

# Comparison of the effect of 2 mL versus 3 mL sub-Tenon xylocaine injection on akinesia and analgesia in cataract patients at the University of Ilorin Teaching Hospital, Nigeria

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## Abstract:

**PURPOSE:** Sub-Tenon anesthesia is a form of local anesthetic techniques used in ophthalmic procedures, especially in cataract surgery. Few studies in our environment have reported the effects of sub-Tenon anesthesia on akinesia and analgesia as well as optimum volumes of anesthetic agents that are required for effective analgesia and akinesia. The objective of this study is to determine and compare the level of analgesia and akinesia and the effect of ocular compressions after sub-Tenon injection of 2 mL versus 3 mL of xylocaine among patients booked for cataract surgery in the University of Ilorin Teaching Hospital (UITH).

**METHODS:** A cross-sectional comparative study among cataract patients booked for surgery in the Department of Ophthalmology at UITH was carried out from March 2017 to August 2017. A total of 200 cataract patients that met the inclusion criteria were recruited into the study over 6 months. Lists of cataract patients booked for surgery formed the sampling frame. Questionnaires were administered to obtain information on sociodemographic, ocular symptoms, and other histories. Visual acuity was checked, and ocular examination was done with a pen-torch, ophthalmoscope, and slit-lamp examination with 78D. Tonometry and optic nerve assessments were done to exclude any patient with preexisting glaucoma or suspicious disc. About 200 patients were randomly allocated into one of two volume groups (Group 1 had 2 mL sub-Tenon xylocaine injection whereas Group 2 had 3 mL); level of analgesia and akinesia was checked 12 min and 15 min, respectively.

**RESULTS:** The age range was 20–107 years; mean age for Group 1 was  $63.8 \pm 12.64$ , whereas the mean age of Group 2 was  $64.14 \pm 14.14$ . There was a slight female preponderance given a M:f of 1:1.4 and more than half of the patients presented with right eye (RE) cataract. Levels of analgesia 12 min after sub-Tenon injections in both groups were similar. However, two patients were found to have severe pain in Group 1, and no patients had severe pain in Group 2. The level of akinesia which was assessed 15 min after injection in both groups was found to be significantly better in Group 2.

**CONCLUSION:** There was a slight female preponderance with about two-third of the total patients being female and the percentage of females who had no pain was more than the male, more than 50% of the patients had RE cataracts. Sub-Tenon anesthesia whether with 2 mL or 3 mL led to a statistically significant rise in intraorbital pressure (IOP); however, with ocular compression, the IOP was found to decrease below the preinjection pressure in both groups. Levels of analgesia were similar in the two groups, whereas akinesia was statistically better in the group that had 3 mL injection.

## Keywords:

Akinesia, analgesia, cataract, sub-Tenon anesthesia

## INTRODUCTION

Cataract surgery is the most commonly performed operation by ophthalmologists all over the world,<sup>[1,2]</sup> estimated to be more than 20 million in the year 2015.<sup>[3,4]</sup> Advances in cataract

surgery include the use of a shorter-acting anesthetic agent with less invasive methods of administration.<sup>[5]</sup>

Anesthetic techniques used for cataract surgery include peribulbar, retrobulbar, topical, subconjunctival, intracameral, and sub-Tenon's

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anesthesia.<sup>[6-8]</sup> Until the 1990s, the standard techniques of local anesthesia for cataract surgery were retrobulbar and peribulbar anesthesia.<sup>[9]</sup> These methods give good akinesia and analgesia, but the use of a sharp needle carries the risk of serious complications. The introduction of sub-Tenon anaesthesia which also provides similar akinesia and analgesia but with less risk of complications compared with the retrobulbar technique. Many studies have advanced sub-Tenon's block as a relatively safe technique,<sup>[10-12]</sup> and it has become increasingly popular worldwide due to its relative safety and effectiveness.<sup>[8,10,12,13]</sup>

There is a valve effect that causes some of the injected anesthetic to spill from the incision. This means more volume is usually required to achieve the desired effect.<sup>[14,15]</sup> Studies in the literature largely failed to report the effects of the volume of sub-Tenon anesthetic agents on akinesia and analgesia. This volume effect is especially important because of the increase in intraorbital pressure created by an excessive increase in the volume of anesthetic agents used in blocking patients during intraocular surgery. Hence, this study compares the effects of 2 mL versus 3 mL volumes of anesthetic agents on akinesia and analgesia, in a bid to establish the preclinical implications of increasing anesthetic agent volume in a sub-Tenon's procedure, while still maintaining the level of akinesia and analgesia.

