ejpmr, 2017,4(05), 63-73

SJIF Impact Factor 4.161

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Research Article

ISSN 2394-3211

EJPMR

EFFECT OF INTRACAMERAL INJECTION OF DEXAMETHASONE IN PEDIATRIC CATARACT SURGERY

Hassan Shamselden Yousef M.D., Ahmad Abdel Karim Mohamed M.D. and Asaad Noor Eldin M.D.

Ophthalmology department Faculty of Medicine Al-Azhar University –Assiut.

***Corresponding Author: Hassan Shamselden Yousef**

Ophthalmology department Faculty of Medicine Al-Azhar University –Assiut.

Article Received on 02/03/2017 **Article Revised on 23/03/2017** **Article Accepted on 14/04/2017**

ABSTRACT

Purpose: to evaluate the role and safety of intracameral injection of dexamethasone phospate 0.1cc (0.4mg) at the end of cataract surgery in prevention of postoperative inflammation and improvement of surgical outcomes in pediatric cataract surgery. Methods: a hospital based interventional comparative study was performed on 30 eyes of 26 patients with pediatric cataract. The patients were divided into two groups of equal size on the basis of simple random sampling. Group 1 (Gp.I): It included 15 eyes who were given routinely subconjuctival injection of dexamethasone 2mg and gentamycin 20mg at the end of cataract surgery. Group 2 (Gp.II): It included 15 eyes who were given subconjuctival injection of gentamycin (20mg) and intracameral injection of dexamethasone phosphate 0.1cc (0.4mg) at the end of cataract surgery. All patients were be scheduled for 6 months for evaluation of the degree of intraocular inflammatory response, fibrinous reaction, exudative membrane, synechiae formation, corneal oedema, Kps, posterior capsular opacification and Intraocular pressure were be also monitored at each visit Results: AC cells and flare were markedly decreased in dexamethasone group, Also the incidence of postoperative membrane formation about (20%), postoperative synechia formation about (20%), postoperative corneal edema about (13.33%), postoperative keratic precipitates (Kps) about (6.66%) and posterior capsular opacification about (20%) in group II as compared with group I. Thier was no serious adverse effect noticed from the intracameral injection of dexamethasone. Conclusion: the use of intracameral dexamethasone phospate 0.1cc (0.4mg) at the end of pediatric cataract surgery was found safe and superior to subconjuctival injection of dexamethasone in decreasing early postoperative inflammation, membrane and synechia formation and also posterior visual axis opacification.

INTRODUCTION

Pediatric cataract presents as a significant problem in developing countries in terms of human morbidity, economic loss and social burden. Managing of pediatric cataract remains a challenge.[1] Early management prevents the child from developing amblyopia and ensures good visual outcome.[2]

One of the largest difference between pediatric and adult cataract surgery is the postoperative course. The postoperative period in adults most often follows an uneventful course. In children however, high uveal reactivity is the major cause of certain postoperative complications such as (prolong patient recovery, raise intraocular pressure (IOP), increase the risk of cystoid macular edema (CME), retinal detachment, exudative membrane, synechia formation, posterior capsule opacification (PCO) and lens epithelial reproliferation).[3]

Poor compliance of patients specially pediatrics, limited corneal absorption, variable intraocular concentrations of topical drugs during the therapeutic course[4] and also, pediatric patient may squeeze his eyes while instilling drops that reduce the contact time of medication in the cornea, All these factors compromise the efficacy of topical drugs. Therefore, The conventional way of using topical drugs is not so effective in the control of postoperative inflammation.

Intracameral and intravitreal injections of TA given at the end of PE, in conjunction with standard postoperative corticosteroid eye drops, have proven to be beneficial in uveitic eyes.[5]

Use of intracameral dexamethasone has been found to significantly reduce the quantity of aqueous inflammatory cells in eyes with and without glaucoma one day after phacoemulsification, while causing minimal concern about IOP elevation.[6]

Patients and methods

This was a hospital based interventional comparative study conducted at the Ophthalmology department, Al-Azhar Assuit university hospital over the duration of one year from march 2014 to April 2015. Thirty eyes from 26 patients with pediatric cataract were scheduled to be included in this study.

Inclusion criteria

1. congenital, developmental or traumatic cataract.
2. Age below 18 years.
3. Visually significant cataract.
4. Medically stable patients and fit for general anaethesia.

Exclusion criteria

1. Patients with visually insignificant cataract as (punctate or small anterior polar cataracts and others with partial opacification of the lens).
2. Patients who suffering from retinal detachment, corneal endothelium disease, other anterior or posterior segment abnormalities.
3. Patients who suffering from diabetes mellitus or using frequent oral or topical anti-inflammatory agents.
4. Patients with sever microphthalmia (corneal diameter less than 5 mm).

The patients were divided into two groups of equal size on the basis of simple random sampling.

Group 1 (Gp.I)

Included 15 eyes who were given routinely subconjuctival injection of dexamethasone 2mg and gentamycin 20mg at the end of cataract surgery.

Group 2 (Gp.II)

Included 15 eyes who were given subconjuctival injection of gentamycin (20mg) and intracameral injection of dexamethasone phosphate 0.1cc (0.4mg) at the end of cataract surgery.

Preoperative evaluation

(1) History

Detailed history from the parents about

- Onset & Course of presentation.
- Unilateral or bilateral.
- History of trauma.
- Family history of the same disease.
- History of Consanguinity.
- Birth history (Maternal infection, Drugs exposure, Radiation exposure, Birth trauma, Low birth weight.)
- History of previous eye operation.
- History of chronic disease.
- Drugs or allergens.

(2) Examination

- Pediatric examination: for any chronic & systemic diseases.
- Fitness for anesthesia.

(3) Detailed ocular examination

(a) Anterior segment with the help of slit lamp for (lid, lacrimal system, conjunctiva, cornea, anterior chamber, pupil, IOP, iris).

(b) Lens for (Size, Density, location and morphology of cataract).

(c) Posterior segment for (Retina, optic nerve).

In non cooperative cases examination was done under sedation or general anesthesia with microscope for anterior segment and indirect ophthalmoscope for posterior segment.

