ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF RESEARCH IN PHARMACEUTICAL SCIENCES

Published by JK Welfare & Pharmascope Foundation Journal Home Page: https://ijrps.com

The pattern of cataract in Amara city, south of Iraq, 2017

Hasan Abdulameer Al-Mu'mar*

College of Medicine, University of Misan, Iraq

Article History:

Received on: 18.05.2019
Revised on: 07.08.2019
Accepted on: 11.08.2019

Keywords:

cataract,
pattern,
Amara city

ABSTRACT

A cataract is the leading cause of blindness and visual impairment throughout the world according to the World Health Organization (WHO), and it has been shown that visual impairment and age-related cataract may be independent risk factors for increased mortality in older persons. This study was aimed to determine the epidemiological characteristics of cataract patients and their management. A cross-sectional study with an analytic element. It was conducted in the department of ophthalmology in Al-Sadder teaching hospital in Misan governorate, Iraq. During 2017, the study, including the patients who attend the Ophthalmology Unit regarding some characteristics features with underwent a full eye examination with some investigations. The results of the current study revealed that the total study sample was 109 patients who diagnosed as cataract patient, out of them about 63 (57%) was female and 46 (43%) was male. There were 61(56%) of the case with age $\geq$ 50 years old, while the rest (44%) of the case with age less than 50-year-old. More than two-thirds of cases was lived in urban(72.5%). About 28% of cataract patients was a smoker, and 17.4% was a positive family history. The positive history of Systemic disease, Ocular disease or trauma and steroid was 50,4%, 21.1%, and 14.7, respectively. There was a three type of cataract was noted by the study as following; nuclear sclerotic was 53%, posterior subcapsular was 34%, and cortical was 13%. A statistically significant association between cataract types and patients age, address, steroid maturity and IOP where p-value $\leq$0.05. Surgery used in 50% of patients. Cataract mostly occurs in female, more than 50 years old patients and steroid used. Common treatment was surgery.

*Corresponding Author

Name: Hasan Abdulameer Al-Mu'mar
Phone: +9647707858876
Email: hasan_abdulamir@yahoo.com

ISSN: 0975-7538

DOI: https://doi.org/10.26452/ijrps.v10i3.1505

Production and Hosted by

IJRPS | https://ijrps.com

INTRODUCTION

A cataract is the most prevalent ophthalmic disease. It is the leading cause of blindness and visual impairment worldwide, according to the (WHO vision 2020 Report, 2014). It is defined as lens opacity or clouding, which affects the optical quality of the crystalline lens that affects vision. Consequently, cataract has a large impact on the quality of life of many elderly people, as most cataracts are age-related. Developing countries like our country will bear an increasing burden for cataract blindness because the higher incidence of cataracts and cataracts occur earlier in life with fewer country resources and lack of patient's information about the disease (Kalua *et al.*, 2008). Cataracts may be partial or complete, unilateral or bilateral, stationary or progressive, hard or soft. Its main types are nuclear sclerosis, posterior subscapular and cortical. The symptoms vary depending on degree of

cataract and its type, though considerable overlap occurs in between, patients with sclerotic nuclear cataract often notice a reduction in vision and decrease contrast sensitivity, those with posterior subscapular cataract usually complain of reading difficulties and nighttime driving problem and those with cortical cataract usually suffers from glare or monocular diplopia (Murthy *et al.*, 2008). Although various risk factors for cataract development like Diabetes Mellitus, drug use, trauma, smoking, UV-B light, and many others have been identified, data to develop guidelines for reducing the risk of cataract remain inconclusive. Although no means of preventing cataracts has been scientifically proven, wearing sunglasses, stop smoking with regular intake of antioxidants and some nutrients may slow its development or decrease its risk. Although a pharmacological preventive or therapeutic treatment for this potentially blinding disease is being actively sought, the solution still appears to be many years away. Therefore, surgical treatment for cataracts which includes intraocular lens implantation remains the only viable alternative with highly successful results. The main indication for cataract removal is that cataract which interferes with patient daily activity and functional ability in order to provide the patient best outcome as close as possible to their desire. Phacoemulsification under local anesthesia is the most widely used cataract surgery, and it is one of the most common surgical procedures performed in the world which uses ultrasound energy to emulsify the cataract. Complications of cataract surgery with undesirable consequences may occur intraoperatively or later in the postoperative period. Fortunately, complications resulting in permanent visual loss are rare with modern surgical technology in the hands of experienced ophthalmologists (Suryanarayana *et al.*, 2005).