## METHODS

Ethical approval for the study was obtained from the Ethics and Research Committee of the University of Ilorin Teaching Hospital (UITH). Informed consent obtained and questionnaires filled [Appendix 1] by the study participants. Confidentiality also maintained and the study respected all other Helsinki principles of research.

The study was a cross-sectional comparative study carried out between March and August 2017 on all eligible patients with operable cataracts attending UITH, Department of Ophthalmology.

The required sample size was determined using the statistical formula for estimating the minimum sample size for a comparative study as suggested by Zhong.<sup>[16]</sup> Using this formula, a sample size of 200 was arrived upon.

All consecutive adult patients aged 18 years and above with uncomplicated cataracts booked for small incision cataract surgery with posterior chamber intraocular lens implantation (which are the inclusion criteria for the study) were randomly [Appendix 2] separated into two volume groups (Group 1 received 2 mL and Group 2 received 3 mL of 2% plain xylocaine). Patients with previous intraocular injury, surgery, or inflammation, glaucoma patients, patients with dementia or deafness, patients with eye movement disorders or epileptic disorders, and patients undergoing combined surgeries were excluded.

The theater nurse informed the researcher a few minutes to administering the sub-Tenon injection, what group each patient belonged, thereby informing the volume of anesthetic administered.

## Technique in sub-Tenon anesthesia administration

With the patient in the supine position, a lid speculum was inserted and a small nick incision was made in the conjunctiva and Tenons capsule about 5 mm from the limbus in the inferonasal quadrant using curved Westcott scissors, then sub-Tenon's cannula was positioned in the sub-Tenon space to inject 2% plain xylocaine (without adrenaline to avoid the vasoconstrictive effect of adrenaline) volume That Has Been Randomly assigned to the patient. The eyelid was closed and covered with a sterile gauze using table of random numbers [Appendix 2].

The level of analgesia was graded 12 min after administering the sub-Tenon's block using the Verbal Rating Scale (VRS).<sup>[5]</sup> Before deploying it, the scale was translated into Yoruba language – the local language of the populace, to surmount language barriers. Patients were encouraged to inform the surgeon about pain, while the surgery was ongoing. The translated VRS adopted is presented in Table 1.

The level of motor akinesia was evaluated following an ocular massage at about 15 min after injection of sub-Tenon anesthesia before the surgery commenced. Patients were instructed to look in various directions of gaze. Globe movement was scored according to the method described by Nicoll *et al.*<sup>[17]</sup> and Iganga *et al.*<sup>[18]</sup> A schematic representation of the research procedure is provided in Figure 1. All surgeries were performed by a single surgeon.

Data obtained were entered into a database and analyzed using the IBM®SPSS 21(Chicago,IL) is a Statistical Package for the Social Science (SPSS) version 21. Mean values as well as standard deviations (SDs) were generated to describe test statistical variability between the two groups. Inferential statistics was also conducted using paired *t*-test and Student's *t*-test for the within-group (repeated) and between-group outcome measures. Generally, the difference between analgesia quantified with the VRS obtained from the 2 mL anesthetic group was compared with that obtained from the 3 mL anesthetic group. Akinesia was also compared in this manner, with statistical significance set at  $P \leq 0.05$ .

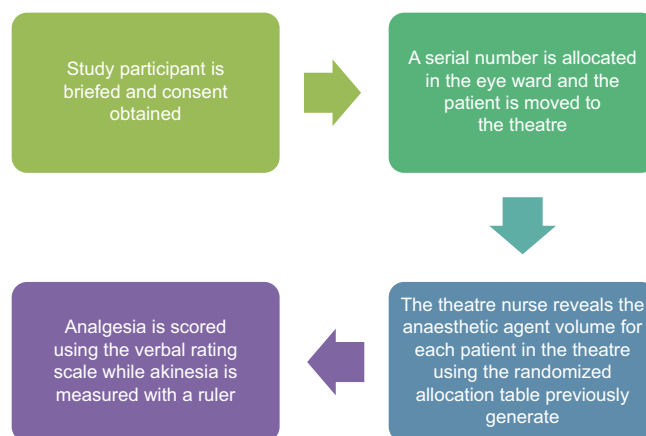


Figure 1: Study flow chart

## RESULTS

Two hundred patients with age 20–107 years, with the 51–80 years age group being most represented (79.5%). The mean age of patients in Group 1 (2 mL anesthetic) was 63.8 years (SD = 12.64) and that in Group 2 (3 mL anesthetic) was 64.14 (SD = 14.14). The difference in the mean ages of both groups was not statistically significant ( $P = 0.858$ ). The demographic data of participants are presented in Table 2 and Figures 2, 3. There were more females than males with a male:female ratio of 1:1.4. Furthermore, more than half of the patients had both secondary and tertiary level of education.