(5) Investigations

- IOL master to calculate the power of IOL.
- Ocular ultrasonography was performed for evaluation of posterior segment.

Operative procedures

Informed consent from the parents of children were taken before surgery. After proper examination and preparation All the children were operated for aspiration of lens, primary posterior surgical capsulotomy and anterior vitrectomy.

All children were operated with intraocular lens implantation. All the children in both groups were operated under the same condition.

Patients in group (2) were given intracameral injection of dexamethasone phosphate 0.1cc (0.4mg) at the end of surgery.

Postoperative follow-up

Postoperative medication regimen in the first three postoperative days in both groups was in the form of topical prednisolone acetate 1% (one drop every 2 hours), Gatifloxacin 0.3% eye drops (one drop every 2 hours) and Cyclopentolate eye drops (one drop every 8 hours).

Then for the next one week prednisolone acetate 1% (one drop every 4 hours), Gatifloxacin 0.3% eye drops (one drop every 4 hours), and Cyclopentolate eye drops (one drop every 8 hours) were be given topically.

Outcome measurements

All patients were be scheduled for evaluation on first and third postoperative days, first week, 1st, 3rd and 6th months.

A complete ophthalmic examination using slit-lamp biomicroscopy were performed at all follow-up visits.

- The primary outcome evaluation were be the degree of intraocular inflammatory response at each visit that is assessed by flare and cells in the anterior chamber.
- The evaluation were be also for fibrinous reaction, exudative membrane, synechiae formation, corneal oedema, Kps, posterior capsular opacification.
- Intraocular pressure were be also monitored at each visit.
- Any adverse events to assess the safety of the injection.

Anterior chamber activity

In the presence of AC inflammation grade both the flare (visible as haze illuminated by the slit-lamp beam) and cells (seen as particles slowly moving through the beam). This is important both in detecting intraocular inflammation and in monitoring the response to treatment.

Table (1): Grading of anterior chamber flare

Grade	Description
0	None
1+	Faint
2+	Moderate (iris + lens clear)
3+	Marked (iris + lens hazy)
4+	Intense (fibrin or plastic aqueous)

Table: (2) Grading of anterior chamber cells. (counted with 1 X 1mm slit)

Activity	Cells
0	5<
1+	6-15
2+	16-25
3+	26-50
4+	>50

RESULTS

Thirty eyes of 26 patients below eighteen years were included in the study divided into two groups each group containing 15 eyes. There were (17 eye) of 15 male (56.66%) and (13 eye) of 11 females (43.33%). In group 1 (Gp.I) there were 9 (60%) male and 6 (40%) female, while in group II (Gp.II) there were 8 (53.33%) male and 7 (46.66%) female.

Table: (3) Sex distribution.

		Male	Female	Total
Group	I	9 (60%)	6 (40%)	15
	II	8(53.33%)	7(46.66%)	15
Total		17 case (56.66%)	13 case (43.33%)	30

Table: (4) Age distribution.

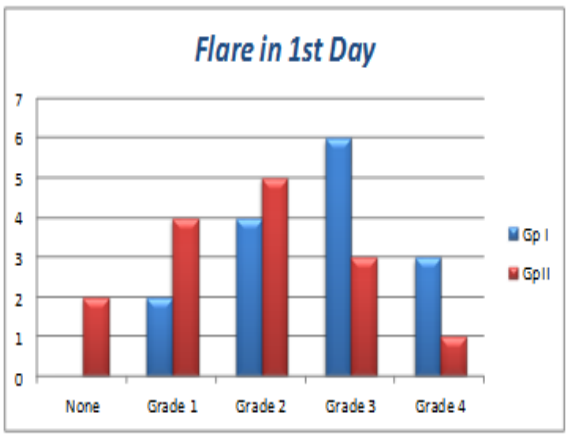
		Below 5 yrs	5-12 yrs	13-18 yrs	Total
Group	I	4	8	3	15
	II	3	7	5	15
Total		7 (23.33%)	15 (50%)	8 (26.66%)	30

The mean age in both groups was (7.3 years) ranging from (4-16.8 years).There were (7) eyes (23.33%) below 5 years and (15) eyes (50%) from 5 to 12 years and (8) eyes (26.66%) from 13 to 18 years. In group 1 there were (4) eyes below 5 years, (8) eyes from 5 to 12 years and (3) eyes from 13 to 18 years, while in group II , were (3) eyes below 5 years, (7) eyes from 5 to 12 years and (5) eyes from 13 to 18 years.

There was no significant difference between the study groups in age, sex, type and level of cataract, baseline IOP and surgical procedure.

Table: (5) Anterior chamber flare. In 1st postoperative day, 3rd postoperative day and 1st week.

	1st Day		3rd Day		1st week	
	Gp I	GpII	Gp I	GpII	Gp I	GpII
None	0	2	1	4	3	7
Grade 1+	2	4	4	6	3	4
Grade 2+	4	5	4	3	5	3
Grade 3+	6	3	4	2	3	1
Grade 4+	3	1	2	0	1	0



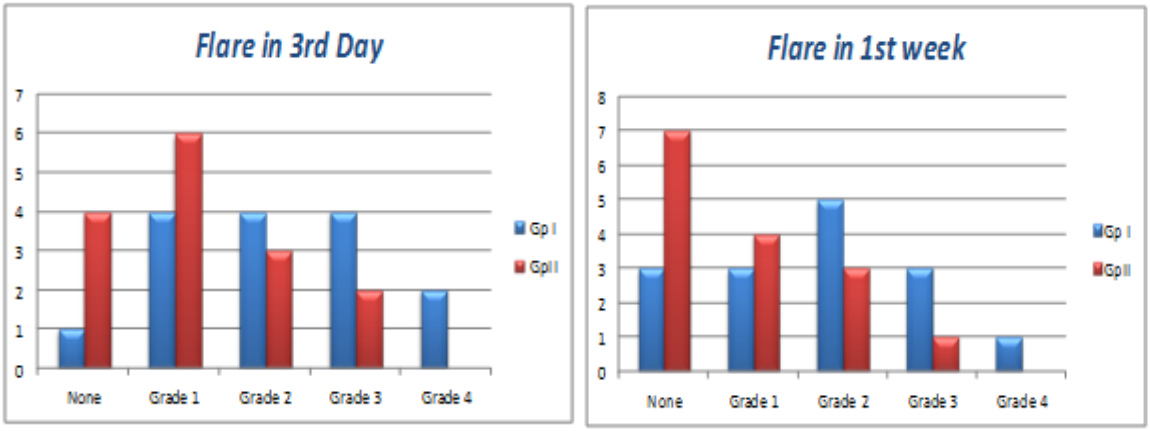


Fig: 1 Anterior chamber flare. In 1st postoperative day, 3rd postoperative day and 1st week.

