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THE EFFECT OF DIFFERENT TYPES OF CATARACT ON VISUAL ACUITY IN PATIENTS REVIEWING AL MOUJTAHD HOSPITAL IN DAMASCUS, SYRIA

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ABSTRACT

This study aimed to study the effect of different types of cataracts on VA in patients reviewing Al Mujtahid Hospital. This is a retrospective study composed of all patients diagnosed with cataract at AlMoujtahd Hospital (Damascus Hospital) between 1/6/2017 and 31/12/2017. Statistical analysis was done using Excel and SPSS 23.0. We analyzed the data regarding the age, gender, types of cataract ant the risk factors of cataract. We divided the patients in this study according to age into four groups (12-30), (31-50), (51-70) and (>70) years old. We analyzed the data regarding the age, gender and the effect of different types of cataract on VA. Snellen chart was used to test the visual acuity. This study included 44patientsdiagnosed with cataract (86 cataracts). (2 cases of cataract only in the left eye, 0 cases of cataract only in the right eye and 42 cases of cataract in both eyes). Most of the patients were between 51-70 years old (72.7% 0f all patients) followed by those older than 70 (18.3% of all patients). 21 patients (47.7% of all patients) were females. The nuclear cataract affected the VA the most, whereas the cortical cataract affected it the least. The presence of these both types of cataract together (Nuclear + Posterior sub- capsular) has the worst effect on VA. Most of the patients in our study were between 51-70 years old (72.7% of all patients) followed by those older than 70 (18.3% of all patients). 47.7% of all patients were females. The nuclear cataract affected the VA the most, whereas the cortical cataract affected it the least. Nuclear and Posterior sub- capsular cataract together have the worst effect on VA.

INTRODUCTION

Cataract is the leading cause of blindness worldwide and is responsible for half of blindness cases. 20 million people are affected by it yearly (1). Furthermore, cataract has a major load on economy and public health services due to increased aging population and increased cataract surgery services (2). People over 50 years old are the most affected group and the risk increases significantly with age. To clarify, cataracts are present in 20% of people between 65-74 years old and over 50% of those older than 74 have cataract. Cataract types are mainly divided to nuclear, cortical, posterior sub-capsular, mature (not a type but the final stage for all cataracts) and congenital. Surgery remains the only treatment to cataract and effective surgery can lower the blindness rates (3). Cataract surgery is composed of the removal cloudy eye lens and then substituting it with a synthetic lens. This surgery is very common worldwide, especially in Germany where about 800000 people annually have it (4). Visual acuity (VA) is the major parameter for testing the quality of vision, and it is most commonly tested in our country using Snellen chart (6) (Figure-1). This study aimed to study the effect of different types of cataracts on VA in patients reviewing Al Mujtahid Hospital. Up to our knowledge, this study is the first of its kind in Syria.

MATERIALS AND METHODS

This is a retrospective study composed of all patients diagnosed with cataract at AlMoujtahd Hospital (Damascus Hospital) between 1/6/2017 and 31/12/2017. We excluded the patients who have accompanying diseases that could affect the VA (diabetic retinopathy, hypertensive retinopathy, retinitis pigmentosa, degeneration of retina and sunchysis scintillans). This study included 44 patients diagnosed with cataract (86 cataracts). (2 cases of cataract only in the left eye, 0 cases of cataract only in the right eye and 42 cases of cataract in both eyes). We analyzed the data regarding the age, gender and the effect of different types of cataract on VA. We divided the patients in this study according to age into four groups (12-30), (31-50), (51-70) and (>70) years old. We reviewed the effect of different types of cataract on VA, regardless of the age. Snellen chart was used to test the visual acuity (Figure-1). Statistical analysis was done using Excel and SPSS 23.0.

RESULTS

Table-1 shows the age and gender of all patients of study; Table-2 and Table-3 show the visual acuity results using Snellen chart in patients with different types of cataract.

DISCUSSION

Cataract is an eye condition that causes the lens of the eye to become cloudy. This leads to an impairment of vision, specifically in seeing the details in objects clearly. Cataract is most common in people over 50 years old and the risk rises with age (3). Furthermore, 20% of people between 65 and 74 years old have cataract. In addition, over 50% of people older than 74 years old have cataract. In our study, most of the patients were between 51-70 years old (72.7% 0f all patients) followed by those older than 70 (18.3% of all patients) (Table-1). According to different studies, females are more prone to getting most types of cataract than males. This is most likely to hormonal changes after menopause in women. (Lower estrogen levels after menopause) (5). in our study, 21 patients (47.7% of all patients) were females (Table-1). The main types of cataract are nuclear, cortical, posterior sub-capsular and congenital. In this study, we had two cases of cataract only in the left eye, no cases of cataract only in the right eye and 42 cases of cataract in both eyes. Best VA result is 10/10 and in our study the VA was divided to four groups, poor (1/10 or less), moderate (2/10-4/10), good (5/10-7/10) and excellent (8/10-10/10). We had 17 cases of nuclear cataracts in both eyes and about half of them (8 out of 17) had a VA of (2/10-4/10), while seven of them had a VA of (5/10-7/10). Only two patients with nuclear cataract had a VA of (8/10-10/10). Cortical cataract effect on VA is usually minimal. In our study, we had 2 cases of cortical cataract (one in each eye) with a VA of (2/10-4/10) for one and (8/10-10/10) for the other. We had 12 cases of posterior sub-capsular cataract in both eyes and one of them had a VA of (1/10 or less), four of them had a VA of (2/10-4/10), while six of them had a VA of (5/10-7/10). Only one patient with posterior sub-capsular cataract had a VA of (8/10-10/10). We had 3 cases of mature cataract in both eyes and all of them had a VA of (1/10 or less). This is reasonable considering that mature cataract is the final stage of cataract and the lens becomes diffusely white due to complete opacification of the cortex. It should be noted that we found 21 cases of Nuclear and Posterior sub- capsular cataract together and 16 of them had a VA of (1/10 or less) or (2/10-4/10). This means that the presence of