Close to half of the patients presented with visual acuity (VA) of hand motion preoperatively. 1<sup>st</sup> day postoperative, about 76% of patients had VA of 6/18 (0.5) and better. Few patients had minimal subconjunctival hemorrhage and chemosis at the injection site, no patients had anesthesia-related complications as shown in Table 3.

Ocular motility was full in all directions of gaze in all the eyes before sub-Tenon injection was administered. Table 4 shows that 15 min after sub-Tenon injection of 2% xylocaine, irrespective of the volume used, complete akinesia (score of 0) was only achieved in 26 (3.3%) of 800 recti muscles. Most of the recti muscle retained some motility. Akinesia was, however, mostly found in medial recti in 18 eyes. Specifically, motility of 1 was predominant (58.6%) among all recti, especially those that received 3 mL, the vertical recti muscles being the most affected compared to the horizontal recti which had almost equal number in motility 1 and 2. Motility 2 was found in more than half of the recti muscles that received 2 mL of the anesthetic (56.7%) compared to 43.2% in the group that received 3 mL. This proffers a plausible basis for the significantly better akinesia ( $P = 0.012$ ) observed in the 3 mL group.

Figure 4 shows that more than half of the patients that had 3 mL injection were found to have a better level of akinesia than the 2 mL group. This was found to be statistically significant ( $P = 0.032$ ).

The akinesia scoring system used:

0 = no recti movement; 1 = movement of  $\leq 2$  mm; 2 = movement of  $> 2$  mm.

The overall movement of the four recti muscles checked were grouped into:

0 = no movement; 8 = complete movement.

0–4 = good akinesia;  $> 5$  = poor akinesia.

Figure 5 shows the level of analgesia was observed to be good in both groups as 90 (45%) patients had no pain, 101 (50.5%) patients experienced mild pain, 7 (3.5%) patients had moderate pain, and 2 (1.0%) patients had severe pain in both groups. Notably, the two patients that had severe pain received 2 mL anesthetic. However, while no patients who received 3 mL were observed to have experienced severe pain, the difference

