Evaluation Of Efficacy Of Intracameral Lidocaine And Tropicamide Injection In Manual Small Incision Cataract Surgery

Presenting Author: Dr. Ketaki Bhat

Co Author: Dr. Savni Dole

JMF'S ACPM Medical College and Hospital, Dhule

Introduction

- Cataract is the most prevalent cause of preventable blindness worldwide.
- Modern cataract surgery aims for-

  Better unaided visual acuity

  Rapid post-surgery recovery

  Minimal surgery-related complications.
- Most cataract surgeries performed under local anaesthesia either peribulbar or topical.

  But topical regimen is time-consuming, It might cause ocular surface, CVS effects in some cases.
- So, a combination of intracameral lignocaine hydrochloride and tropicamide can be considered as an alternative for cataract surgery.

Aims And Objectives

- To evaluate efficacy of intracameral lidocaine hydrochloride 1% and tropicamide injection 0.02% for anaesthesia and mydriasis in manual small-incision cataract surgery (MSICS) .
- To report any adverse drug reaction.

Material & Methods

- Design: Observational Prospective Study
- No. Of Cases: 32
- Age ranging from: 43- 78 years
- Duration: October 2021 to March 2022

Inclusion Criteria:

- Age group :40-75 years
- Both sexes
- NS II-III
- Pupil diameter >6 mm

Exclusion Criteria:

Patients with :

- Pseudoexfoliation
- History of uveitis
- Ocular trauma
- Recent ocular infections
- Allergy to Tropicamide
- Rigid pupil
- Senile miosis
- Glaucoma

Material And Methods

A

- Patient was not dilated before the surgery.
- Commercially available injection inj. Phenocaine plus 1 ml, a combination of phenyl epinephrine (0.31%), tropicamide (0.02%), and lidocaine (1%) was used and surgical steps were done using Zeiss Lumera 300 microscope.

B

- All the cases underwent MSICS by single surgeon and standard MSICS
- Through side port intracameral inj. Phenocaine plus 1 ml was injected in the anterior chamber(AC).
- Therapy was given via intracameral route prior to capsulorrhexis

C

- Pupil size measured at all stages of surgery. Pupillary dilatation was noted in millimetres at five specific stages.
- Patients were asked about sensation of pressure and pain in eye or orbit using a six-point ordinal scale during surgery.

Post Operative Assessment

Unaided Snellen visual acuity

- **Evaluated on 1st postoperative day**
- **Generalized redness and Patient comfort noticed.**

Patients graded for corneal oedema:

a) 0 to 3 as none
b) Mild (Descemet folds only)
c) Moderate (stromal edema with Descemet's membrane folds)
d) Severe (stromal and epithelial oedema)

AC inflammation

Evaluated by estimating the number of cells in 1 mm by 1 mm slit beam.

- **0 to 4 as 0 (no cells seen)**
- **0.5 (1–5 cells)**
- **1 (6–15 cells)**
- **2 (16–25 cells)**
- **3 (26–50 cells)**
- **4 (>50 cells)**