Table (6): Anterior chamber cells i

	1st Day		3rd Day		1st week	
	Gp I	GpII	Gp I	GpII	Gp I	GpII
Grade 0	0	2	1	3	2	4
Grade 1+	2	3	3	4	5	6
Grade 2+	3	4	4	5	4	3
Grade 3+	7	6	5	3	3	2
Grade 4+	3	0	2	0	1	0

n 1st post operative day, 3rd postoperative day and 1st week.

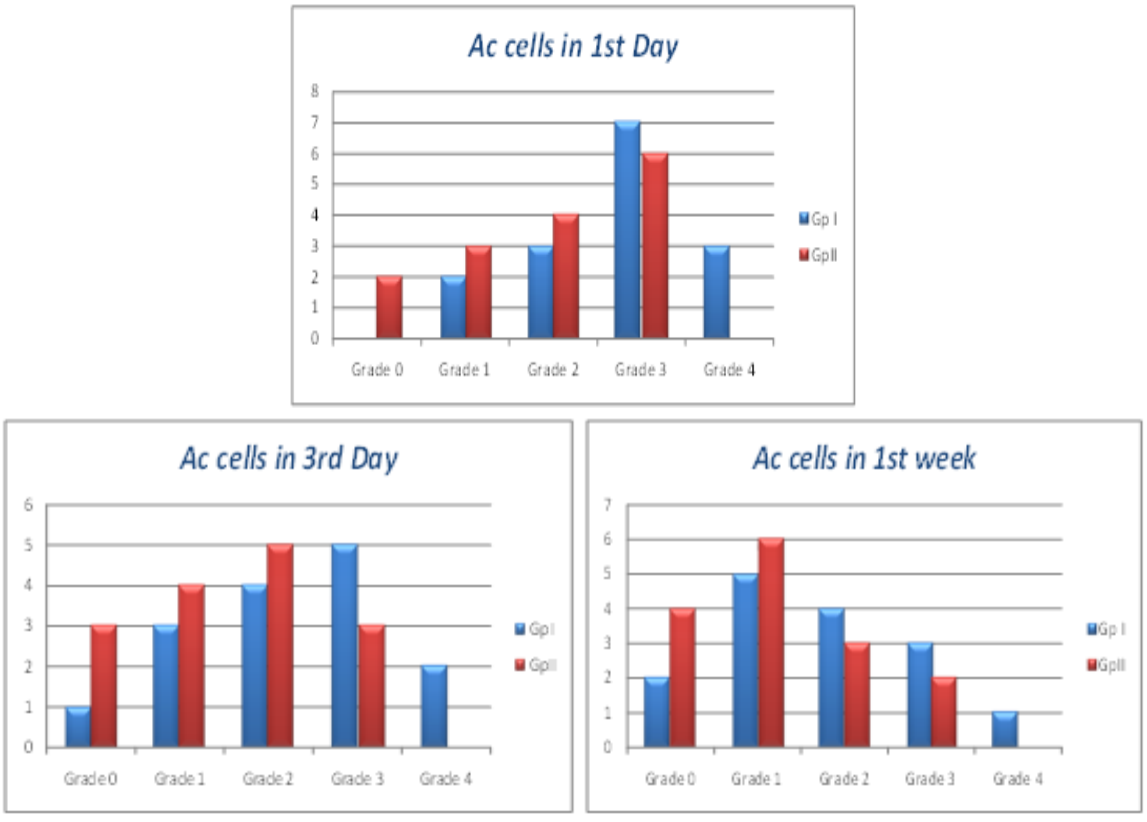


Fig.(2):Anterior chamber cell grading in 1st post operative day (a), 3rd postoperative day (b) and 1st week (c).

At the first post operative day (6 cases 40%) in group I and (11 cases 73.33%) in group II had flare of grade +2 and less while (9 cases 60%) in Gp.I and (4 cases 26.66%) in Gp.II had flare of grade +3 and above. Regarding cells in anterior chamber (5 cases 33.33%) of patients in Gp.I and (9 cases 60%) in Gp.II had cells of grade +2 and less, while (10 cases 66.66) of patients in Gp.I and (6 cases 40%) in Gp.II had cells of grade +3 and above.

At the third post operative day (9 cases 60%) of patients in group I and (13 cases 86.66%) in group II had flare of grade +2 and less while (6 cases 40%) in Gp.I and (2 cases 13.33%) in Gp.II had flare of grade +3 and above. As far as cells in anterior chamber were concerned, (8 cases 53.33%) in Gp.I and (12 cases 80%) in Gp.II had cells of grade +2 and less, while (7 cases 46.66%) in GpI and (3 cases 20%) in Gp.II had cells of grade +3 and above.

By the end of 1st week (11 cases 60%) of patients in group I and (14 cases 93.33%) in group II had flare of grade +2 and less while (4 cases 40%) in Gp.I and (1 cases 6.66%) in GpII had flare of grade +3 and above. As far as cells in anterior chamber were concerned, (11 cases 53.33%) in Gp.I and (13 cases 86.66%) in Gp.II had cells of grade +2 and less, while (4 cases 46.66%) in Gp.I and (2 cases 13.33%) in Gp.II had cells of grade +3 and above.

Table: 7 Comparison of membrane formation between two groups.