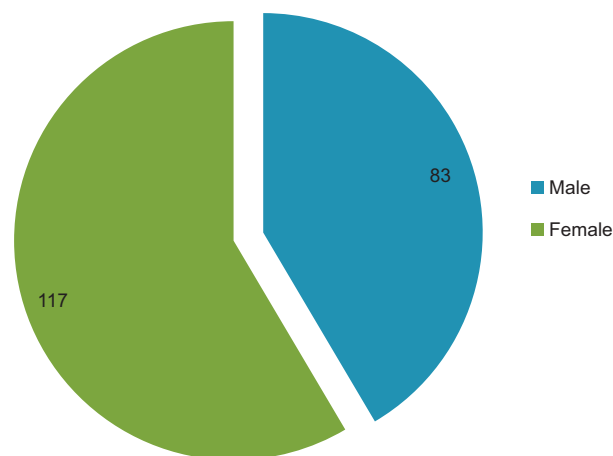


Figure 2: Distribution of study participants by gender

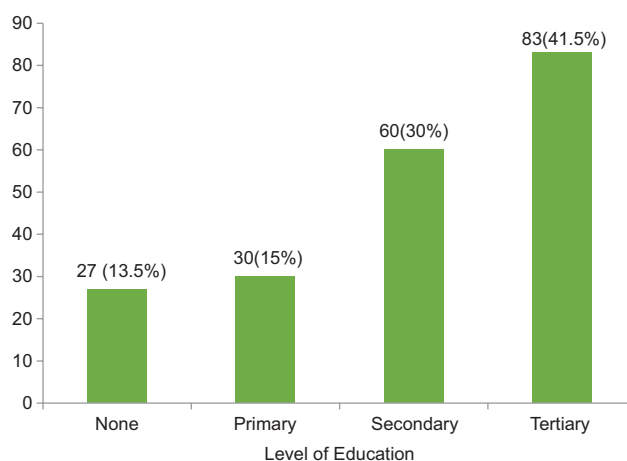


Figure 3: Level of education of patients

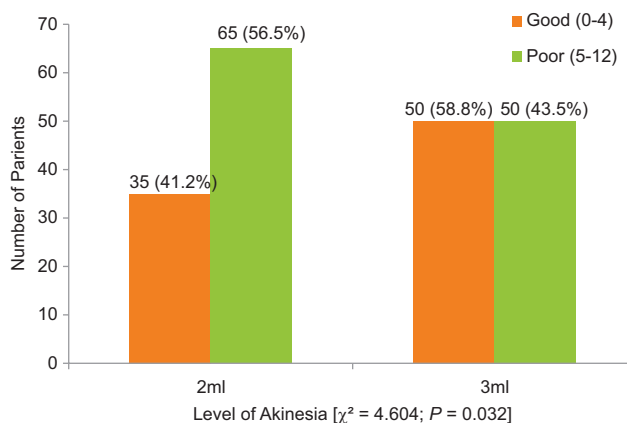
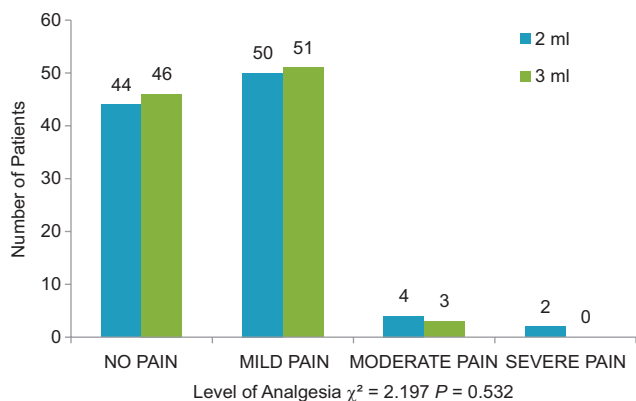


Figure 4: Level of akinesia in each group

in the level of analgesia in both groups was not statistically significant ( $P = 0.532$ ).

On dichotomizing the analgesia (pain and no pain), there was no statistically significant correlation between the level of analgesia and age group. However, there was a statistically



**Figure 5:** Overall level of analgesia among operated patients

significant difference ( $P = 0.007$ ) in analgesia observed between both genders; more male participants (66.3%) experienced pain than female (47.0%).

## DISCUSSION

Sub-Tenon anesthesia is a simple, safe, and effective method of anesthesia for ophthalmic procedures and its use in ophthalmology has increased greatly in many centers. It was first described by Stevens<sup>[12]</sup> in 1992 and since then, it's use has been increasingly popular. It involves transconjunctival injection of anesthetic agents into the potential sub-Tenon's space.

Numerous studies have shown that a significant level of analgesia and akinesia could be achieved with the use of sub-Tenon's anesthesia, leading to more favorable surgical conditions and enhanced patient and surgeon satisfaction.<sup>[19,20]</sup> However, there are great differences in the methodology used, especially in relation to the volume of local anesthetic agents injected.

The difference in the mean ages of both groups was not statistically significant ( $P = 0.858$ ), demonstrating an absence of age bias in the randomization exercise. Similarly, there is no statistically significant difference in the demographic representation within both groups, and group equivalence was maintained.

In this study, the effects of two doses of sub-Tenon's injection of 2% xylocaine on akinesia and analgesia were compared using cataract patients booked for surgery. The study participants had a slight female preponderance with a male-to-female ratio of 1:1.4 with the age group of 51–80 years being most represented. This is similar to earlier studies that also recorded higher female than male cataract surgery patients.<sup>[6,21-23]</sup> This finding could be due to gender-based differences in health-seeking behaviors.<sup>[24]</sup> It could also expose a more fundamental disparity in cataract prevalence between males and females. Klein, Klein, and Linton also reported that more women were affected by cataracts, especially in the age group of 75 years and above.<sup>[25]</sup>

**Table 1: Verbal Rating Scale**

English	Yoruba	Scale
No pain	KOSI IRORA	0
Mild pain	IRORA DIE	1
Moderate pain	IRORA PUPO	2
Severe pain	IRORA PUPO GAN	3
Excruciating pain	IRORA TO KOJA IFARADA	4

