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**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1239864>Available online at: <http://www.iajps.com>**Research Article****COMPARISON OF POST OP ASTIGMATISM AFTER
SUTURELESS CATARACT EXTRACTION SURGERY WITH
INCISION OF 3.5MM VERSES 6MM USING SURGICAL DATA****Dr. Muhammad Shahzeb Aslam**

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Abstract:

Background: Less instrumental expenses and disposability of small and big incision cataract surgery is beneficial. At point it appears a better and suitable treatment for advanced and mature cataract. Superiority declaration of surgically induced astigmatism (SIA) has therefore become a public health problem, and SIA analysis therefore important as its other procedures are. Such kind of studies like present is limited in Pakistan; therefore, we designed this study with the aim to compare the post op SIA with suture less 3.5mm (Phacoemulsification) & 6 mm incision surgery that is SICS (Small Incision Cataract Surgery).

Methods: Study design: Randomized Controlled Trial. **Setting:** LRBT free eye care hospital Chiniot center. **Duration:** 6 months' duration. **Procedure:** Post-Operative cataract patients were assessed for the astigmatism and surgical efficacy and related adverse events after suture less cataract extraction by means of, a) with incision size 6 mm or more (SICS) b) with incision size 3.5 mm or more (Phaco). The exclusion criteria include all patients with renal failure, past surgical history and heart disease and all other eye diseases whereas all the patients of both genders above 18 years of age with suture less cataract extraction surgery were included.

Results: The records of total 140 patients were retrieved via hospital record system. The mean age of the patients was 54 ± 8.9 with range 18-60. 25 (31.3%) of the patient were in the age category of 36 to 45. The visual activity was quantified as zero when it was <1/60 to PL+, as 1 when it is less than 3/60 to 1/60, as 2 when it is less than 6/60 to 3/60, as 3 when it is Less than 6/18 to 6/60 and 4 when it is 6/6 to 6/18. With repeated visits post operatively the uncorrected visual acuity has increased and the maximum of the increase was observed in group 2 patients with 3.5 mm incision.

Conclusion: We may conclude that SIA is less likely to be occurring in the suture less 3.5mm surgery. However, 6mm SICS is more cost effective.

Key words: Cataract, surgically induced astigmatism (SIA), suture less surgery SICS (Small incision Cataract Surgery), Phaco (Phacoemulsification)

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INTRODUCTION:

Cataract is the leading cause of blindness in the world. In developing countries like India almost 12.5 million blind people observed in various studies and 60% to 80% were with the cause of cataract. [1,2] Addition to the foresaid numbers accumulation of 3.8 million reported yearly with blindness whereas 2.7 million were treated yearly with cataract surgery. [3] By the invention of phacoemulsification, the cataract surgery is limited to day care surgery only. Although phacoemulsification is expensive and only opted in big cities and institutions. In the sense suture less cataract surgery that is SICS becomes a ray of hope as a treatment of cataract burden in developing countries. [1-4]

Less instrumental expenses or cost and disposability of small and big incision cataract surgery is a big benefit for the patients. [5,6] At point it appears a better and suitable treatment for advanced and mature cataract. [7] Once the surgery completed the scleral tunnel usually sealed without statures or may be some time with sutures with different way, [8]

The cataract surgery now a days becoming a refractive surgery and yearly the refractive procedures increasing worldwide. Superiority declaration of surgically induced astigmatism (SIA) and other refractive components has therefore become a public health problem, and SIA analysis therefore important as its other procedures are. Such kind of studies like present is limited in Pakistan; therefore, we designed this study with the aim to compare the post op SIA with suture less 3.5mm and 6 mm incision surgery.

MATERIAL AND METHODS:

The study design opted for the current research was observational retrospective, where the ophthalmic cataract patients were assessed for the astigmatism

and surgical efficacy and related adverse events after suture less cataract extraction by means of, a) with 6mm of incision b) with 3.5mm incision. The study duration was of six months. The venue of the study was LRBT free eye care hospital, Chiniot center (Secondary Health Care Center). The exclusion criteria include all patients with renal failure, past surgical history and heart disease and all other eye diseases whereas all the patients of both genders above 18 years of age with suture less cataract extraction surgery were included. The data was retrieved for the patients who were enrolled for admission in ward a day before surgery, detailed demographic and diagnostic history was also noted through anterior segmental examination. Data related to intra ocular pressure was also noted. Findings related to scan unit and intraocular lens power were also taken into consideration. An informed consent was also taken from the patients or attendant of the patient. Ethical consideration was taken in to account by taking approval Hospital Ethical Committee.

Statistical analysis:

All the collected data was stored electronically & analyzed later by using SPSS version 20. Descriptive statistics were applied to calculate mean and standard deviation. Frequency distribution and percentages were calculated for qualitative variables like gender. Over all P values <0.05 was considered statistically significant.

RESULTS:

The records of total 140 patients were retrieved via hospital record system. The mean age of the patients was 54±8.9 with range 18-60. About 25 (31.3%) of patient were in the age category of 36 to 45. Whereas 15 (18.7%) belong to 18-35 and 40(50%) were above and equal 45 years of age. 52(65%) of the patients were male and 28 (35%) were females. More of the patients 'characteristics were given in table 1.

