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Research Article

**VISUAL RESULTS AFTER PHACOEMULSIFICATION
SURGERY WITH IMPLANTATION OF INTRAOCULAR LENS
IN THE PATIENTS WITH DIABETES OR WITHOUT
DIABETES**¹Dr Zafar Iqbal, ¹Dr Maisa Al Sweilem, ²Dr Aswad Ahmed, ¹Dr Sidra Zafar Iqbal,³Dr Muhammad Saad Ullah¹Alshifa Eye Hospital Sukkur²Isra University³Teaching Hospital D.G. Khan Medical College D.G. Khan**Abstract:**

Objective: This research work aimed to provide a comparison of the phacoemulsification surgical intervention with the IOL (Intraocular Lens) in the patients suffering from diabetes or without this very disease at follow up end.

Methodology: This study was an observational research work. The ethical committee of Alshifa Eye Hospital Sukkur gave the permission to conduct this research work. Total 80 patients suffering from cataract of single eye were the part of this research work. We divided the patients into 2 groups. Group-A contained 40 patients suffering from diabetes and Group-B contained 40 non-diabetic patients of cataract we included the patients with at least 30 year of age in both groups. Patients present with the small size pupil, PES (Pseudo Exfoliation Syndrome), DR (Diabetic Retinopathy) and strong past history of the uveitis, macular degeneration and glaucoma were not the part of this research work. SPSS V.20 was in use for the statistical analysis of the collected information.

Results: BVCA (best corrected visual-acuity) in the patients of Group-A improved from 0.7928 ± 0.1608 Log-MAR before surgery to 0.1628 ± 0.1228 after the duration of 6 months after the surgery. The outcome in the patients of Group-B was 0.440 ± 0.108 & 0.078 ± 0.0718 Log-Mar. considering the standard of World Health Organization, 85.48% patients of Group-A & 90.0% patients of Group-B obtained the normal vision on the very first day after the surgery. Remaining 10.48% patients of Group-A and 6.0% of Group-B obtained the vision of moderate level on the very first day after the surgery and obtained the normal vision within one week after the surgery.

Conclusion: Visual results in the diabetics after the surgical intervention of phacoemulsification with IOL implantation are almost as good as in the patients of Group-B if they are present with no retinopathy and they have excellent control on glucose level.

KEYWORDS: Intraocular Lens, Glaucoma, Diabetic Retinopathy, Phacoemulsification, Retinopathy, Cataract.

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INTRODUCTION:

About 51.0% blindness in our country Pakistan is the outcome of the cataract. There is very high risk for the development of cataract in the patients suffering from diabetes in comparison with the patients with no diabetes. There is more need of the cataract surgeries in the patients of diabetes. This surgery in the patients of diabetes makes the visual acuity better as well as it allows the evaluation and therapy of the retinopathy. Surgeries of cataract conducted at very early stage in the patients of diabetes in the countries which are developed to allow the identification and therapy for maculopathy and retinopathy. There are many new surgical methods which have made the surgery of cataract very safe and secure but due to some clinical issues in the patients of diabetes, the visual results in the patients of diabetes are not good enough as compared to the patients with no diabetes. There are more chances of complication during surgery or after surgery accountable for adverse results. The progress of retinopathy is very rapid in the patients of diabetes after the surgery of cataract and rubeosis can be the result of the ruptured capsule. There is a requirement of the careful follow-up and timely treatment with laser.

This research work carried out to conclude the results of cataract surgery by our specialists with the utilization of phacoemulsification with implantation of IOL in the patients of diabetes with no diabetic retinopathy in comparison with the patients without diabetes.

METHODOLOGY:

This research work was an observational study. We separated the patients into 2 groups, Group-A contained 40 patients of cataract as well as diabetes and Group-B contained 40 patients of cataract with no diabetes. All the patients of both groups were suffering from the cataract of single eye. Non-probability sampling method was in use for the selection of the patients. The inclusion standard was the patients visiting OPD from June 2017 to November 2018, suffering from diabetes or without diabetes having the age of equal or greater than 30 years, regardless of gender, religion and profession. All the patients present with the pupil of very small size, MD, previous uveitis history, PES and DR got

exclusion from this research work. We used the charts of Log-MAR for recording the vision acuity of the patients because these charts are the golden standard in the medical field for the measurement of the visual acuity. The vision acuity with the chart of Snellen at six meters (6/6), at 20.0 feet as 20/20, 1.0 vision in decimal charts and 0.0 Log-MAR are equal to each other.

We carried out the grouping of visual acuity into 3 groups as normal, moderate and adverse vision as provided by the ICO (International Council of Ophthalmology). On the very first visit before the surgery, we informed all the patients about the purpose of this very research work. We took the BCVA on the chart of Log-MAR and kept in records. We carried out the dilated Fundus assessment and we recorded the findings on a Performa. We applied no suture during surgery. Only one consultant carried out the all surgeries. We gave no antibiotic to any patient. We gave the after surgery topical Dexamethasone 0.10% and eye drops Moxifloxacin, 8 times in a day for complete one week. All the patients continued Dexamethasone drops 0.10% 4 times in a day for complete 6 weeks. We carried out the follow up of the patients on regular basis. SPSS V.20 was in use for the statistical analysis of the collected information. Average and SD values used to represent the continuous variables. We calculated the percentages for the representation of the categorical variables. T test was in use to determine the comparison of visual acuity among both groups. P value of less than 0.50 was the significant.

