

# Epidemiology of Optic Atrophy among the Patients Attending a Tertiary Care Hospital, Ongole, Prakasham District, AP

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## ABSTRACT

**Introduction:** Blindness is one of the most disabling conditions and commonest of public health problems. Most of the eye conditions may lead to involvement of optic nerve. Multiple etiological factors cause damage of optic nerve manifested as loss of vision. The present study was done to study various epidemiological variables in relation to optic atrophy.

**Material and Methods:** The study conducted in Ophthalmic Department of RIMS, Ongole, Prakasham District, A.P. The study conducted during 2015-16. GOI initiated a programme of SADAREM to provide benefit to disabled. The disabled people directed to specialty hospital located in head quarter for screening and complete examination for certifying type of disability and degree of disability for assisting socially and economically poor. During study period 149 patients screened for anterior and posterior segment pathology. As per the ophthalmic disability format of GOI

**Results:** The total number of disabled with ophthalmic reason referred from all over the district during study period was 811. Among the disabled 149 were having optic atrophy (OA). Disability was assessed through the criteria fixed by the GOI in the format designed in SADAREM Programme. The study group was in the range of 16 to 60 years. 70% of the study subjects were males. 78 percent of the referred were illiterate and 32 percent were unemployed. Consecutive optic atrophy 40 percent and in 21 percent both glaucoma and consecutive OA were observed in the better eye. In 31 percent of cases glaucoma (primary glaucoma) was associated finding with OA.

**Conclusion:** Periodic screening, early diagnosis and timely management in the high risk individuals can reduce disability due to OA.

**Keywords:** SADAREM, Disability, Optic atrophy (OA), Glaucoma

## INTRODUCTION

Optic atrophy is one of the commonest public health problems of eye. It is one of the earliest signs of ophthalmic disability. In addition to posterior segment pathology, majority of eye conditions of anterior segment finally ended with optic nerve involvement. Prevalence of OA is in community based survey conducted in South India was 3.42 percent. 49 percent presented with defective vision.<sup>1,2</sup>

Multiple factors are responsible for OA. In 89 percent of cases the cause is unknown. This condition is manifested in the form of pale disc, vision impairment and with field defects. The causes of OA can be classified into primary, secondary with infection and inflammation etc., and consecutive due to ocular diseases.

The present study conducted to know prevalence of OA among the patients referred to tertiary care hospital Under SADAREM programme and the degree of disability assessed to assist socially and economically deprived people.

## MATERIAL AND METHODS

The study was conducted in Department of Ophthalmology, Rajiv Gandhi Institute of Medical Sciences, Ongole, Prakasham District of AP. The study was carried out in 2015. The study population was all the referred disabled subjects to the department of ophthalmology from the district for certification of the degree of disability. The format designed for SADAREM Programme was used for collection of ophthalmic data of referred disabled people from all over the district. The basic information of study people was obtained through interview. All the visually impaired and disabled were examined for detecting underlying pathology and degree of disability. Best corrected visual acuity was recorded by using logarithm of minimum angle of resolution charts at 4 meters and 1 meter distances. Landolt's chart of C was used for illiterates. Counting of fingers, hand movement and light perception methods were followed for those VA could not be measured.

The ophthalmic specialist examined all the cases for anterior segment and posterior segment pathology by using slit lamp, plain mirror examination at one meter distance, and by using direct and indirect ophthalmoscopy. The data compiled in excel sheet and analyzed.

## RESULTS

During the study period, 811 disabled were attended for certification. In the study population, through screening 149 were identified with optic atrophy. The study population was consisting of different age groups. Children in the age group of below 15 years were 4%. 71% of the study population was in the age group of 16-60 years. 16% of the study group was belonging to 61-75 years. Above 75 years were 3% in the study subjects. Among the study population 104 (70%) were males and 45 (30%) females. 116 (78%) of the screened people were illiterate. 14 (9%) of subjects had up to secondary level of education. 5 (12%) of them were with intermediate level of education. Degree and Post Graduate level of education was seen in 9 (6%) and 4 (3%).

