



Bupivacaine with Dexamethazone and Ropivacaine with Dexamethazone in Peribulbar Block

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Abstract

Background: *The low toxicity of ropivacaine makes it attractive for peribulbar anaesthesia.*

Aims and Objectives: *To compare the anaesthetic efficacy of 0.75% ropivacaine and 2mg dexamethasone with 0.5% bupivacaine and 2mg dexamethasone as a peribulbar block in cataract surgery.*

To compare the efficacy of 0.75% ropivacaine and 2mg dexamethasone with 0.5% bupivacaine and 2mg dexamethasone dexamethasone to assess the akinesia, analgesia, IOP and post op inflammation in peribulbar block.

Materials and Methods: *Randomised double blinded study among 50 patients hospitalized for cataract surgery. , iop at 0,1,5 and 10 min was noted after block*

Residual ocular movement and VAS(visual analogue scale) score was recorded at 0, 1, 5 and 10 minutes interval after the block. Post op inflammation was noted by Ac cell grading

Conclusion: *We would conclude by our study that ropivacaine with dexamethasone showed faster onset of akinesia and lowering iop, But bupivacaine with dexamethasone group showed prolonged post operative akinesia, better post operative analgesia and prolonged time to first rescue analgesia, post operative inflammation*

Keywords: *ropivacaine, bupivacaine, dexamethasone, akinesia, analgesia, IOP, post op inflammation.*

Introduction

Peribulbar block is used to obtain anaesthesia and akinesia of the eye by injecting local anaesthetic around the muscle cone.⁽¹⁾ There is reduced risk for globe perforation and optic nerve damage with peribulbar (extraconal) than retro bulbar (intraconal) block.

The low toxicity of ropivacaine makes it attractive for peribulbar anaesthesia. However its motor

sparing properties are undesirable when akinesia is important⁽²⁾. Ropivacaine is recently being introduced in Indian market and needs to be evaluated in Indian perspective. Dexamethasone is a high potent, long acting glucocorticoid with little mineralocorticoid effect. Glucocorticoid have been used to reduce inflammation and for prevention of post-operative nausea and vomiting, they are also effective in reducing post-operative pain and oedema⁽³⁾.

Aim of Study

- To compare the anaesthetic efficacy of 0.75% ropivacaine and 2mg dexamethasone with 0.5% bupivacaine and 2mg dexamethasone as a peribulbar block in cataract surgery.
- To compare the efficacy of 0.75% ropivacaine and 2mg dexamethasone with 0.5% bupivacaine and 2mg dexamethasone to assess the akinesia, analgesia, IOP and post op inflammation in peribulbar block.

Materials and Method

After a written informed consent from the patients, they will be randomized to receive peribulbar anaesthesia using 0.75% ropivacaine, 2mg dexamethasone and hyaluronidase 50 IU/ml in group A (n=25) or 0.5% bupivacaine, 2mg dexamethasone and hyaluronidase 50 IU/ml in group B (n=25). Standard monitoring will be established and vitals will be monitored.

Data collection

1) Sample Size: 50

2) Inclusion Criteria

- patient aged 50 years and above who will undergo elective surgery for uncomplicated cataract

3) Exclusion Criteria

- Patients refusing consent
- Patients on anticoagulant therapy
- Allergic to amide local anaesthetic or hyaluronidase
- contraindication to steroids
- Presence of major systemic disease or psychiatric illness and patients with single eye.

The anaesthetic solution was prepared individually and immediately before the block. The investigators performing the injections and assessment will be blinded to the solution used. Peribulbar local anaesthetic will be given by using 25G, 1 inch needle at the junction of lateral 1/3rd and medial 2/3rd directed deliberately towards the orbital floor and the drug will be injected until peribulbar fullness was observed or to a maximum volume of

7ml. light massage will be applied over the globe for the spread of solution for a minute, iop at 0,1,5 and 10 min is noted

- Residual ocular movement and VAS (visual analogue scale) score will be recorded at 0, 1, 5 and 10 minutes interval after the block. Movements in superior, inferior, medial and lateral quadrants were scored according to akinesia score as 0 (no movement), 1(flutter), 2 (partial movement) and 3(full movement).
- Postoperatively, patients were shifted to ward and monitored for time to first rescue analgesia required. Post op inflammation is noted by Ac cell grading by slit lamp examination next day according to standardization of uveitis nomenclature as grade 0 no cells,0.5 as 1-5 cells,1+ as 6-15 cells,2+ as 16-25 cells,3+ as 26-50 cells,4+ as >50 cells by 1*1mm slit beam

Table 1

VAS score	Grp 1		Grp 2		P value
	mean	SD	mean	SD	
1VAS(hr)	3.00	.500	4.96	.889	0.000
2VAS(hr)	4.76	.663	4.24	.723	0.011
3VAS(hr)	3.08	.702	2.96	.539	0.501

Table 1 shows statistically significant ($p < 0.05$), lower VAS scores at 1 hr in Group I(2.96+/-0.54) when compared to Group II(4.96+/-0.89)

Table 2

	Grp 1		Grp 2		P value
	Mean	SD	mean	SD	
akinesia	8.24	1.052	14.12	2.991	0.000
Po akinesia (min)	47.20	8.549	146.40	31.607	0.000

In Table 2, akinesia was achieved slower (at 14.12+/-2.99 mins) in Group II when compared to (8.24+/-1.05), Group I which was statistically significant ($p < 0.05$).but lasted longer group II when compared to group I

Table 3

	Grp 1		Grp 2		P value
	mean	SD	mean	SD	
BPO anaesthesia	2.04	.351	1.08	.277	0.000
0 IOP	11.68	2.056	11.76	2.107	0.892
1 IOP	9.84	1.818	9.84	1.818	1.000
5 IOP	8.80	1.155	8.88	1.166	0.808

Table 3 shows that first rescue analgesic was taken at a longer time period in Group I(2.04+/-0.35) when compared to Group II(1.08+/-0.28) which was statistically significant ($p < 0.05$)

There was no significance between the two groups on iop changes

Table 4

POI	Group		Total	P value
	grp I	grp II		
2	19	7	26	.001
	76.0%	28.0%	52.0%	
3	6	18	24	.037
	24.0%	72.0%	48.0%	
Total	25	25	50	.05
	100.0%	100.0%	100.0%	

Group I had less post op inflammation than group II which was statistically significant.

Discussion

- Our study was a prospective double blinded randomized controlled study
- Primary outcome was faster onset of akinesia with bupivacaine with dexamethasone, first rescue analgesia was taken after long time interval, VAS score, post op inflammation was less in this group
- Prolonged post operative akinesia was with ropivacaine with dexamethasone.
- Dexamethasone was used before intravitreally, subconjunctival injections, peribulbar block in posterior segment eye surgery, in our study we have proved that it could be given for peribulbar anaesthesia for anterior segment also.

Conclusion

- We would conclude by our study that bupivacaine with dexamethasone had good outcome when compared to ropivacaine with

dexamethasone as a peribulbar block in cataract surgery.

References

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