MATERIALS AND METHODS

The study was a cross-sectional study with an analytic element. It was conducted in the Department of Ophthalmology in Al-Sader Teaching Hospital in Misan governorate, Iraq. During 2017, the study including the patients who attending the ophthalmology unit regarding their characteristics features (age, sex, residency, family history, smoking, chronic disease, eye trauma or surgery and drug history) also each patient underwent a full eye examination with some investigations such as random blood sugar (RBS) and dilated fundoscopy. The study was excluding any uncorrected data or information. Data was collected using a special formula, constructed by the researcher and; based on the standard criteria. The study protocol was reviewed; approval and official permission were obtained from the Ministry of Higher Education and Misan Directorate Of Health (DOH) to conduct the present study.

Statistical analysis

The analysis of data was carried out using the available Statistical packages for social science, version 20.0 (SPSS-20.0). Data were presented in the form of the table of number and percentage also as figures. Chi-square test (χ^2-test) was used for testing the significance of the association between variable under study. Statistical significance was considered whenever the p-value was equal or less than 0.05.

RESULTS AND DISCUSSION

The total study sample was 109 patients who diagnosed as cataract patient after examination of them in ophthalmological unit by a specialist doctor, out of them about 63 (57%) was female, and 46 (43%) was male. The present study was found as shown in Table 1 that there were 61(56%) of the case with age $\geq$ 50 years old, while the rest (44%) of the case with age less than 50-year-old. More than two-thirds of cases were lived in urban(72.5%). About 28% of cataract patients was a smoker, and 17.4% was a positive family history. The positive history of Systemic disease, Ocular disease or trauma and steroid was 50,4%, 21.1%, and 14.7, respectively.

This study was found that the site of cataract was presented in both eyes followed by left eye and less in right eye (40, 39 and 30 in both, left and right eyes respectively), also the study reported that most of case were immature 75(68.8%), and the intraorbital pressure and fundus were normal in about 84% and 87% of cataract eye(respectively), while the visual acuity was effect by cataract when the study found that 74% of eye was abnormal. As shown in Table 2.

There was three types of cataract was noted by our study and reported as follows; nuclear sclerotic was 53%, posterior sub-capsular was 34%, and cortical was 13% as shown in Figure 1.

There were 62% of posterior sub-capsular of age < 50 years while 56% of Nuclear sclerotic and 100% of cortical were with age $\geq$ 50 years this showed a statistically significant association between cataract types and patients age where p-value 0.006. (Table 3). The study was found that 91%, 62%, and 64% of posterior sub-capsular, Nuclear sclerotic and cortical type respectively were lived in urban area with a statistically significant association between them (Table 3), also found that 96% nuclear sclerotic, 93% of cortical and 62% of posterior sub-capsular types were not received

Table 1: Distribution of cataract patients according to the demographic characteristics feature

variables		Frequency	Frequency
Gender	Male	46	43
	Female	63	57
Age (year)	< 50	48	44
	≥ 50	61	56
Gender	Male	63	57
	Female	46	43
address	Rural	30	27.5
	Urban	79	72.5
smoking	Yes	31	28.4
	No	78	71.6
family	positive	19	17.4
	Negative	90	82.6
Systemic disease	positive	55	50.4
	Negative	54	49.6
Ocular disease and trauma	positive	23	21.1
	Negative	86	78.9
steroid	positive	16	14.7
	negative	93	85.3
	Total	109	100

Table 2: Distribution of cataract patients according to the orbital characteristics

variables		N	%
site	Right	30	27.5
	Left	39	35.8
	Both	40	36.7
maturity	Mature	34	31.2
	Immature	75	68.8
IOP	Normal	92	84.3
	Abnormal	17	15.7
fundus	Normal	95	87.1
	Abnormal	14	12.9
visual acuity	Normal	28	25.7
	Abnormal	81	74.3
	Total	109	100

steroid while 37% of posterior sub-capsular was had history of steroid treatment with highly statistical significant association (p-value 0.001) as shown in Table 3. From other aspect there was a significant association between orbital characteristics (maturity and IOP) and cataracts type when p-value was (0.07 and 0.01) in which most of posterior sub-capsular (83%) and nuclear sclerotic (65%) were immature while it reverses in cortical most of them was mature (57%). For IOP, most of them were normal (100%, 85% and 73% as posterior sub-capsular, cortical and nuclear sclerotic respectively) as shown in Table 3.

The present study was found that there was no statistically significant association between the types of cataract and others variables like smoking, family history, systemic disease, Ocular disease and trauma, site, fundus and visual acuity where the p-value was (0.4, 0.7, 0.1, 0.5, 0.6, 0.6. And 0.7 respectively) as shown in Table 4.

