALS AND METHODS:** This was a tertiary hospital based prospective study in the department of Glaucoma, Sarojini Devi Eye Hospital and Regional Institute of Ophthalmology (RIO), Osmania Medical College, Hyderabad over a period from August 2012 to August 2014. 50 Patients diagnosed as primary angle closure disease using International Society of Geographical and Epidemiological Classification (ISGEO) was studied. The data of age, gender, laterality, symptoms and visual acuity of the patients were taken. The data thus collected was analysed by simple statistical methods. **RESULTS:** This study data analysis of 50 patients of primary Angle closure disease showed the Age wise distribution as 10(20.0%) in 40-50yrs, 27(54.0%) in 51-60yrs, 12(24.0%) in 61-70yrs and 1(2.0%) >70yrs. 14(28.0%) were males and 36(72.0%) were females. Laterality was Bilateral in 19(38.0%) and unilateral in 31(62.0%). So, in 50 patients, 69 of 100 eyes had Primary angle closure disease. Symptoms were defective vision in 37(74.0%), pain and redness in 8(16.0%) and colored haloes in 5(10.0%). Visual Acuity was 6/6 to 6/18 in 5(7.3%), <6/18 to 6/60 in 32(46.4%), <6/60 to 3/60 in 11(15.9%) and <3/60 in 21(30.4%). In the 19(38.0%) patients of bilateral Primary angle closure disease, who presented when the vision in the other eye was affected, 16(32.0%) were with a Visual Acuity of < 3/60. **CONCLUSIONS:** Our study showed that increasing age and female gender were the common risk factors for primary angle closure disease. Defective Vision as the main presenting symptom showed the asymptomatic nature of the disease being one of the reasons for the late presentation. There is a need to identify those at risk early especially above 40 yrs and to create awareness in the society and the eye care professionals for the prevention of primary angle closure disease related blindness in the community with comprehensive eye examination at the primary eye care centers.
KEYWORDS: Glaucoma, Primary Angle Closure Disease, Visual Acuity, Defective Vision, Blindness.

INTRODUCTION: Glaucoma is a chronic progressive multifactorial optic neuropathy characterized by typical damage to the optic nerve head associated with visual dysfunction, with IOP considered as a major risk factor.[1]

After Cataract, Glaucoma is the second most common cause of visual morbidity. According to WHO, Glaucoma is the second most common cause of blindness. By 2010, Glaucoma is estimated to affect 60.5 million persons worldwide and by 2020 this may increase up to 79.6 million.[2] By 2010, bilateral blindness is estimated to be present in 3.9 million with primary angle closure Glaucoma and by 2020 this may increase to 5.3 million people in 2020.[3]

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In India, several epidemiological studies were conducted on the symptomatology of Primary Angle closure disease. As Primary angle closure disease is often asymptomatic, many cases are undetected except for the acute form which produces pain and decreased vision.[3]

In India, Primary angle closure disease is more common than in the western countries. The risk for blindness in primary angle closure glaucoma is more compared to the primary open angle glaucoma, though Primary angle closure disease appears equal in incidence with the Primary open angle Glaucoma.

In India, the Cataract is the major cause of blindness and is treatable by surgery, so much emphasis has been placed on managing the backlog of cataract surgery, that the programmes dealing with other causes of blindness like refractive errors, Glaucoma and corneal blindness etc. are being neglected. The increased prevalence of blindness due to primary angle closure disease may be due to the large proportion of undiagnosed disease. So, early case detection with a comprehensive eye examination as a routine is of utmost importance.

AIM: The present study was to evaluate the Symptoms and Visual Acuity at presentation of Primary Angle closure Disease and to analyze the above data to know the symptomatic nature and severity of visual loss of Primary angle closure disease.

MATERIALS AND METHODS: This was a tertiary hospital based study in the department of Glaucoma, Sarojini Devi Eye Hospital and Regional Institute of Ophthalmology (RIO), Osmania Medical College, Hyderabad over a period from August 2012 to August 2014. 50 Patients diagnosed as primary angle closure disease using International Society of Geographical and Epidemiological Classification (ISGEO) based on the history and comprehensive ocular examination which includes best corrected VA by Snellen's Chart, Anterior Segment examination by Slit Lamp, IOP measurement by Goldman's applanation Tonometer, Gonioscopy by 4 Mirror Goniolens (Sussmann and Posner) and Posterior segment examination by stereo-biomicroscopy with+90 D Lens and Indirect Ophthalmoscopy by+20 D lens were studied. The details of the data of age, gender, laterality and symptoms were noted. The study was approved by the institute ethical committee. The informed consent was taken from all the patients of the study group. The data thus collected was analyzed by simple statistical methods.

RESULTS: The study group was 50 patients diagnosed as Primary Angle Closure Disease.

Sl. No.	Age Group	No. of Patients	%
1	40 – 50	10	20.0
2	51 –60	27	54.0
3	61 – 70	12	24.0
4	>70	1	2.0
Total		**50**	**100.0**
Table 1: Age Group			

Age wise distribution was 10(20.0%) in 40-50yrs, 27(54.0%) in 51-60yrs, 12(24.0%) in 61-70yrs and 1(2.0%) > 70yrs.

