



CONGENITAL GLAUCOMA; FREQUENCY OF CONGENITAL GLAUCOMA

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ABSTRACT... Objectives: To compare the incidence of congenital glaucoma of children in Pakistan with the world incidence. **Study Type, Setting and Period:** Comparative study, conducted at Al Shifa eye hospital Rawalpindi from August 2010 to September 2014. **Material and Method:** The record was analyzed of congenital eye anomalies of the children coming to hospital, focusing on congenital glaucoma. **Results:** There were total five hundreds and fourteen congenital anomalies of eyes (225 females, 289 males). The main bulk of patients were between births to two years. The frequency of congenital glaucoma was 17 (3.3%) with variable visual standards. **Conclusion:** Although the frequency of congenital glaucoma is not alarming in this study but early management will prevent from permanent blindness.

Key words: Congenital Anomalies, Congenital Glaucoma, Glaucoma.

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INTRODUCTION

The glaucoma is defined as raised intra ocular pressure. In progression it impairs the vision by damaging the optic disc. Finally blindness may occur. An irido-corneal angle malformation is the main culprit of this condition. The aqueous humor flow is hampered resulting raised pressure within eye ball.^{1,2}

The disease usually starts at birth or before 3 years of age.^{3,4} About 60% of patients are diagnosed up to the age of six months and 80% till the end of first year of life.³

If glaucoma is present at birth called congenital glaucoma, between 1-24 months called infantile and if appears after three years is named as juvenile glaucoma.⁵

The primary congenital glaucoma cases are inherited in about 10%.⁵ These are more common in male gender i.e. 56%.⁶ The familial incidence is 10-40% and about 70% are bilateral.³

In Gypsies (the ethnic isolate of Roms) in Slovakia, the incidence of congenital glaucoma is high due to autosomal recessive disease.⁷ The congenital glaucoma is frequent in developing countries

and the causes of congenital glaucoma may be prevented.^{8,9}

MATERIALS AND METHODS

The three years data from August 2010 to September 2014 of congenital anomalies of eyes from Al Shifa tertiary eye hospital pediatric department Rawalpindi collected and then analyzed. The parents brought their children suspecting visual problems. The majority of cases were referred from different surrounding districts of Rawalpindi.

RESULTS

The analysis of retrospectively collected data of three years was as followed. The five hundreds and fourteen congenital anomalies of eyes were seen. There were 225 (43.8%) females and 289 (56.2%) males. The patient's age range was between birth to fifteen years. The majority (222) of the patients were between births to two years (102 female, 120 males). Age distribution is shown in Table-I.

The various common cases of congenital malformations of eyes were, cataract 22.6%, ptosis 8.8%, pigmentary retinal degeneration 6.8%, micro-ophthalmos 5%, optic atrophy 4.5%,

Duane's syndrom 3.89%, congenital glaucoma 3.3%, coloboma (retinal, uveal, lid)2.91%, maculopathy 2.72% albinism 2.33% and other malformations (Table-II).

Age (years)	Male	Female	Total	%
0-2	120	102	222	43.2
2.1-4	35	30	65	12.6
4.1-6	40	26	66	12.8
6.1-8	34	21	66	12.8
8.1-10	33	23	56	10.9
10.1-12	22	19	41	8.0
12.1-15	05	04	09	1.8
Total	289	225	514	100

Table-I. Distribution by age and gender

S. No	Disease	Total	%
1	Cataract	116	22.60
2	Lacrimal apparatus anomalies	103	20.00
3	Ptosis	45	8.80
4	Pigmentary retinal degeneration	35	6.80
5	Micro-ophthalmos/An-ophthalmos	26	5.00
6	Optiic atrophy	23	4.50
7	Duane's Syndrom	20	3.89
8	Congenital glaucoma	17	3.30
9	Coloboma (uveal, retinal, lid)	15	2.91
10	Maculopathy	14	2.72
11	Albinism	13	2.33
12	Retinoblastoma	11	2.14
13	Ectopic lentis	09	1.75
14	Blepharophimosis	08	1.55
15	Dermoid cyst	06	1.16
16	Double elevator palsy	06	1.16
17	Mesodermal dysgenesis	06	1.16
18	Persistant hyperplastic primary vitreous	06	1.16
19	Congenital retinal detachment	06	1.16
20	Other causes	43	8.37

Table-II. Types and frequency of congenital anomalies.

The congenital glaucoma cases were 17 out of 514 patients of eye malformations. The nine cases were bilateral and male patients were eight. The most cases were between birth to five years.

DISCUSSION

Early detection, treatment and rehabilitation of the patients are the key success of all eyes congenital malformations including congenital glaucoma. Most of the childhood blindness could be avoided.

The incidence is 1 in 1250 in the Slovakian Roms (Gypsies),¹⁰ 1 in 2500 in the Middle East,¹¹ and 1 in 3300 in Andhra Pradesh, India.¹²

The annual incidence in Great Britain of primary congenital glaucoma was 5.41 in one lakh live births. In Pakistani origin the incidence of congenital glaucoma was almost nine times that of Caucasians.¹³

Congenital eye anomalies are an important causes of childhood blindness¹⁴, and account for 60% of cases.¹⁵

In study of Dallas out of 376 eyes 239 had childhood glaucoma. Out of these 19% had primary congenital glaucoma and 4% had primary juvenile glaucoma.⁶

The epidemiological study in Spain showed 414 infants had congenital eye malformations out of 1,124,654 consecutive births (3.68/10,000). The frequent malformations were anophthalmia/microphthalmia (21.34/100,000), congenital cataract (6.31) and congenital glaucoma (2.85).¹⁶

In tertiary eye hospital Logas Nigeria, out of 412 pediatric patients, 40(9.7 %) had congenital malformations of eyes. The common congenital defects were cataract (39.1%), Ptosis (17.4%) and glaucoma (8.7%).¹⁷

The review study of congenital eye disorders between Jan. 1994 to December 2004 was carried out in teaching hospital Sagamu, Nigeria. The most common congenital malformations were cataract 50 (47.6%) and congenital glaucoma 15 (14.3%).¹⁸

A Camaroon study of eye and adenexa anomalies, among children from birth to five years was carried out from January 2003 to December 2009. Out of 150, the common anomalies were, congenital cataract (10.9%) and congenital glaucoma (10.9%).¹⁹

Among 54 congenital eye anomalies 23 (42.6%) were congenital cataract and 12 (22.2%) were congenital glaucoma in a South-eastern study of Nigeria.²⁰

Out of 78 cases of congenital defects of eye/adenexa, congenital ptosis were 12(15.4 %), glaucoma 10 (12.8%) and esotopia were 9 (11.5%) in a study North Western Nigeria.²¹

A study of congenital malformations of eyes in tertiary hospital of Sagamu Nigeria, there were cataract (47.6%) and congenital glaucoma (14.3%).²²

Out of 31 cases of congenital malformation of eyes congenital cataract were (19%), microphthalmia (16.1%) and congenital glaucoma (9.7%), in a teaching hospital of Nigeria.²³

In a retrospective study of 1740 patients in Zaire, the congenital eye anomalies were found in 2.2%.

Out of these were congenital cataract (38%), congenital glaucoma (9%).²⁴

CONCLUSION

Although the frequency of congenital glaucoma is not alarming in this study but early management will prevent from permanent blindness.

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Give charity without delay, for it stands in the way of calamity.

– Al-Tirmidhi, Hadith 589 – ”

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
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