Summary

Regional anaesthesia is commonly used for ophthalmic surgery. The anaesthetic technique must produce optimal surgical conditions, providing good anaesthesia for the patient in a safe manner. Retrobulbar anaesthesia was the only technique used for many years ago. Rare but serious complications have led many physicians to replace this technique with peribulbar anaesthesia. (***Davis and Mandel, 1994).***

However peribulbar is safe and near ideal technique it has some limitations peribulbar accounted for 30.6%. Sharp needle techniques are associated with risks such as inadvertent globe perforation, retrobulbar haemorrhage or direct injection into the optic nerve. It does not eliminate serious complications totally, although these probably occur less frequently than with retrobulbar anaesthesia ***(Ball, et al; 2002).***

So some modification is done to reduce complication it suggested single injection percutaneous medial canthus is less complication ***(Rizo, etal; 2005)*** sub-Tenon's anaesthesia, using a blunt cannula, has gained increasing popularity. In a survey of current practice in the UK in 2003, it comprised 42.6% of the anaesthetics performed for cataract surgery ; Sub-Tenon's anaesthesia does not expose patients to these sight threatening consequences ***(Budd ,et al ;2009)*** The aim of this study was to compare Sub-Tenon's anaesthesia ,peribulbar and single injection percutaneous medial canthus methods of anaesthesia in patients having cataract surgery .

This is a single blind randomized controlled study, where patients were randomly allocated into three equal groups, 40 patients each group subdivided into two equal subgroup . All blocks were performed by the same investigator and the

surgeries were done by different surgeons, the results were assessed regarding: Pain on injection, during surgery and post operative, IOP, Degree of akinesia, Conjunctival hemorrhage, Needed for facial nerve block, other complications And the results were analyzed statistically.

Informed consent for regional eye blockade was taken, pre-operative assessment (History, examination and investigations) were done to all patients All patients received routine monitoring intraoperatively in the form of electrocardiography (ECG), automated non invasive blood pressure measurement and pulse oximetry. 22 G IV cannula was inserted in the dorsum of the hand for intravenous access and sedation to the patients in the form of Midazolam (0.5-1 mg IV) 5 minutes, before giving the block.

Pain was assessed using verbal pain score (VPS). Pain scoring showed a highly significant statistical difference between the three groups especially on injection, there was high significant statistical difference between the 3 groups as regards V.P.S. ($P< 0.002$). During surgery there was no significant statistical difference between 3 groups. Immediately postoperative there was significant statistical difference between the three groups as regards the (V.P.S.) $P <0.05$ surgery .

In the present study globe akinesia was assessed by globe movement score where globe movement score < 4 is satisfactory and the onset of globe akinesia was much faster in group I than in group II and III. There was high significant statistical difference between the 3 groups ($P < 0.001$) at 2, 5 minutes and at 10, 15 minutes there was no a significant statistical difference between the 3 groups where $P > 0.005$.

Intraocular pressure measurement (IOP) in present study in group I subgroup A there was no significant statistical difference between preinjection level of IOP, immediate after injection and 5 min after injection as no significant rise in IOP.

In group I subgroup B there was no significant statistical difference between preinjection level of IOP, immediate after injection and 5 min after injection as no significant rise in IOP.

In group II subgroup A there was significant statistical difference between preinjection level of IOP, immediate after injection and 5 min after injection as significant rise in IOP immediate after injection but drop again after 5 min after application of digital pressure but not reach basal level.

In group II subgroup B there was significant statistical difference between preinjection level of IOP, immediate after injection and 5 min after injection as significant rise in IOP immediate after injection but drop again after 5 min after application of digital pressure to basal level.

In group III subgroup A there was significant statistical difference between preinjection level of IOP, immediate after injection and 5 min after injection as significant rise in IOP immediate after injection but drop again after 5 min after application of digital pressure but not reach basal level.

In our study there was no significant statistical difference among the 3 groups as regards; Facial nerve block, eyelid akinesia, supplementary injection, conjunctival oedema and conjunctival haemorrhage ($P > 0.05$).