Finally, the present study was reported that 55(50.5%) case of cataract treated by surgery, then about 29(26.6%) were treated by glasses and the rest (25 case,22.9%) were treated by drop only, as

Table 3: Distribution of some variable according to the types of cataract (statistical significant association p-value $\leq$ 0.05)

Variable		cataract type								P value
		posterior sub-capsular		Nuclear sclerotic		cortical		Total		
		N	%	N	%	N	%	N	%	
Age (year)	< 50	23	62.2	25	43.1	0	0	48	44	0.006
	$\geq$ 50	14	37.8	33	56.9	14	100	61	56	
address	Rural	3	8.1	22	37.8	5	35.7	30	27.1	0.03
	Urban	34	91.9	36	62.2	9	64.3	79	72.9	
steroid	Positive	14	37.8	2	3.4	1	7	17	15.6	0.001
	Negative	23	62.5	56	96.6	13	93	92	84.4	
maturity	Mature	6	16.3	20	34.5	8	57	34	31.4	0.07
	Immature	31	83.7	38	65.5	6	43	75	68.6	
IOP	Normal	37	100	43	73	12	85.7	92	84.4	0.01
	Abnormal	0	0	15	27	2	14.3	17	15.6	
Total		37	100	58	100	14	100	109	100	

Table 4: Distribution of some variable according to the types of cataract (no statistically significant association p-value > 0.05)

Variable		cataract type								P value
		posterior sub-capsular		Nuclear sclerotic		cortical		Total		
		N	%	N	%	N	%	N	%	
Smoking	Yes	9	25	19	32.7	2	14.2	31	27.1	0.4
	No	28	75	39	67.3	12	85.8	78	72.9	
Family	Positive	8	21.7	10	16.6	2	14.2	19	17.1	0.7
	Negative	29	78.3	48	83.3	12	85.8	90	82.9	
Systemic disease	Positive	19	51	25	43.2	11	78.5	55	50.5	0.1
	Negative	18	49	33	56.8	3	21.5	54	49.5	
Ocular disease	Positive	11	29.7	5	8.6	2	14.2	23	11.4	0.5
	Negative	26	70.3	53	91.4	12	85.8	86	88.6	
Site (eye)	Right	12	32.5	13	22	5	35.7	30	27.6	0.6
	Left	11	29.7	25	43	3	21.5	39	35.8	
	Both	14	37.8	20	35	6	42.8	40	43.6	
Fundus	Normal	32	86.5	52	89.6	11	78.5	95	87.1	0.6
	Abnormal	5	13.5	6	10.4	3	21.5	14	12.9	
Visual acuity	Normal	8	21.6	17	29.4	3	22.2	18	25.7	0.7
	Abnormal	29	78.4	41	70.6	11	77.8	52	74.3	
	Total	37	34.2	58	52.9	14	12.9	109	100	

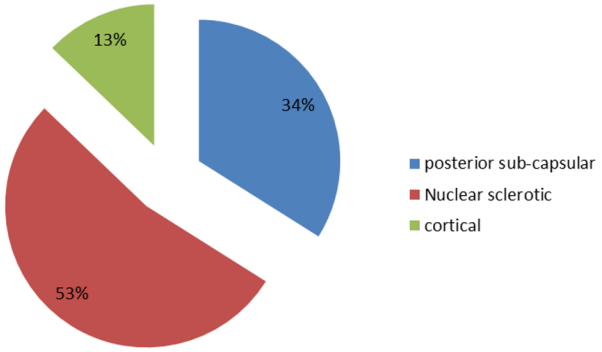

Figure 1: Distribution of the study sample according to the types of cataract

shown in Figure 2.