Table 1: The baseline characteristics of HE patients.

Characteristic	n(%)
n	140
Mean Age +SD	54±8.4
Male to female Ratio	2:01
Illiterate	3(3.7%)
Up to matriculation	65(81.3%)
Above Matriculation	12(15%)
Low Socioeconomic Status	60%
Middle Socioeconomic Status	31%
High socioeconomic level	9%

The visual activity was quantified as zero when it was <1/60 to PL+, as 1 when it is less than 3/60 to 1/60, As 2 when it is less than 6/60 to 3/60, as 3 when it is Less than 6/18 to 6/60 and 4 when it is 6/6 to 6/18. With repeated visits post operatively the uncorrected visual acuity has increased and the maximum of the increase was observed in group 2 patients with 3.5 mm incision. More of the detailed summary is given in table 2.

Table 2: Detailed summary of UCVA& BCVA

Post op Visits	UCVA		P-value	BCVA		P-value
	Group A	Group B		Group A	Group B	
I	2.4 ± 1.1	2.6 ± 1.0	0.54	2.34± 1.1	2.72±1.0	0.21
II	2.70 ±1.2	3.3 ± 0.45	0.25	3.21± 1.2	3.77±0.20	0.3
III	3.26 ± 1.1	3.7 ± 0.42	0.321	3.50± 1.13	3.8±.2	0.5
IV	3.20 ± 0.45	3.69 ± 0.46	0.29	4± 0	3.81±.24	0.46

* UCVA: Uncorrected visual acuity **BCVA best corrected visual acuity

The comparative summary of SIA can be seen in the figure 1.

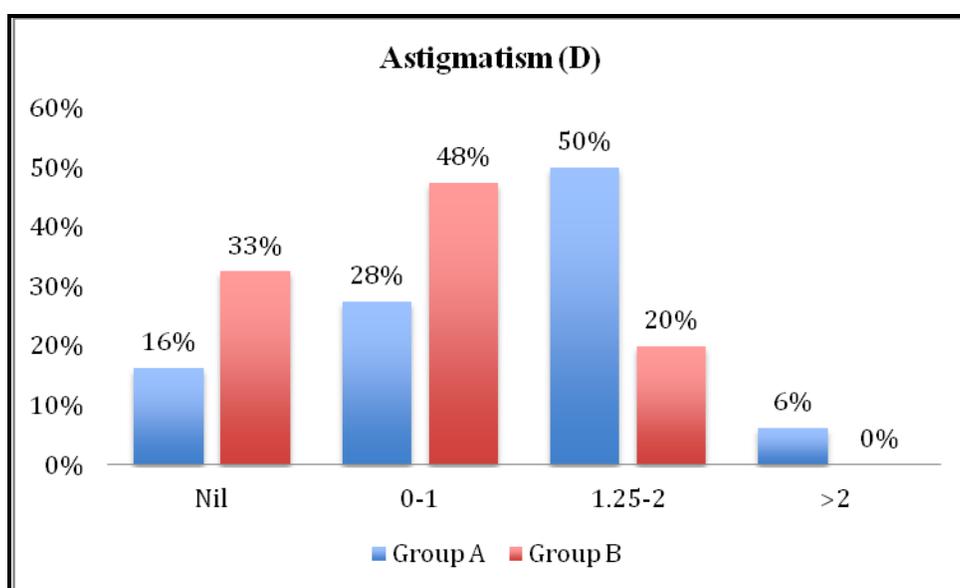


Figure 1: Mean SIA in different incision groups at 4th week postoperatively

DISCUSSION:

This study was conducted to compare the SIA with suture less 3.5mm and 6 mm incision surgery (SICS). We observed in our study that SIA is less likely to appear in group 2 (incision size 3.5mm i.e. phacoemulsification cataract surgery). The visual rehabilitation was observed earlier with many published studies. [2, 3] The restoration is attributable to less tenderness and low SIA. We also observed the patients with fewer complaints like pain, redness or foreign body sensation. In one of the study conducted by Zawar et al they found that 93.4% of eyes achieved a final BCVA better than 6/12 at 6wk postoperatively. [1]

Few other studies also claimed the earlier said achievement. In our study, Group B has 33% of the patient with no postoperative astigmatic error whereas SIA upto 1D was majorly observed in this group. The findings of our study is supported by the study of Renderi et al. In the present study, in 3.5 mm incision group, maximum patients showed SIA of less than 1 D. Another study with central 3.5 mm incision has reported SIA of less than 1 D in only 1/4patient, with maximum patients had SIA between 1.25-2 D. [28] The findings of our study reported the group B with minimum SIA, hence the surgical procedure is better than opted in group A. This study is first of its kind in the area, as work is not much available with a comparative better option. The

limitations of study may include the less sample size and lack of elongated follow up.

CONCLUSION:

We may conclude that SIA is less likely to be occurring in the suture less 3.5mm surgery. However, 6mm SICS is more cost effective than 3.5mm phacoemulsification cataract surgery because we live in developing country. Moreover, the results were insignificant so we can apply 6mm in future in such peripheral areas like Chiniot.

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