	Group 1		Group II	
	N	%	N	%
1st Day	4	26.66%	3	20%
3rd Day	5	33.33%	2	13.33%
1st Week	3	20%	1	6.66%
1st month	1	6.66%	0	0
3rd month	1	6.66%	0	0

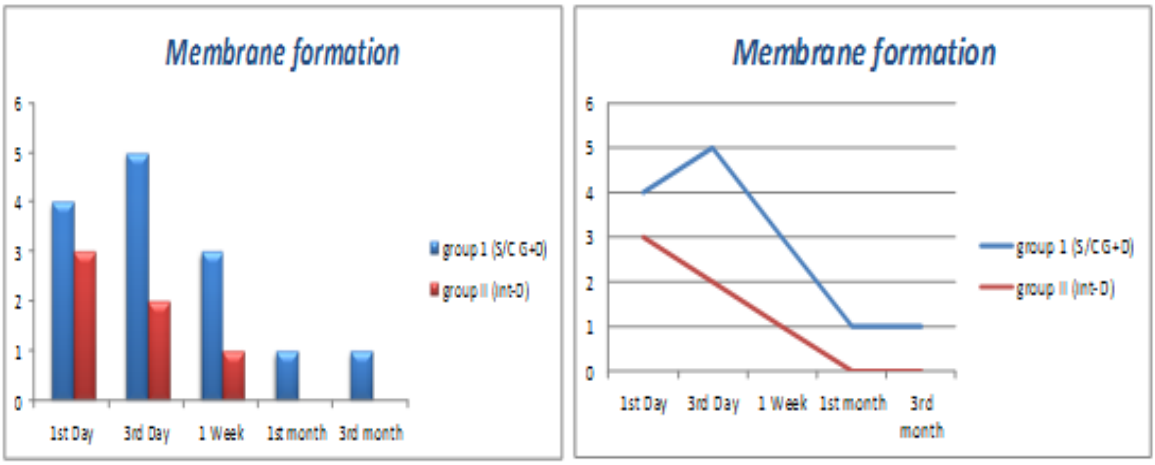


Fig: (3): Comparison of membrane formation between two groups.

At the first postoperative day membrane was present in (4) eyes 26.66% in group I while (3) eyes 20% in group II. At 3rd postoperative day membrane was present in (5) eyes 33.33% in group I while (2) eyes 13.33% in group II. After 1 week it was present in (3) eyes 20% in Gp.I and only one eye 6.66% in Gp. II.

The incidence of postoperative membrane formation was lowered about (20%) in intracameral dexamethasone group as compared with group I in 3rd post operative day.

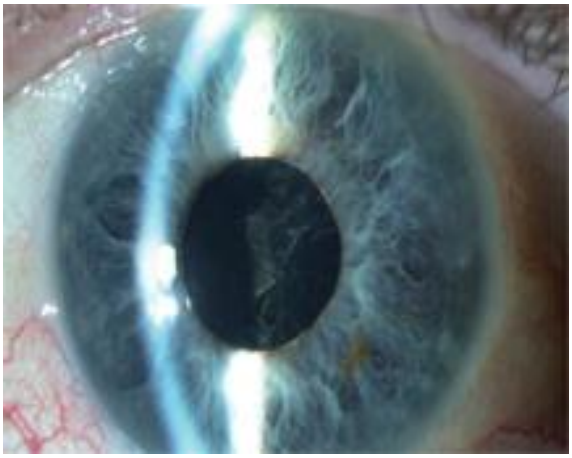


Fig: (4): 1st day postoperative membrane formation.

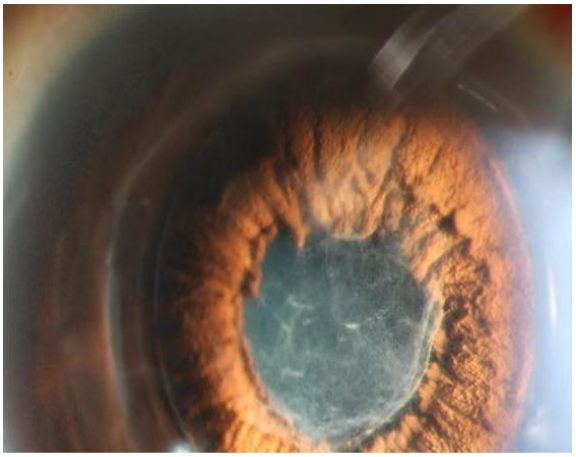


Fig.(5): Severe fibrinous reaction and synechia 3rd day

Table: 8 Comparison of Synechia formation between the two groups.

	group 1 (S/C G+D)		group II (int-D)	
	N	%	N	%
1st Day	4	26.66%	2	13.33%
3rd Day	4	26.66%	2	13.33%
1 Week	4	26.66%	1	6.66%
1st month	3	20%	1	6.66%
3rd month	3	20%	1	6.66%

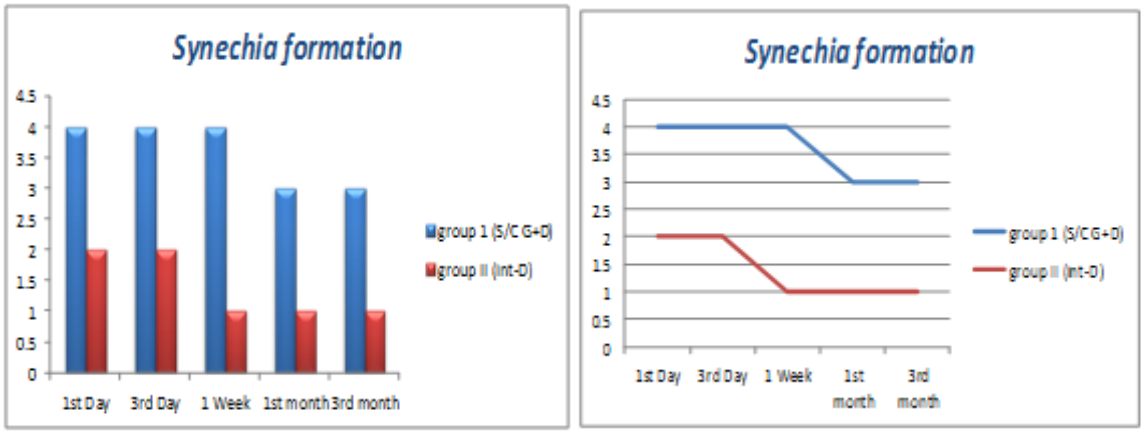


Fig. (6): Comparison of Synechia formation between the two groups.