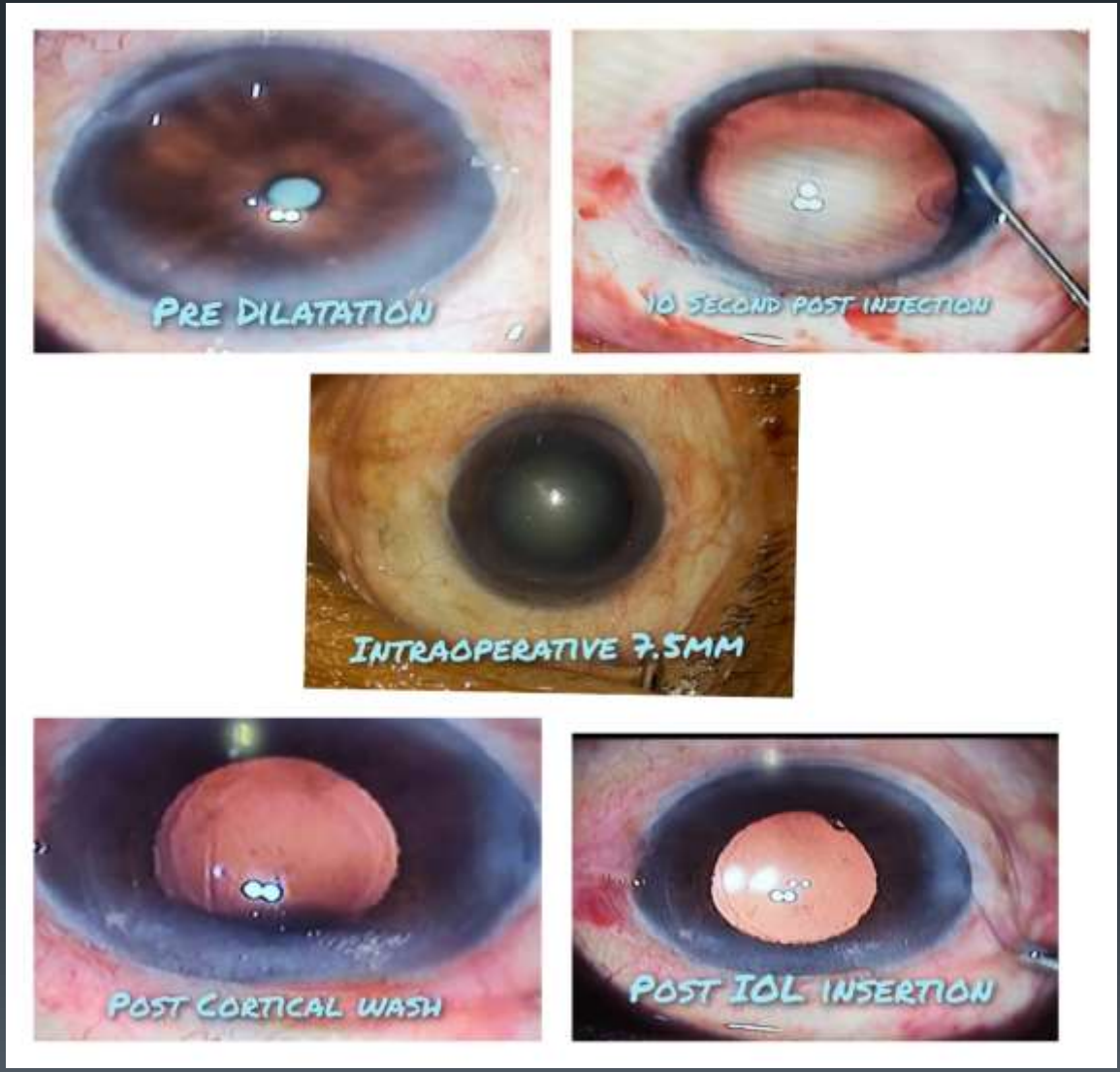
Results

- Out of 32 cases, 19 (59.3%) were male and 13 (40.7%) were females
- Median age of study sample was 65 years (range 43–78 years).

Gender	**Males 19 (59.3%)**	**Females 13 (40.7%)**
Laterality	**Right eye- 17 (53.1%)**	**Left eye-15 (46.8%)**
Nucleus Grading	Nuclear sclerosis: Grade 1-3 cases Grade 2- 11 cases Grade 3- 14 cases Grade 4- 4 cases	

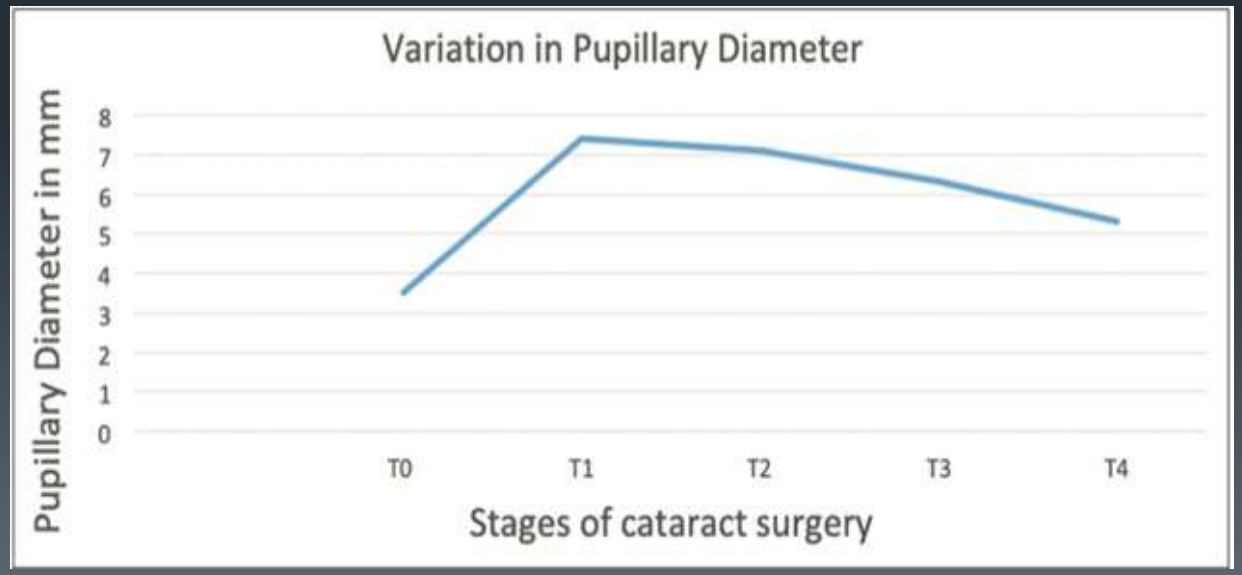
Table Shows Demography and cataract profile of cases

Results



Surgical stages & corresponding pupillary diameter.

