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**TO COMPARE THE SAFETY AND EFFICACY OF DIFLUPREDNATE 0.05% EMULSION AND PREDNISOLONE ACETATE 1% IN THE POST OPERATIVE INFLAMMATION FOLLOWING CATARACT EXTRACTION WITH IOL IMPLANTATION**Bahubali Jain<sup>1</sup>, M. Shrivastawa<sup>2</sup>**HOW TO CITE THIS ARTICLE:**

Bahubali Jain. "To Compare the Safety and Efficacy of Difluprednate 0.05% Emulsion and Prednisolone Acetate 1% in the Post- Operative Inflammation Following Cataract Extraction with IOL Implantation". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 53, October 16; Page: 12341-12343, DOI: 10.14260/jemds/2014/3630

**ABSTRACT:** 50 patients underwent cataract extraction with IOL implantations were studied for post-operative inflammation, visual outcome and corneal edema. They were divided in two groups of 25 patients each. Group A received Difluprednate 1 drop 4 times per day for 14 day, next 14 day tapering dose and next 14 day on observation. Group B received prednisolone acetate 1% 6 time for 14 day, and then on tapering dose for next 4 weeks. Difluprednate reduces post- operative inflammation more effectively than prednisolone acetate (PA) resulting in more rapid recovery of vision. This paper will discuss these finding in details.

**KEYWORDS:** PA, AC.

**INTRODUCTION:** Controlling and preventing inflammation is the most important concern of the ophthalmologist in achieving optimal results following surgery. Earlier prednisolone acetate 1% suspension was gold standard for post cataract surgery patients but now difluprednate, a new potent steroid is available in market with broad spectrum anti-inflammatory activity.

While several steroids have been introduced over the last few decades, difluprednate is the first to be more potent than prednisolone acetate, which has been considered the "gold standard" and indeed has enjoyed a status as the "go-to" steroid for many inflammatory conditions.

**MATERIAL AND METHODS:** 50 patients underwent cataract extraction with IOL implantation was studied for post-operative inflammation, visual outcome and corneal edema. They were divided in two groups of 25 patients each.

**Group A:** 25 patients received Difluprednate 1 drop 4 times per day for 14 day, next 14 day tapering dose and next 14 day on observation.

**Group B:** 25 patients received prednisolone acetate 1% 6 time for 14 day, and then on tapering dose for next 4 weeks.

Signs of postoperative inflammation including cells in anterior chamber (AC) and flare. Corneal edema examined over slit lamp biomicroscopy. Also IOP was measured in the operated eye with Goldmann applanation tonometer.

All observation was made by same specialist who performed surgery. Compound observation were analyzed statistically for significance by paired 't' test.

**RESULTS:**

P/O VISITS	Group A Patients no.	%of group A patients	Group B patients	% of patients
DAY 5	5	20	1	4
DAY 14	19	76	16	64
AC cells clearing				

**CORNEAL EDEMA CLEARING ON 5<sup>th</sup> DAY:**

- Group A- 16 Patients (64%).
- Group B -10 patients (40%).

**Best corrected visual acuity at first follow up:**

- Group A-0.09 log MAR line.
- Group B -0.13 log MAR line.

**Mean IOP increase**

- Group A-3.5 mm Hg.
- Group B-1.2 mm Hg.

**CONCLUSION:** Difluprednate reduces post-operative inflammation more effectively than prednisolone acetate (PA) resulting in more rapid recovery of vision. difluprednate was superior in protecting the cornea and reducing uveitis after cataract surgery at lesser time and with lesser dose.

Though it induces increase in IOP little bit but it was not significant as IOP returns to baseline after discontinuing difluprednate.

**REFERENCES:**

1. El-Harazi SM, Feldman RM. Control of intra-ocular inflammation associated with cataract surgery. *Curr Opin Ophthalmol.* 2001; 12 (1): 4–8.
2. Durezol® (difluprednate ophthalmic emulsion, 0.05%) Package Insert. Alcon Laboratories, Inc, Fort Worth, TX.
3. Apt I, Hendrick A, Silverman L. Patient compliance with use of topical ophthalmic corticosteroid suspensions. *Am J Ophthalmol.* 1979; 87 (2): 210–214.
4. Stringer W, Bryant R. Dose uniformity of topical corticosteroid preparations: difluprednate ophthalmic emulsion 0.05% versus branded and generic prednisolone acetate ophthalmic suspension 1%. *Clin Ophthalmol.* 2010; 5 (4): 1119–1124.
5. Tajika T, Waki M, Tsuzuki M, Kida T, Sakaki H. Pharmacokinetic features of difluprednate ophthalmic emulsion in rabbits as determined by glucocorticoid receptor-binding bioassay. *J Ocul Pharmacol Ther.* 2011; 27 (1): 29–34.
6. Bush IE, Mahesh VB. Metabolism of 11-oxygenated steroids. 3. Some 1-dehydro and 9 alpha-fluoro steroids. *Biochem J.* 1964; 93 (2): 236–255.
7. Wang RIH, Sytkowski A, Shetty KR. Relating corticosteroid structure and function. *Drug Ther.* 1975; 143–148.

## ORIGINAL ARTICLE

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8. Bartlett JD, Bennett ES, Fiscella RG, Jaanus SD, Zimmerman TJ. Ophthalmic Drug Facts. 19 ed. St Louis, MO: Wolters Kluwer; 2008.
9. Hammer S, Spika I, Sippl W, et al. Glucocorticoid receptor interactions with glucocorticoids: evaluation by molecular modeling and sdfsd functional analysis of glucocorticoid receptor mutants. Steroids. 2003; 68 (4): 329–339.
10. Holte K, Kehlet H. Perioperative single-dose glucocorticoid administration.

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