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ANALGESIC EFFICACY OF TOPICAL PROPARACAINE HYDROCHLORIDE 0.5% IN COMBINATION WITH INTRACAMERAL BLOCK WITH LIGNOCAINE 2% FOR CATARACT SURGERY - A PROSPECTIVE STUDY

Anaesthesiology

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ABSTRACT

Aim: To evaluate analgesic efficacy of Topical Proparacaine Hydrochloride 0.5% with Intracameral block in combination with Preservative Free Lignocaine 2% for Cataract Surgery

Methods: Intra operative pain was assessed using pain intensity scoring system. Patient were grouped according to age, gender and type of cataract.

Results: Pain intensity scores assessed for patients and were analysed statistically. Differences were considered significant at $P < 0.05$.

Conclusion: Cataract surgery with only with topical is not a completely painless procedure. Pain intensity decreases with topical anaesthesia in combination with Intracameral infiltration.

KEYWORDS

Proparacaine Hydrochloride 0.5% ,Preservative free Lignocaine 2%, Cataract surgery.

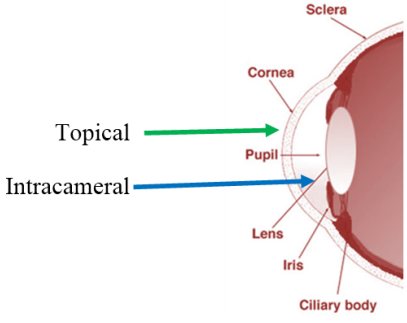
INTRODUCTION

For routine cataract surgery, topical anaesthesia is preferred because it provides sufficient patient comfort with lower incidence of complications compared to other types of anaesthesia.

The three most common methods of applying topical anaesthesia are by eye drops, by eye drops with intracameral block with lidocaine injection and in gel form.Topical anaesthesia by eyedrops is a noninvasive method, but in some cases it may provide insufficient analgesia and require an additional intracameral lidocaine injection.

This study aimed to determine the efficacy of topical anaesthesia by 0.5% proparacaine hydrochloride with intracameral block with 2% lignocaine in controlling pain and providing intraoperative comfort for patients undergoing cataract surgery.

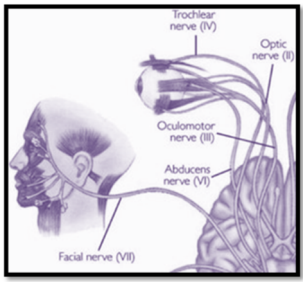
Eye-Anterior Segment



AIM

To evaluate analgesic efficacy of 0.5% proparacaine hydrochloride with intracameral block with 2% lignocaine as topical anaesthesia during cataract surgery.

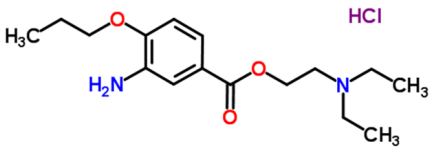
Nerve Supply of Eye



MATERIALS AND METHODS

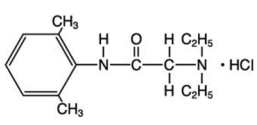
The prospective study included 40 patients Criteria for inclusion in surgery are 45 to 80 years,both gender,ASA PS I and II. Criteria for exclusion are refusal, mentally retarded, psychiatric patients. After securing Intra Venous line and Anaesthesia Work station check, Multichannel monitor connected to patient includes Pulse oximeter, NIBP. Patient observed and sensory blockade assessed by pain intensity scoring system. Patient with postoperative pain managed with Paracetamol tablet [5,6,7].

Proparacaine Hydrochloride



Proparacaine hydrochloride ophthalmic solution Solution is a rapid acting local anaesthetic suitable for ophthalmic use. The onset of anaesthesia usually begins within 30 seconds and lasts a relatively short period of time. The main site of anaesthetic action is the nerve cell membrane where Proparacaine interferes with the large transient increase in the membrane permeability to sodium ions that is internally produced by a slight depolarization of the membrane. As the anaesthetic action progressively develops in a nerve, the threshold for electrical stimulation gradually increases and the safety factor for conduction decreases; when this action is sufficiently well developed, block of conduction is produced. The exact mechanism whereby proparacaine and other local anaesthetics influence the permeability of the cell membrane is unknown; however, several studies indicate that local anaesthetics may limit sodium ion permeability through the lipid layer of the nerve cell membrane. This limitation prevents the fundamental change necessary for the generation of the action potential. Dosage and Administration: Instill 1 drop every 5 to 10 minutes for 5 to 7 doses

Lignocaine Hydrochloride



Lignocaine is an amide-type local anaesthetic agent and is suggested to stabilize neuronal membranes by inhibiting the ionic fluxes required for the initiation and conduction of impulses.

RESULTS

During surgery 40 patients had an average age of 69.27+_ 12.91 years. There were 22 men(50.7%) and 18 (49.2%)women.The patients included in study are given topical anaesthesia with proparacaine hydrochloride 0.5% and intracamerally 2% lignocaine[1,2,3,4] instilled. Ninety percentage (90%) patients pain was completely relieved within first 10 seconds and they experienced no further pain.($p<0.05$)

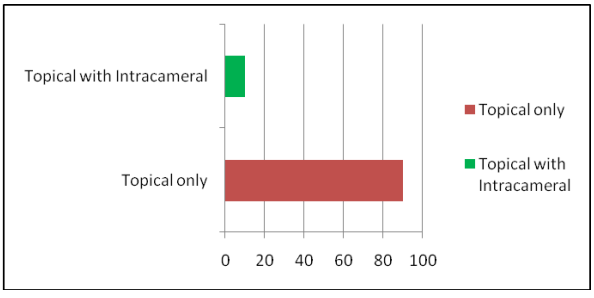
DISCUSSION

Clear corneal cataract surgery has been the subject of many studies. The advantages of topical anaesthesia with intracameral block are early recovery of sight and lack of injection related complications seen with peribulbar or retrobulbar anaesthesia[11,12,13,14,15].

In this study we evaluated the efficacy of topical anaesthesia with 0.5% proparacaine hydrochloride with intracameral block 2% lignocaine anaesthesia in providing comfort during cataract surgery.

Soliman et al reported that 73.3% patients who received 0.4% benoxinate and 10% of patients that received topical 0.5 % bupivacaine during phacoemulsification surgery had severe to unbearable pain which lead to addition of subtenon injection. In our study due to addition of intracameral block along with topical anaesthesia pain intensity were reduced.

In a study by Malecaze et al efficacy of intracameral mepivacaine as a supplement to topical anaesthesia during phacoemulsication surgery was investigated. They reported that within 10 seconds pain scores of 84% of patients decreased. From this group of patients 90.4% continued to have decreased pain sensation for remainder of procedure, while 9.6% required additional intracameral mepivacaine due to increased pain.In our study intracameral lidocaine injection resulted in complete pain relief within 10 seconds, and patient reported no further pain during the remainder of procedure.



Percentage of Patients with Intra Operative Pain

CONCLUSION

Cataract surgery with topical anaesthetic eye drops is not a completely painless procedure[8,9,10].The majority of patients feel mild to moderate pain. Hence our data suggest topical anaesthesia with 0.5% Proparacaine hydrochloride in combination with intracameral Preservative free 2% lignocaine infiltration *provides* painless *surgical scenario* with immediate visual improvements .

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