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Sl. No.	Gender	No. of Patients	%
1	Males	14	28.0
2	Females	36	72.0
Total		50	100.0
Table 2: Gender			

Gender distribution was 14(28.0%) males and 36(72.0%) females

Sl. No.	Laterality	Males	Females	Total	%
1	Bilateral	1	18	19	38.0
2	Unilateral	13	18	31	62.0
	RE	12	12	24	48.0
	LE	1	6	7	14.0
Total		14	36	50	
Table 3: Laterality					

Laterality was Bilateral in 19(38.0%) and unilateral in 31(62.0%). So, in 50 patients, 69 of 100 eyes had Primary angle closure disease.

Sl. No.	Symptoms	No.	%
1	Defective Vision	37	74.0
2	Pain and Redness	8	16.0
3	Colored Haloes	5	10.0
Total		50	100.0
Table 4: Clinical Picture			

Symptoms were defective vision in 37(74.0%), pain and redness in 8(16.0%) and colored haloes in 5(10.0%).

Sl. No.	Visual Acuity	No.	%
1	6/6 to 6/18	5	7.3
2	<6/18 – 6/60	32	46.4
3	<6/60 – 3/60	11	15.9
4	<3/60	21	30.4
Total		69	100.0
Table 5: Snellen's Visual Acuity			

This table showed Visual Acuity of 6/6 to 6/18 in 5(7.3%), <6/18 to 6/60 in 32(46.4%), <6/60 to 3/60 in 11(15.9%) and <3/60 in 21(30.4%). In the 19(38.0%) patients of bilateral Primary angle closure disease patients, who presented when the vision in the other eye was affected, 16(32.0%) were with a VA of < 3/60.

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DISCUSSION: Globally, Glaucoma is the second most frequent cause of blindness after cataract. Glaucoma accounted for 12.3% of blindness in 2002 according to WHO. Of the estimated 8.9 million blind in India, 12.8% are due to Glaucoma. About 5.59 million suffer from primary angle closure disease by the turn of the century.[2,3]

Glaucoma is a lifelong disease leading to preventable irreversible blindness with most of the patients being unaware of their own disease. The prevalence of glaucoma is proportionally related to aging. As the world is aging particularly in India, the percentage of persons aged above 60yrs is rising steadily over the last decade. This will lead to an increase in the number of patients with Primary angle closure disease presenting for eye care. So, with greater life expectancy and an expanding aging population, a comprehensive eye examination especially above 40yrs, is to be incorporated at the primary eye care level for early case detection of Glaucoma. Otherwise, millions will continue to suffer due to Glaucoma and its associate morbidity.

In India, the most available data about Primary angle closure disease is hospitable based rather than the population based. Our study of primary angle closure disease is also a projection of hospital based information.

Our study showed the most common risk factor for primary angle closure disease as increasing age with 54% in 5-6th decade, similar to the studies by Dandona L et al.,[4] Garudadri et al.,[5] Vijaya L et al.,[6,7] Ramakrishnan R et al.,[8] Jacob A et al.,[9] Rayachaudari A et al.,[10] Foster P J et al.,[11] Parul Ichhpujani et al.,[12] Sihota R et al.,[13] Jost B Jonas et al.,[14] and Vinay Nangia et al.[15]

Our study showed a female preponderance with 72.0% females compared to 28.0% males, similar to the studies by Dandona L et al[4], Garudadri et al[5] and Vijaya et al.,[6,7]

Laterality was bilateral in 38.0% and unilateral in 62.0%. So, out of 100 eyes of 50 patients, 69 eyes had Primary angle closure disease.

In our study, defective vision was the main presenting symptom in 37(50.0%), followed by pain and redness in 8(16.0%) and colored haloes in 5(10.0%), which were more common in acute presentation similar to the studies by Vijaya L et al.[7] Parul Ichhpujani et al.[12] Sihota R et al.[13] In the study of Senthil S et al,[16] 87.2% were unaware of their disease. Most patients presented late in the course of the disease because of the asymptomatic nature of the disease. So, in all studies the majority of patients were asymptomatic i.e. the disease was silent and chronic.

Visual Acuity was 6/6 to 6/18 in 7.3%, <6/18 to 6/60 in 46.4%, <6/60 to 3/60 in 15.9% and <3/60 in 30.4%. In the 38.0% of bilateral primary angle closure disease, who presented when the vision in the other eye was affected, 32.0% were with < 3/60. The proportion of those diagnosed to be bilaterally blind because of Primary angle closure disease for APEDS,[4] CGS(rural)[6], and CGS(Urban)[7] was 16.6%, 2.9% and 5.9% respectively. In the study of Dandona et al,[4] out of 12 patients, 5(41.7%) had blindness in one or both eyes with <20/400 in 4 patients and <20/200(6/60) in 1 patient. In the study of Vijaya L et al,[7] 5.0% bilaterally and 8.8% unilaterally were blind. In the study by Senthil et al,[16] bilateral blindness was in 20.0% with VA of < 3/60. In the study by Ramanjit Sihota,[17] 7.0% were bilaterally blind.

CONCLUSIONS: The study showed that increasing age and female gender were the common risk factors for primary angle closure disease. Defective Vision was the main presenting symptom rather than pain and coloured haloes which showed the asymptomatic nature of the disease being one of the reasons for the late presentation.

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There is a need to identify those at risk early especially above 40yrs and to create awareness in the society and the eye care professionals for the prevention of primary angle closure disease related blindness in the community with comprehensive eye examination at the primary eye care centers.. Otherwise, millions will continue to suffer due to glaucoma and its associate morbidity with greater life expectancy and an expanding aging population.

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