**Table 2: Sociodemographic characteristics of the two groups**

Variables	2 mL group	3 mL group	Total	$\chi^2/t$ -test	P
<b>Age group</b>					
≤40	4 (40.0)	6 (60.0)	10 (5.0)	2.174	0.825
41–50	11 (64.7)	6 (35.3)	17 (8.5)		
51–60	27 (49.1)	28 (50.9)	55 (27.5)		
61–70	31 (50.0)	31 (50.0)	62 (31.0)		
71–80	21 (50.0)	21 (50.0)	42 (21.0)		
≥80	6 (42.9)	8 (57.1)	14 (7.0)		
Mean±SD	63.8±12.64	64.14±14.14		-0.179	0.858
<b>Marital status</b>					
Single	2 (50.0)	2 (50.0)	4 (2.0)	1.206	0.752
Married	83 (49.7)	84 (50.3)	167 (83.5)		
Separated	6 (66.7)	3	9 (4.5)		
Widow	9 (45.0)	11 (55.0)	20 (10.0)		
<b>Occupation</b>					
Civil servant	40 (55.6)	32 (44.4)	72 (36)	2.301	0.806
Artisan	18 (50.0)	18 (50.0)	36 (18)		
Student	2 (40.0)	3 (60.0)	5 (2.5)		
Trader	24 (45.3)	29 (54.7)	53 (26.5)		
Farmer	11 (52.4)	10 (47.6)	21 (10.5)		
Others	5 (38.5)	8 (61.5)	13 (6.5)		

t: Student's t-test. SD: Standard deviation

Mönestam and Wachtmeister also reported higher incidences of cataracts in women than men in all age groups except in women of 95 years and above.<sup>[26]</sup>

Akinesia is variable and volume dependent; it is obtained by direct blockade of anterior motor nerve fibers as they enter the extraocular muscle.<sup>[27]</sup> Akinesia was noticed to be significantly better ( $P < 0.005$ ) in the group that received 3 mL xylocaine. The onset of akinesia was also observed to be directly related to the volume of anesthetic administered. This finding is in conformity with Kumar and Dodds<sup>[28]</sup> where patients who received 2 mL sub-Tenon's anesthetic injection required a top-up injection before adequate akinesia was achieved contrary to other groups that received higher volumes. Similarly, Fasih *et al.* used 2 mL sub-Tenon injection of anesthetic agent and reported inadequate akinesia in 12% of the patients.<sup>[29]</sup> Guise<sup>[30]</sup> also concluded in his study that the level of akinesia varied depending on the volume of anesthetic agents used. Sekundo *et al.*<sup>[31]</sup> reported that sub-Tenon's anesthesia provides a better intraoperative comfort and analgesia using 2 mL of injection in all their patients but poor akinesia. Howard<sup>[32]</sup> also showed in his study that sub-Tenon's anesthesia provides excellent analgesia but that the degree of akinesia is volume dependent. These findings largely correlate with the present study as the

**Table 3: Pre- and postoperative visual acuity of operated eyes**

Variables	Preoperative			1 <sup>st</sup> day-postoperative		
	RE (%)	LE (%)	Total (%)	RE (%)	LE (%)	Total (%)
VA (LogMAR)						
Light perception	16 (41.0)	23 (59.0)	39	-	-	-
Hand motion	82 (92.1)	8 (7.8)	90	-	-	-
Counting finger	1 (50.0)	0 (50.0)	1	-	-	-
1/60	6 (60.0)	4 (40.0)	10	-	-	-
5/60	1 (100.0)	0	1	-	-	-
6/60 (1.0)	47 (79.7)	12 (20.3)	59	6 (60.0)	4 (40.0)	10
6/36 (0.8)	-	-	-	9 (60.0)	6 (40.0)	15
6/24 (0.6)	-	-	-	12 (52.2)	11 (47.8)	23
6/18 (0.5)	-	-	-	41 (82.0)	9 (18.0)	50
6/9 (0.2)	-	-	-	51 (83.6)	10 (16.4)	61
6/6 (0.0)	-	-	-	34 (82.9)	7 (17.1)	41