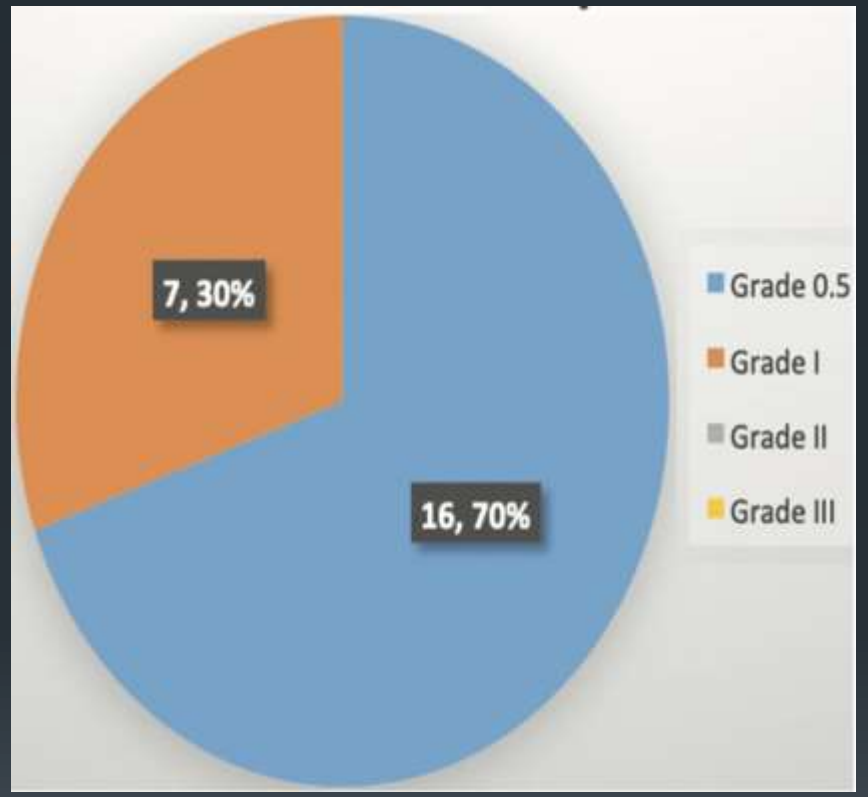
Line graph Pupillary diameter in mm at various stages of surgery.
T0: Preoperative pupil diameter
T1: 10 seconds after Intracameral inj.
T2: After cortical wash
T3: After IOL insertion
T4: At the end of the surgery



Results

Parameters	Postoperative Day 1 (n=32)
Visual Acuity (Unaided)	6/18-6/12 Mean is 6/15
Corneal Edema	None- 14 cases
	Mild- 17 cases
	Moderate- 1 (Resolved in on week)
	Severe- 0
AC Reaction	Grade 0-9 cases
	Grade 0.5 to 16 cases
	Grade 1-7 cases
	Grade 2-0 cases
	Grade 3-0 cases

Postoperative status



Distribution of cases according to AC reaction

Discussion

- We reported less congestion, AC reaction and more patient comfort. Similar findings were observed by Crandall *et al* in 1999 and Ajay *et al* in 2017.
- Ajay *et al* reported similar pattern of dilation in MSICS with intracameral mydriatics in study done in 2017 in contrast to Gupta *et al* who reported median 6.9mm.
- Possible increased intraoperative iris manipulations during MSICS contributed to this decrease in size of pupil.
- In our series we reported reduction in pupillary diameter from 7.35 mm to 5.29 mm at the end of the surgery.
- Lundberg *et al* also reported constriction of pupil in topical group, in their trial on intracameral versus topical mydriatics for phacoemulsification surgery.

Conclusion

- Intracameral mydriatic injection is found to be effective with regards to dilatation, rapidity, patient comfort, and compliance.
- Other benefit being reduction in nursing time to administer drops.
- No serious ADR reported with use of Intracameral Phenocaine.

THANK YOU!!