RESULTS:

There were total 80 patients with cataract of single eye were the part of this research work. 40 patients were in the Group-A (patients of diabetes) and 40 patients were in Group-B (patients of cataract with no diabetes). The average BCVA before surgery in Group-A was 0.608 ± 0.160 (6.0/38.0 Snellen's) & in Group-B was 0.440 ± 0.108 (6.0/24.0 Snellen's). After 6 months of surgery, there was an improvement in BCVA to 0.160 ± 0.120 (6.0/7.5 Snellen's) in the patients of group-A and to 0.060 ± 0.8 (6.0/6.0 Snellen's) in the patients of Group-B (Table-1).

BCVA	Persons with diabetes		Persons without diabetes		P-value
	Mean \pm SD		Mean \pm SD		
Pre-op BCVA	0.79 \pm 0.16		0.64 \pm 0.29		-
1st Day	0.25 \pm 0.17		0.15 \pm 0.11		0.0108
1st week	0.21 \pm 0.13		0.12 \pm 0.11		0.0038
6th week	0.15 \pm 0.11		0.06 \pm 0.7		0
6th months	0.16 \pm 0.12		0.06 \pm 0.8		0.0008

There was achievement of normal vision in 85.48% patients of Group-A and moderate vision in 10.48% on the very 1st day after the surgery. After the complete one week of surgery, all these patients obtained normal vision. While 90.0% patients of Group-B obtained normal vision on 1st day after surgery and 6.0% patients obtained the moderate vision. The patients of both group groups achieved the normal vision by the end of this research work (Table-2 and Table-3).

Vision Category Snellen = Log Mar	Pre BCVA		1st day BCVA		6th Weeks BCVA		6th months BCVA	
	No	Percent	No	Percent	No	Percent	No	Percent
Poor vision < 6/60 = > 1.1	9.00	20.88	0	0	0	0	0	0
Moderate Vision 6/24 to 6/60 = 0.6 to 1	31.00	66.78	4.00	10.3	0	0	0	0
Normal Vision >6/18 = 0 to 0.5	2.00	6.28	40.00	85.48	46.00	100.00	46.00	100.00

Vision Category Snellen = Log Mar	Pre BCVA		1st day BCVA		6th Weeks BCVA		6th months BCVA	
	No	Percent	No	Percent	No	Percent	No	Percent
Poor vision < 6/60 = > 1.1	2.00	4.50	0	0	0	0	0	0
Moderate Vision 6/24 to 6/60 = 0.6 to 1	26.00	63.60	2.00	6.00	0	0	0	0
Normal Vision >6/18 = 0 to 0.5	12.00	29.78	38.00	90.00	42.00	100.00	42.00	100.00

DISCUSSION:

The results of this research work discovered that 85.48% patients of diabetes were present with the normal vision on the very 1st day after the surgery in comparison of the 90.0% patients of Group-B. The remaining patients in both groups were present with the moderate vision; that moderate vision improved to normal vision after one week of surgery in both groups. Sir Agha Khan University stated that 91.28% eyes after surgery were present with the normal vision whereas 2.38% and 2.18% eyes were present with the moderate and adverse vision correspondingly. Already existing diseases were responsible for the 91.88% cases of the moderate or adverse outcome of vision. One other research work

conducted in Peshawar concluded the best visual results in 86.28%, moderate in 6.28% and adverse in 3.28% patients. The most important causes for the adverse visual results were diabetic retinopathy as 40.78% and the loss of vision related to glaucoma as 17%.

Straatsma BR discovered no significant disparity of complications in the patients of diabetes or without diabetes during surgery or after surgery. Mitra considered the before surgery retinopathy and surgical intervention by unskilled are the most significant factors in the development of the retinopathy after the surgery as well as outcomes regardless of the method used for surgery. Calvin

Sze-un stated that VA improvement by a mean 2 lines for the patients of both groups, or with the DR but no previous treatment of laser. There was no evidence of improvement for the patients who were present with the DR before surgery and treatment by laser. These research works display that if the eye of the diabetic patient is present with no retinopathy, controlled glucose level and surgery performed by a skillful specialist, the results of the complications are comparable with the patients having no diabetes. This current research work displayed better results in the patients of diabetes that were present with no retinopathy before surgery and had the good control on the glucose level of blood and operated by a skillful experienced person.

CONCLUSION:

The visual acuity in the patients of diabetes after the phacoemulsification surgery with the implantation of IOL is much comparable with the outcome in the patients of cataract with no diabetes if the patients of diabetes are present without retinopathy & have better control of glucose level.

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