VA: Visual acuity, RE: Right eye, LE: Left eye

**Table 4: Movement of recti muscles in both groups 15 min after sub-Tenon injection**

Rectus muscle movement	0 (%)	1 (%)	2 (%)	$\chi^2$	P
Medial rectus (mL)					
2	9 (9.0)	38 (38.0)	53 (53.0)	3.716	0.156
3	9 (9.0)	51 (51.0)	40 (40.0)		
Lateral rectus (mL)					
2	1 (1.0)	44 (44.0)	55 (55.0)	3.400	0.175
3	3 (3.0)	54 (54.0)	43 (43.0)		
Inferior rectus (mL)					
2	1 (1.0)	67 (67.0)	32 (32.0)	1.594	0.451
3	1 (1.0)	75 (75.0)	24 (24.0)		
Superior rectus (mL)					
2	1 (1.0)	66 (66.0)	33 (33.0)	1.561	0.458
3	1 (1.0)	74 (74.0)	25 (25.0)		
Total (mL)					
2	26	469	305		
3	12 (3.0)	215 (53.8)	173 (43.2)	8.908	0.012
3	14 (3.5)	254 (63.5)	132 (33.0)		

level of akinesia was noticed to significantly improve from 2 mL to 3 mL of the anesthetic.

A Cochrane review meta-analysis by Davison *et al.* showed that sub-Tenon anesthesia was said to be the anesthesia of choice that minimized overall pain perception and intraoperative complications.<sup>[33]</sup> Similarly, Bansal *et al.*<sup>[34]</sup> reported a mean visual analog pain score of 0 in 98% of the patients on administering 2 mL xylocaine. In contrast, 2% of the patients had a pain score of 1 in their study and the authors concluded that none of the patients had pain throughout the 25 min of surgery. Guise,<sup>[30]</sup> however, reported from his hospital-based study of 6000 patients who had sub-Tenon's block, that 7% of patients experienced more than mild pain during injection and 7% complained of pain during the surgery, and it was therefore concluded that sub-Tenon's block is usually associated with a minimal need for postoperative analgesia. It was also reported from their study that pain on injection can be reduced by good surface anesthesia, gentle insertion of cannula, and slow injection. Conversely, the present study shows no statistically significant difference in the level of analgesia between the

two groups ( $P > 0.05$ ) as most of the participants experienced no pain to mild pain, irrespective of the volume of anesthetic administered.

The satisfaction of patients mostly depends on the level of analgesia achieved during surgery, as well as visual outcomes. On the other hand, surgeons' satisfaction depends on levels of akinesia and analgesia, both of which result in absolute calmness and cooperation by the patients. In conclusion, the findings of this study demonstrated that akinesia is significantly better with 3 mL of xylocaine (compared to 2 mL), whereas both volumes provided a good level of analgesia. Thus, sub-Tenon injection of 3 mL of 2% xylocaine for cataract surgery has shown to provide superior akinesia and analgesia which promote patient and surgeon's satisfaction.

The limitation of the study was in the subjective nature of the VRS in grading the level of analgesia which might probably have introduced some bias into the results.

## CONCLUSION

The present study shows no significant difference in the level of analgesia between the two groups, however, the groups that had 3ml had a better akinesia compared to the group that had 2ml of xylocaine injection.

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## Conflicts of interest

There are no conflicts of interest.

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## APPENDICES

### Appendix 1: Study questionnaires

#### Section A: BIODATA S/N .....

1. Initials .....
2. Age (years).....
3. Sex: 1) Male 2) Female
4. Religion: 1) Islam 2) Christianity 3) Traditional 4) Others (specify).....
5. Level of Education: 1) No formal education 2) Arabic 3) Primary 4) JSSCE 5) SSCE  
6) Tertiary 7) Others (Specify).....
6. Marital Status: 1) Single 2) Married 3) Divorced 4) Separated 5) Widow 6)Widower
7. Occupation: 1) Civil servant 2) Professional 3) Artisan 4) Student 5) Trader 6) Farmer  
7) Others (specify).....
8. Tribe: 1) Hausa 2) Igbo 3) Yoruba 4) Others (specify).....

#### Section B: Ophthalmic history

1. Do you have complaints with your eyes? 1) Yes 2) No
2. Do you have cloudy of vision or blurred vision? 1) Yes 2) No
3. Have you received any treatment for your eyes in the past? 1) Yes 2) NO
4. Have you been counseled to have eye surgery in the past? 1) Yes 2) No
5. If yes to Q4, what type
6. Have you had any eye surgery in the past? 1) Yes 2) No
7. If yes to Q6, what type of eye surgery 1) Cataract 2) Lid surgery 3) Glaucoma  
4) Others (specify).....