At the first and 3rd post operative day synechia was present in (4) eyes 26.66% in group I while (2) eyes 13.33% in group II. After 1 week it was decreased in group II to 6.66%.

The incidence of postoperative synechia formation was lowered about (20%) in intracameral dexamethasone group as compared with group I in 1st week post operative day.

Table (9): Comparison of Corneal edema between the two groups.

	Group I		Group II	
	N	%	N	%
1st Day	8	53.33%	5	33.33%
3rd Day	6	40%	4	26.66%
1 Week	3	20%	2	13.33%
1st month	2	13.33%	1	6.66%
3rd month	2	13.33%	0	0

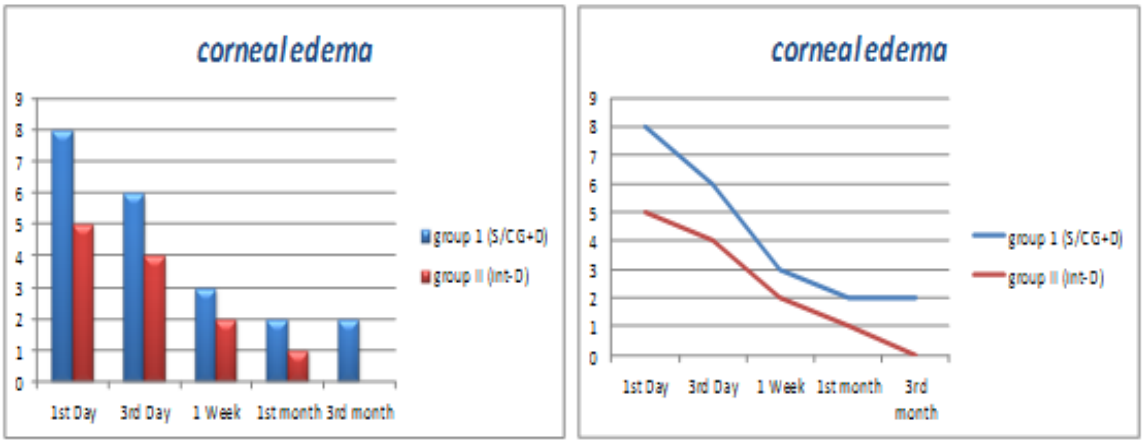


Fig. (7): Comparison of Corneal edema between the two groups.

At the first post operative day corneal edema was present in (8) eyes 53.33% in group I while (5) eyes 33.33% in group II. At 3rd post operative day it was present in (6) eyes 40% in group I while (4) eyes 26.66% in group II. After 1 week it was present in (3) eyes 20% in group I and (2) eyes 13.33% in group II.

The incidence of postoperative corneal edema was lowered about (13.33%) in intracameral dexamethasone group as compared with group I in 3rd post operative day.

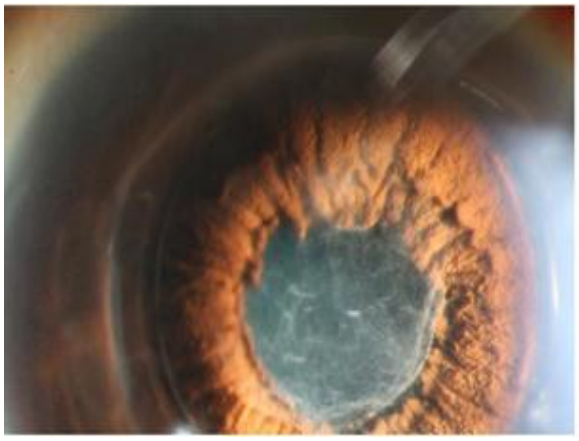


Fig: (8) postoperative synechia formation.

Fig: (9) Acase with postoperative corneal edema.

Table (10): Keratic precipitates (KPs) in the two groups.

	Group I		Group II	
	N	%	N	%
1st Day	3	20%	1	6.66%
3rd Day	2	13.33%	1	6.66%
1 Week	2	13.33%	1	6.66%
1st month	1	6.66%	0	0
3rd month	0	0	0	0

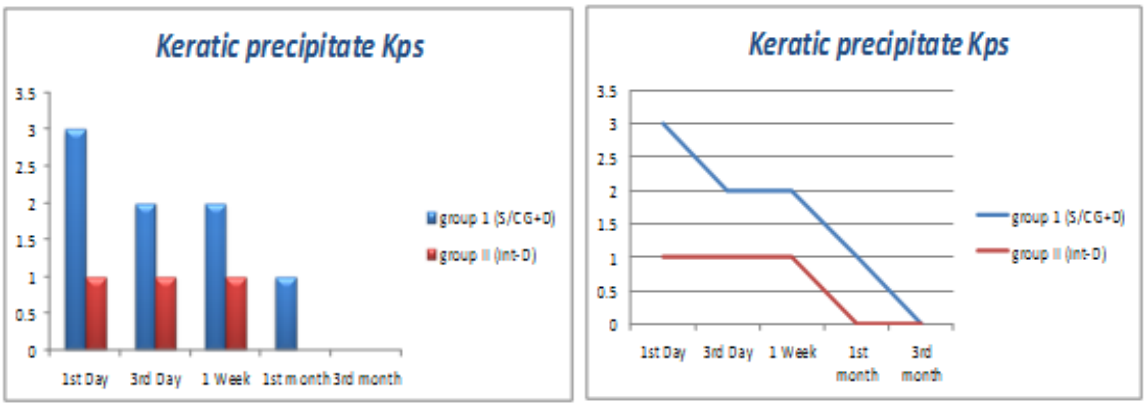


Fig: 10 Keratic precipitates (KPs) in the two groups.