both types of cataract together (Nuclear+ Posterior sub- capsular) has the worst effect on VA. Martin. demonstrated that regarding VA, the effect of increasing cataract was greatest for nuclear and smallest for cortical opacities, which is the same as of our findings. We should mention some of the deficiencies in our study; like all retrospective studies, we could not find the degree of each cataract to determine the severity effect on the VA. This is due to missing data from the records just like all other retrospective studies.

CONCLUSION

Most of the patients in our study were between 51-70 years old (72.7% of all patients) followed by those older than 70 (18.3% of all patients). 47.7% of all patients were females. The nuclear cataract affected the VA the most, whereas the cortical cataract affected it the least. Nuclear and Posterior sub- capsular cataract together have the worst effect on VA (worse than each type alone).

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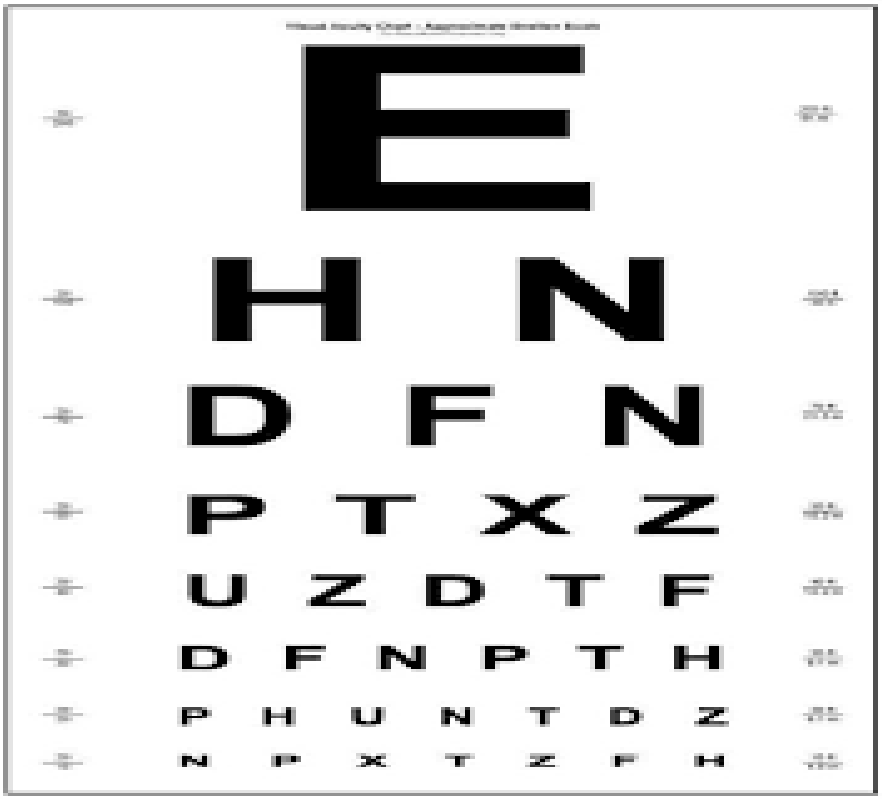

Figure-1: Snellen chart for visual acuity test

Variable		Frequency	Percent	Total
Age	12-30 31-50 51-70 >70	1 3 32 8	2.2 6.8 72.7 18.3	44
Gender	Male Female	23 21	52.3 47.7	44

Table-1: Demographic variables of this study

Type of Cataract		Right Eye visual acuity				
		1/10 or less	2/10-4/10	5/10-7/10	8/10-10/10	Total of cataract types
Nuclear	N	0	4	3	2	9
Cortical	N	0	1	0	0	1
Unknown*	N	2	2	8	4	16
Posterior sub-capsular	N	0	1	3	0	4
Mature	N	1	0	0	0	1
Nuclear+ Posterior sub-capsular+ cortical	N	1	1	0	1	3
Nuclear+ Posterior sub-capsular	N	1	6	1	0	8
Total of VA	**N**	**5**	**15**	**15**	**7**	**42**

Table-2: Visual acuity results in different types of cataract in the right eye of all patients

* These cataracts' types were missing from the records but their visual acuity test results were available.

Type of Cataract		Left Eye visual acuity				
		1 /10or less	2/10-4/10	5/10-7/10	8/10-10/10	Total of cataract types
Nuclear	N	0	4	4	0	8
Cortical	N	0	0	0	1	1
Unknown*	N	1	1	0	2	4
Posterior sub-capsular	N	1	3	3	1	8
Mature	N	2	0	0	0	2
Nuclear + cortical	N	1	2	1	1	5
Nuclear+ Posterior sub- capsular+ cortical	N	0	1	2	0	3
Nuclear+ Posterior sub- capsular	N	4	5	2	2	13
Total of VA	**N**	**9**	**16**	**12**	**7**	**44**

Table-3: Visual acuity results in different types of cataract in the left eye of all patients

* These cataracts' types were not found in the records but their visual acuity results were available.