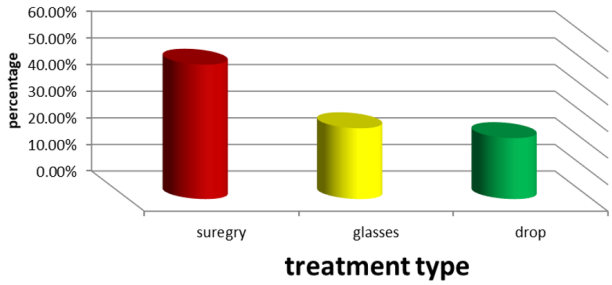

Figure 2: Treatment of cataract patients

The occurrence of cataracts increases with age starting around age 50 (National Eye Institute, 2016). Cataracts are the leading cause of visual impairment among most of the developed countries and are the leading cause of treatable blindness among population descent age 40 and older (Congdon, 2004; Cotter *et al.*, 2006). There were most of cataract patient of 50-year-old and more and it increased with aging, more than half of nuclear sclerotic and all of the cortical cataract type were in age more than 50 years, while near to one third of posterior sub-capsular had age less than 50 years, this represents an association between age and type of cataract. A similar result was reported by other studies that conduct in different parts of world, which found that age considered as risk factor for cataract occurrence, likes study done in china by Foster (2003) and other a review study done in Europe by Prokofyeva *et al.* (2013). The prevalence of cataract was higher in a female patient in our study than the male that in agreement with another study which found most cataract patients was man while some other study revealed that the occurrence of cataract was more or high in male patients (Foster, 2003; Prokofyeva *et al.*, 2013). The present study was noticed that more than two-thirds of cases were lived in urban which are quite similar to the results of studies done by Foster and Elena in different areas (Foster, 2003; Prokofyeva *et al.*, 2013).

The smoking rate was high among patient of our study sample also, and there was a positive family history this was similar to other studies such as Esteban *et al.* (2007). The positive history of Systemic disease, Ocular disease, trauma, and steroid was high in the present study which in agreement with another study which found the same results (Seah *et al.*, 2002). This study was found that the site of cataract was presented in both eyes followed by left eye and less in right eye, also the study reported that most of case were immature and the intra-orbital pressure and fundus were normal in cataract eye (respectively), while the visual acuity was effect by cataract when the study found that 74% of eye was abnormal. (Theodoropoulou *et al.*, 2011; WHO vision 2020 Report, 2014). Regarding the treatment; our study found that more than 50% of cases treated with surgery and the rest were treated by glasses and by the drop (Baltussen *et al.*, 2004).

CONCLUSION

Cataract mostly occurs in females more than male and age more than 50 years old patients and related to steroid use. The common treatment was surgery.

REFERENCES

Baltussen, R., Sylla, M., Mariotti, S. P. 2004. Cost-effectiveness analysis of cataract surgery: A global and regional analysis. *Bulletin of the World Health Organization*, 82:338–345.

Congdon, N. 2004. Prevalence of Cataract and Pseudophakia/Aphakia Among Adults in theUnited States. *Archives of Ophthalmology*, 122(4).

Cotter, S., Varma, R., Yinglai, M., Azen, S., Klein, R. 2006. Causes of Low Vision and Blindness in Adult LatinosThe Los Angeles Latino Eye Study. *Ophthalmology*, 113(9):1574–1582.

Esteban, J. J. N., Leiva, J. A. G., Caracena, N. V., Bermejo, J. B., Purón, M. E. C., Vizcaíno, V. J. 2007. Prevalence and risk factors of lens opacities in the elderly in. *European Journal of Ophthalmology*, 17:29–37.

Foster, P. J. 2003. Risk factors for nuclear, cortical and posterior subcapsular cataracts in the Chinese population of Singapore: the Tanjong Pagar Survey. *British Journal of Ophthalmology*, 87(9):1112–1120.

Kalua, K., Patel, D., Muhit, M., Courtright, P. 2008. Causes of blindness among children identified through village key informants in Malawi. *Canadian Journal of Ophthalmology*, 43(4):425–427.

Murthy, G., Gupta, S., John, N., Vashist, P. 2008. Cur-

rent status of cataract blindness and Vision 2020: The right to sight initiative in India. *Indian Journal of Ophthalmology*, 56(6):489–489.

National Eye Institute 2016. Statistics and data: cataract.

Prokofyeva, E., Wegener, A., Zrenner, E. 2013. Cataract prevalence and prevention in Europe: a literature review. *Acta Ophthalmologica*, 91(5):395–405.

Seah, S. K., Wong, T. Y., Foster, P. J., Ng, T. P., Johnson, G. J. 2002. Prevalence of lens opacity in Chinese residents of Singapore: the tanjong pagar survey. *Ophthalmology*, 109(11):1221–1227.

Suryanarayana, P., Saraswat, M., Mrudula, T., Krishna, T. P., Krishnaswamy, K., Reddy, G. B. 2005. Curcumin and Turmeric Delay Streptozotocin-Induced Diabetic Cataract in Rats. *Investigative Opthalmology & Visual Science*, 46(6).

Theodoropoulou, S., Theodossiadis, P., Samoli, E., Vergados, I., Lagiou, P., Tzonou, A. 2011. The epidemiology of cataract: a study in Greece. *Acta Ophthalmologica*, 89(2):167–173.

WHO vision 2020 Report 2014. Global Initiative For The Elimination Of Avoidable Blindness.