#### Section C: Ocular examination findings

	RE	LE
Visual acuity unaided PH		
Globe		
Lid (blepharitis, dacryocystitis, trichiasis)		
Conjunctiva (hyperemia and discharge)		
Cornea (ulcers, dystrophies)		
Anterior chamber depth		
Pupil (reactivity)		
Lens morphology		
Fundus		

RE: Right eye, LE: Left eye

#### Intraocular pressure measurement

Eye	Preoperative IOP (mmHg)	5 min	After ocular compression

IOP: Intraocular pressure

#### Grading of motor Akinesia

Muscle	Excursion/movement
Medial rectus	
Lateral rectus	
Inferior rectus	
Superior rectus	

#### Verbal Rating Scale<sup>[35]</sup>

English	Yoruba	Score
No pain	KOSI IRORA	0
Mild pain	IRORA DIE	1
Moderate pain	IRORA PUPO	2
Severe pain	IRORA GA	3
Excruciating pain	IRORA TO KOJA IFARADA	4

**Appendix 2: Random allocation of the 2 volume groups**

<b>Consecutive number</b>	<b>Random allocation (mL)</b>
1.00	2
2.00	2
3.00	3
4.00	2
5.00	2
6.00	3
7.00	2
8.00	2
9.00	2
10.00	2
11.00	2
12.00	2
13.00	3
14.00	2
15.00	3
16.00	3
17.00	3
18.00	2
19.00	3
20.00	2
21.00	2
22.00	3
23.00	2
24.00	2
25.00	3
26.00	3
27.00	2
28.00	2
29.00	2
30.00	3
31.00	2
32.00	2
33.00	2
34.00	2
35.00	3
36.00	3
37.00	3
38.00	2
39.00	2
40.00	3
41.00	2
42.00	3
43.00	2
44.00	3
45.00	3
46.00	3
47.00	2
48.00	3
49.00	3
50.00	2
51.00	3
52.00	3
53.00	2
54.00	3
55.00	3
56.00	2

*Contd...***Appendix 2: Contd...**

<b>Consecutive number</b>	<b>Random allocation (mL)</b>
57.00	2
58.00	3
59.00	2
60.00	2
61.00	2
62.00	3
63.00	3
64.00	3
65.00	2
66.00	2
67.00	2
68.00	2
69.00	2
70.00	2
71.00	3
72.00	2
73.00	2
74.00	2
75.00	3
76.00	3
77.00	3
78.00	3
79.00	2
80.00	2
81.00	2
82.00	3
83.00	3
84.00	2
85.00	2
86.00	3
87.00	3
88.00	2
89.00	3
90.00	2
91.00	3
92.00	3
93.00	2
94.00	3
95.00	3
96.00	3
97.00	2
98.00	2
99.00	3
100.00	3
101.00	2
102.00	2
103.00	2
104.00	3
105.00	2
106.00	3
107.00	3
108.00	3
109.00	3
110.00	3
111.00	3
112.00	3

*Contd...*



**Appendix 2: Contd...**

<b>Consecutive number</b>	<b>Random allocation (mL)</b>
113.00	3
114.00	3
115.00	2
116.00	2
117.00	2
118.00	2
119.00	3
120.00	3
121.00	3
122.00	3
123.00	2
124.00	2
125.00	3
126.00	2
127.00	3
128.00	3
129.00	3
130.00	3
131.00	2
132.00	2
133.00	3
134.00	3
135.00	2
136.00	3
137.00	3
138.00	2
139.00	3
140.00	2
141.00	2
142.00	3
143.00	3
144.00	3
145.00	2
146.00	2
147.00	3
148.00	3
149.00	3
150.00	2
151.00	3
152.00	2
153.00	2
154.00	2
155.00	2
156.00	2
157.00	3
158.00	3
159.00	2
160.00	3
161.00	2
162.00	2
163.00	3
164.00	3
165.00	2
166.00	3
167.00	3
168.00	2

**Appendix 2: Contd...**

<b>Consecutive number</b>	<b>Random allocation (mL)</b>
169.00	2
170.00	3
171.00	2
172.00	3
173.00	2
174.00	2
175.00	2
176.00	3
177.00	3
178.00	2
179.00	2
180.00	2
181.00	2
182.00	2
183.00	2
184.00	3
185.00	3
186.00	3
187.00	3
188.00	2
189.00	2
190.00	3
191.00	3
192.00	3
193.00	3
194.00	2
195.00	3
196.00	2
197.00	3
198.00	2
199.00	2
200.00	2

*Contd...*