At the first post operative day keratic precipitates (Kps) was present in (3) eyes 20% in group I while one eye 6.66% in group II. After 1 week keratic precipitates (Kps) was present in (2) eyes 13.33% in group I while one eye 6.66% in group II. At 3rd month their was no case had keratic precipitates (Kps).

The incidence of postoperative keratic precipitates (Kps) was lowered about (6.66%) in intracameral dexamethasone group as compared with group I in 3rd post operative day.

Table: (11): Ciliary congestion in the two groups.

	Group I		Group II	
	N	%	N	%
1st Day	14	93.33%	10	66.66%
3rd Day	12	80%	8	53.33%
1 Week	8	53.33%	6	40%
1st month	5	33.33%	3	20%
3rd month	0	0	0	0

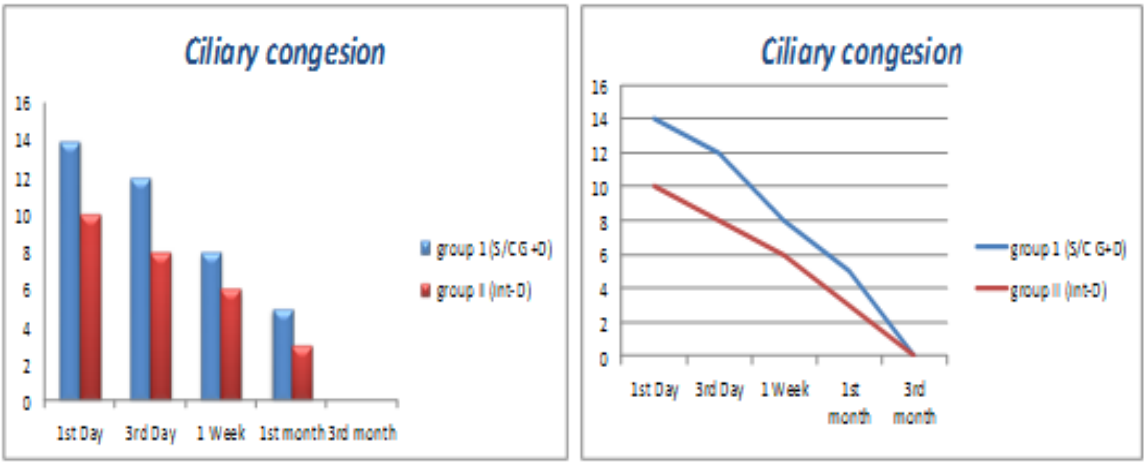


Fig. (11): Ciliary congestion in the two groups.

At the first post operative day ciliary congesion was present in (14 eyes 93.33%) in group I while (10 eyes 66.66%) in group II. At 3rd post operative day was present in (12 eyes 80%) in group I while (8 eyes 53.33%) in group II. After 1 week it was present in (8 eyes 53.33%) in group I and (6 eyes 40%) in group II. After 1 month it was present in (5 eyes 33.33%) in group I and (3 eyes 20%) in group II.

The incidence of postoperative ciliary congesion was lowered about (26.66%) in intracameral dexamethasone group as compared with group I in 3rd post operative day.

Table: 12 Posterior capsular opacification in the two groups.

	Group I		Group II	
PCO	N	%	N	%
	7	46.66%	4	26.66

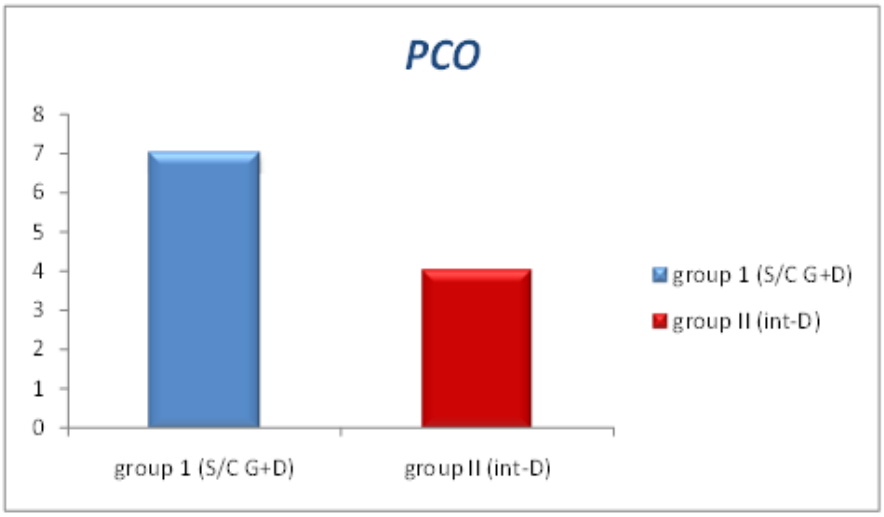


Fig: 12 Posterior capsular opacification.

There was (7) cases 46.66% developed PCO in group I while (4) cases 26.66% in group II The difference between groups is statistically significant.

The incidence of Posterior capsular opacification was lowered about (20%) in intracameral dexamethasone group as compared with group I after one month post operative.

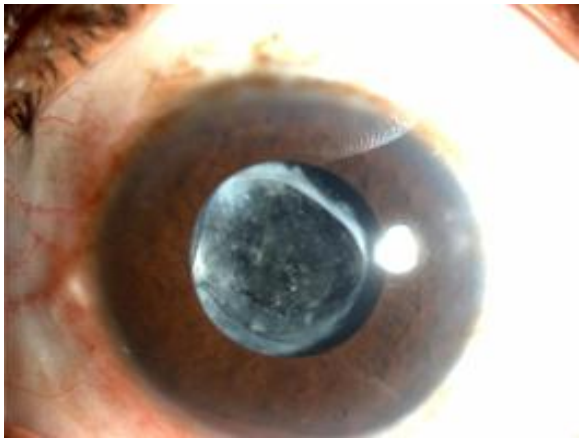


Fig: 13 A case with posterior capsule opacification.

Regarding the management of complications of both groups, (4 cases) in group I and (2 cases) in group II required injection of peribulbar mydricaine to break posterior synechiae.