The main occupation of the study subjects was self-employment 95 (64%). 3 (2%) of the study group was both in Government

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S. No.	Underlying pathology	Number of eyes	%
1	Primary OA	Both eyes – 29 One eye - 6 (Total = 35)	11.74%
2	Secondary OA	3	1%
3	Consecutive OA Retinitis pigmentosa OA -59 PDR OA – 4 Eales OA – 4	Total 67	22.48%
4	Glaucomatous. OA	30	10.06%
5	Congenital Glaucoma OA	2	0.67%
6	Traumatic OA	10	3.36%
	Myopic degenerations with OA	2	0.67%
Total		149	100

**Table-1:** Distribution of pathology in both eyes

S. No.	% of visual impairment	Number	%
1	30	16	10.74
2	40	1	0.67
3	75	0	0
4	100	132	88.59
Total		149	100

**Table-2:** Distribution of study group according % of visual impairment

S. No.	Cause	Better eye- (NOs in Both Eyes)	%	Worse eye (NOs in one eye )	%
1	Congenital	1	0.67%	1	0.67%
2	Hereditary	1	0.67%	1	0.67%
3	Disease	133	89.26%	4	2.68
4	Malnutrition	0	0	0	0
5	Accidents	0	0	8	5.37
Total	Total	135	90.60	14	9.40

**Table-3:** Distribution of study group according to cause of visual impairment both eyes (i.e in Better and in single eye i.e worse eye)

Disease	Number of consanguineous cases	%
Primary Optic Atrophy	2	15.38
Retinitis Pigmentosa	9	69.24
Glaucomatous optic atrophy	2	15.38
Total	13	100

**Table-4:** Provide table heading

service/on wages. Around 51 (34%) of the screened subjects were without any employment.

Marital status of the study population was 118 (79%) married and 31 (21%) unmarried. Based on caste of the study group the following is the distribution: OC 63 (42%), BC 28 (19%), SC 7 (5%), ST 11 (7%) and Minority 40 (27%). Out of 149 study subjects 139 (93%) were belonging to Hindu Religion and the remaining belonging to other religions 10 (7%).

The socioeconomic status of people attended for screening was assessed through availability of white ration card indicating below poverty line. Out of 149 of study group, 148 were having white ration card 148 (99.3%).

As per place of residence the study subjects were classified. 134 (90%) were having rural back ground and the remaining 15 (10%) with urban place of residence.

Table -1 shows the distribution of OA according to underlying

pathology. In 50% of cases exact diagnosis for OA was not identified due to various reasons. In 22.48% cases retinitis pigmentosa was the main cause for OA. Primary OA and glaucoma were 11% and 10% consecutive OA.

Table 2 shows the distribution of study subjects according to the % visual impairment. As per the visual impairment, the study group classified in to 4 groups. 88.59% of the study group of OA was with 100% visual impairment. Around 11% of the study subjects were having less than 30% visual impairment.

Table 3 shows the distribution of study subjects according to underlying cause of OA. Eye diseases were observed in 89.26% of cases in better eye i.e in both eyes whereas 2.68% in worst eye i.e in single eye.

10% of the study group could able to perform limited work through seeing. 22% of the people could able to do some amount of work through reading and writing.

## DISCUSSION

The study was conducted in the Department of Ophthalmology, RIMS, Ongole during January to December 2015. During the study period 811 cases were screened for ophthalmic disability. The total number of study subjects with optic atrophy studied was 149. The study subjects were classified according to age group wise in to 6 groups. 55% of study subjects in the age group of 30-60 years. 70% of the study group was males. 78%

of the study group was illiterate and only 9% were studied up to 10<sup>th</sup> standard. 64% of the study group was with self-employment and another 32% were belonging to unemployment group. 79% of the subjects were married. 27% of the subjects were from minority group. 90% of the subjects were with rural background. Except one subject all were having ration card of low income group.

22.48% in both the eyes the major cause of optic atrophy was retinitis pigmentosa. Primary optic atrophy was observed in 11.24% of cases. 10.06% of cases were having optic atrophy with glaucoma. 88.59% cases were with absolute lack of vision and another 11% with one eye and they were certified as 100% and 30% disability accordingly. 37%-42% of the study subjects had the underlying pathology since birth. 48% to 57% of the study subjects were normal at birth and subsequently developed due to diseases. 10% to 22% could able to perform their work either by seeing or reading and writing.

In one study conducted at Punjab<sup>1</sup>, 100 eyes were examined for optic atrophy and found in their study 66 eyes of males and 34 of females. In that study they found 12 eyes with optic atrophy of primary cause and 15 eyes with secondary cause with papillitis, papilloedema and consecutive aetiology with changes in choreo-retinal changes due to degeneration or inflammation. Agarwal Goswamy et al<sup>2-4</sup> found in their study, 70% of optic atrophy with no known cause.

In one study conducted by Mudgil and Repka et al, among children in below the age of 16 years and found 9% of optic atrophy was due to perinatal causes and prematurity was the leading cause.<sup>5,6</sup>

In one study conducted at Chennai to estimate the prevalence of glaucoma in 92 subjects, found 3.42% of optic atrophy.<sup>7</sup>

## CONCLUSION

Disability due to optic atrophy can be minimized through early screening, diagnosing the underlying pathology to prevent irreparable damage by early intervention measures.

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