As regard intraocular pressure, antiglucoma medications were given in (5 cases) 2 cases in group I and 3 cases in group II for 2 weaks and IOP returned to normal levels that allowed discontinuation of the eye drops. One of these cases had some remaining soft lens matter, possibly giving rise to the higher IOP, and this was visualized and removed surgically about 1 month after the cataract operation.

As regard posterior capsule pacification (7 cases) in group I and (4 cases) in group II developed (PCO) and need Nd:YAG laser posterior capsulotomy.

Thier was no serious adverse effect noticed from the intracameral injection of dexamethasone.

DISCUSSION

Infant Aphakia Treatment Study reported that 30% of implanted eyes developed pupillary or anterior membranes.[10]

Unlike topical applications, the intracameral route provides drug delivery directly to the site of interest during the early events of inflammatory cascade activation. Gills and Gills,[11] hypothesize that the high relative potency of dexamethasone may confer greater efficacy than TA when given as a single injection. Rapid aqueous volume turnover and short half-life of intraocular dexamethasone, both on the order of several hours, would help minimize the risk of steroid-induced ocular hypertension and corneal and systemic side effects caused by prolonged topical corticosteroid usage.[12,13]

To achieve better control of post operative uveitis Oculex pharmaceutical developed an intraocular drug delivery system which is superior to topical therapy and subconjuctival injection, due to relatively prolonged effect and direct action on the desired tissue. Their first product was surodex containing 60ug dexamethasone which is inserted into anterior or posterior chamber at the end of surgery which results in sustained release of dexamethasone.[14]

Surodex was directly compared with topical dexamethasone in a separate randomized double masked study of 60 cataract patients conducted in Singapore by (Tan and chee 1999).[14]

One half of patients were randomized to treatment with dexamethasone 0.1 % eye drops four times a day for 30 days postoperatively, the other half of patients received single surdox pellet at the conclusion of uncomplicated surgery followed by normal saline placebo eye drops four times a day for 30 days. Postoperatively mean kowa laser flare values were significantly lower in surodex treated group compared with the topical steroid treatment group during the first two post operative weeks (P=0.001). Mean Cell and Flare scores, as judged by masked slit lamp examination were slightly lower in surodex treated group.[14]

Asimina, et al., 2012 reported in their study of 18 patients (24 eyes), who had cataract surgery with intraocular implant and were given preservative-free intracameral dexamethasone intraoperatively. in this study the median age at surgery was 3 months and the median follow-up was 38 months. In four eyes transient postoperative anti-glucoma medication was used, but none developed glaucoma within the follow-up period. Fifteen eyes had posterior capsule opacification at 6.4 months postoperatively on average but no eye developed anterior membranes. They conclude that intracameral dexamethasone in infantile cataract surgery does not seem to cause an increased risk of glaucoma, while it appears to prevent against anterior membrane formation.[10]

Another study was conduced by (Diane TW Chang, et al., 2009) that was about (whether dexamethasone injected intracamerally at the conclusion of surgery can safely and effectively reduce postoperative inflammation and improve surgical outcomes in eyes with and without glaucoma). This study was a retrospective chart review of 176 consecutive eyes from 146 patients receiving uncomplicated phacoemulsification (PE) (n = 118 total, 82 with glaucoma), glaucoma drainage device (GDD) (n = 35), combined PE/GDD (n = 11) and combined PE/endoscopic cyclophotocoagulation (n = 12). Ninety-one eyes from 176 patients were injected with 0.4 mg dexamethasone intracamerally at the conclusion of surgery. All eyes received standard postoperative prednisolone and ketorolac eyedrops. Outcomes were measured for four to eight weeks by subjective complaints, visual acuity (VA), slit-lamp biomicroscopy, intraocular pressure (IOP) and postoperative complications.[11]

The previous study reported that intracameral dexamethasone significantly reduced the odds of having

an increased anterior chamber (AC) cell score after PE (p = 0.0013). Mean AC cell score ± SD in nonglaucomatous eyes was 1.3 ± 0.8 in control and 0.8 ± 0.7 with dexamethasone; scores in glaucomatous eyes were 1.3 ± 0.7 in control and 0.9 ± 0.8 with dexamethasone. Treated nonglaucomatous eyes had significantly fewer subjective complaints after PE (22.2% vs 64.7% in control; p = 0.0083). Dexamethasone had no significant effects on VA, corneal changes, IOP one day and one month after surgery, or long-term complications.[12]

Regarding the concern of corneal safety, dexamethasone was shown to increase the Na,K-ATPase activity and pump function of cultured mouse corneal endothelial cells.[13]
This has been proposed as an adjunctive therapy in managing endothelial rejection of corneal allografts.. This therapeutic modality could therefore be an option to consider in the quest to control the exuberant inflammatory reaction typically seen postoperatively in the infant eye.[14]

In our study we investigated whether dexamethasone injected intracamerally at the conclusion of surgery could safely and effectively reduce postoperative inflammation and improve surgical outcomes in pediatric cataract.

In our study thirty patients were divided into two equal groups. All the patients were operated for lens aspiration, primary posterior capsulotomy and anterior vitrectomy. All children were operated with intraocular lens implantation. Patients in group I were given routinely subconjuctival injection of gentamycin (20mg) and dexamethasone (2mg) while patient in group II were given subconjuctival injection of gentamycin (20mg) and intracameral injection of dexamethasone (0.4mg).

On evaluation at the first post operative day (6 cases 40%) in group I and (11 cases 73.33%) in group II had flare of grade +2 and less while (9 cases 60%) in Gp.I and (4 cases 26.66%) in Gp.II had flare of grade +3 and above. Regarding cells in anterior chamber (5 cases 33.33%) of patients in Gp.I and (9 cases 60%) in Gp.II had cells of grade +2 and less, while (10 cases 66.66) of patients in Gp.I and (6 cases 40%) in Gp.II had cells of grade +3 and above. Exudative membrane was present in 26.67% in group I and 20% in group II . Posterior synechiae were present in 26.66% in group I and 13.34% in group II.

At the third post operative day (9 cases 60%) of patients in group I and (13 cases 86.66%) in group II had flare of grade +2 and less while (6 cases 40%) in Gp.I and (2 cases 13.33%) in Gp.II had flare of grade +3 and above. As far as cells in anterior chamber were concerned, (8 cases 53.33%) in Gp.I and (12 cases 80%) in Gp.II had cells of grade +2 and less, while (7 cases 46.66%) in GpI and (3 cases 20%) in Gp.II had cells of grade +3 and above. Exudative membrane was present in 33.33% in group I and 13.33% in group II. Posterior synechiae were present in 26.66% in group I and 13.34% in group II.

By the end of 1st week (11 cases 60%) of patients in group I and (14 cases 93.33%) in group II had flare of grade +2 and less while (4 cases 40%) in Gp.I and (1 cases 6.66%) in GpII had flare of grade +3 and above. As far as cells in anterior chamber were concerned, (11 cases 53.33%) in Gp.I and (13 cases 86.66%) in Gp.II had cells of grade +2 and less, while (4 cases 46.66%) in Gp.I and (2 cases 13.33%) in Gp.II had cells of grade +3 and above. Exudative membrane was present in 20% in group I and 6.66% in group II. Posterior synechiae were present in 26.66% in group I and 6.66% in group II.

As clear from above, while evaluating for cells and flare, post operative inflammation was significantly less severe in group II than group I on first and third postoperative day. Also exudative membrane and posterior synechiae were present in relatively more patients in group I than group II

At first week follow up visit there was not clinically significant difference between the two groups. This might be due to intensive therapy which was being done post operatively and also the effect of intracameral was washed away after few days.

So comparing group I and II, intracameral injection is superior to subconjuctival up till the 3rd post operative day. But there is no statistically significant difference between two groups by 7 days after surgery.

There was (7) cases 46.66% developed PCO in group I while (4) cases 26.66% in group II The difference between groups is statistically significant.

The incidence of posterior capsular opacification was lowered about (20%) in intracameral dexamethasone group as compared with group I in after one month postoperatively.

Also the incidence of postoperative corneal edema, (KPs) and ciliary congestion were decreased about (13.33%, 6.66% and 26.66%) in intracameral dexamethasone group as compared with group I in 3rd post operative day.

As regard intraocular pressure, antiglucoma medications were given in (5 cases) 2 cases in group I and 3 cases in group II for 2 weaks and IOP returned to normal levels that allowed discontinuation of the eye drops. One of these cases had some remaining soft lens matter, possibly giving rise to the higher IOP, and this was visualized and removed surgically about 1 month after the cataract operation.

Thus intracameral dexamethasone can be good alternative to subconjuctival injection of dexamethasone due to its direct effect on the desired tissue, also it is

easily available and patient does not have to cost anything for it.

It also avoids the long term complications of uveitis. Intracameral dexamethasone itself was not associated with any complication during this study.

CONCLUSION

Use of intracameral dexamethasone phospate 0.1cc (0.4mg) at the end of pediatric cataract surgery was found safe and superior to subconjuctival injection of dexamethasone in decreasing early postoperative inflammation and membrane, synechia formation and also posterior visual axis opacification.

REFERENCES

1. Wilson M E, Pandey S K , and Thakur J . Paediatric cataract blindness in the developing world: surgical techniques and intraocular lenses in the new millennium. Br J Ophthalmol, 2003; 87(1): 14–19.
2. Robb AM and Tense MT. Visual results of early treatment of congenital cataract. J Paediator Ophthalmol Strabismus, 1993; 30: 28-32.
3. Vasavada A and Chauham H. Intraocular lens implantation in infants with congenital cataracts. J Cataracts Refract Surg, 1994; 20: 592-8.
4. Ichigashira N and Yamaga N. Intraocular fate of dexamethasone disodium phosphate topically applied to the eyes of rabbits. Steroids, 1978; 32(5): 615–628.
5. Li J, Heinz C, Zurek-Imhoff B and Heiligenhaus A. Intraoperative intraocular triamcinolone injection prophylaxis for post-cataract surgery fibrin formation in uveitis associated with juvenile idiopathic arthritis. J Cataract Refract Surg, 2006; 32(9): 1535–1539.
6. Chang DT, Herceg MC, Bilonick RA etal. Intracameral dexamethasone reduces inflammation on the first postoperative day after cataract surgery in eyes with and without glaucoma. Clin Ophthalmol, 2009; 3: 345-55.
7. Asimina AM, Ahmad AD, Will WM etal. Does intracameral dexamethasone predispose to glaucoma after paediatric cataract surgery. J Cataract Refract Surg, 2012; 38(10): 1719-23.
8. Gills JP and Gills P. Effect of intracameral triamcinolone to control inflammation following cataract surgery. J Cataract Refract Surg, 2005; 31(8): 1670–1671.
9. Kwak HW and D'Amico DJ. Evaluation of the retinal toxicity and pharmacokinetics of dexamethasone after intravitreal injection. Arch Ophthalmol, 1992; 110(2): 259–266.
10. Fraunfelder FT and Fraunfelder FW. Drug-induced Ocular Side Effects. 5th ed. Boston: Butterworth-Heinemann, 2001.
11. Tan DTH, Chee SP, Lim L etal. Randomized clinical trial of new dexamethasone delivery system (Surodex) for the treatment of post cataract surgery inflammation. Ophthalmology, 1999; 106: 223-31.
12. Chang DT, Herceg MC, Bilonick RA etal. Intracameral dexamethasone reduces inflammation on the first postoperative day after cataract surgery in eyes with and without glaucoma. Clin Ophthalmol, 2009; 3: 345-55.
13. Hatou S, Yamada M, Mochizuki H, Shiraishi A etal. The effects of dexamethasone on the Na,K-ATPase activity and pump function of corneal endothelial cells. Curr Eye Res., 2009; 34(5): 347-54.
14. Birnbaum F, Maier P and Reinhard T. [Intracameral application of corticosteroids for treating severe endothelial rejection after penetrating keratoplasty] Ophthalmologe, 2007; 104(9): 813-6.