

A STUDY OF VISUAL OUTCOME AFTER IMMEDIATE PARACENTESIS IN CASE OF PHACOLYTIC GLAUCOMATanushree V¹, C. N. Madhusudhan², H. T. Venkate Gowda³**HOW TO CITE THIS ARTICLE:**

Tanushree V, C. N. Madhusudhan, H. T. Venkate Gowda. "A Study of Visual Outcome after Immediate Paracentesis in Case of Phacolytic Glaucoma". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 17, February 26; Page: 2943-2947, DOI: 10.14260/jemds/2015/424

ABSTRACT: AIM: To evaluate the role of anterior chamber paracentesis in control of Intraocular pressure and visual outcome in patients with phacolytic glaucoma. **SETTINGS AND DESIGN:** Prospective study. **MATERIALS AND METHODS:** Prospective analysis was done over a period of 6 months from August 2014 to January 2015. Informed and written consent was taken from all patients. After necessary ocular and systemic examination and investigations, paracentesis was done in patients with phacolytic glaucoma prior to cataract surgery. On admission day, Presenting IOP and visual acuity was recorded. Intraocular pressure was recorded 3 hrs later following paracentesis by Applanation tonometry. Post-operative improvement in best corrected visual acuity was recorded on Day 2, Day 7 and Day 30 following cataract surgery. **RESULTS:** In our study we see that intraocular pressure recorded after 3 hrs in paracentesis patients should drastically reduce, in which 18 patients (60%) the IOP were in the range of 11-15 mm Hg. About 19(63.3%) showed 1 month postoperative Snellen's chart visual acuity in the range of 6/60- 6/18. **CONCLUSION:** Immediate paracentesis in phacolytic glaucoma patients is an effective procedure which causes significant reduction in intraocular pressure and improvement in postoperative visual acuity which obliterated the requirement for IV Mannitol in most of the patients prior to cataract surgery.

KEYWORDS: Phacolytic glaucoma, paracentesis, Intraocular pressure, visual outcome.

INTRODUCTION: Phacolytic glaucoma is a type of secondary glaucoma caused by a leaking mature or hypermature (Rarely immature) cataract. phacolytic glaucoma occurs in cataractous lenses with intact lens capsules. The available evidence implicates direct obstruction of outflow pathways by lens protein released from microscopic defects in the lens capsule. The high molecular weight proteins found in cataractous lenses produce outflow obstruction in experimental perfusion studies similar to that found in phacolytic glaucoma.^[1,2,3] Although a macrophagic response is typically present, macrophages are believed to be a natural response to lens protein in the anterior chamber rather than the cause of the outflow obstruction. The possibility of 2 forms of phacolytic glaucoma was proposed in a recent report: (1) a more acute presentation caused by rapid leakage of lens proteins that occlude the trabecular meshwork and (2) a more gradual presentation with macrophages resulting from an immunologic response to lens proteins in the anterior chamber.^[4]

Initial treatment of phacolytic glaucoma is focused upon acute lowering of IOP using a combination of topical and systemic IOP-lowering agents. Topical steroids also may facilitate IOP lowering by reducing inflammation and decrease pain. Medical therapy is only a temporizing measure until cataract surgery can be scheduled.

We conducted this study to know the efficacy of the paracentesis in patients with phacolytic glaucoma with respect to IOP control and improvement in postoperative visual acuity following cataract surgery.

MATERIALS AND METHODS:

Source of Data: Thirty patients diagnosed to have phacolytic glaucoma attending the outpatient & inpatient department, department of Ophthalmology, K. R. Hospital, attached to Mysore Medical College & Research Institute, Mysore fulfilling the inclusion criteria framed were included in the study.

Type of Study: Prospective type.

Duration of Study: August 2014 to January 2015.

Inclusion Criteria: All cases of phacolytic glaucoma.

Exclusion Criteria: Phacomorphic, lens particle and phacotopic glaucomas.

METHOD OF STUDY: Prospective analysis was done over a period of 6 months from August 2014 to January 2015. Informed and written consent was taken from all patients. After necessary ocular and systemic examination and investigations, paracentesis was done in patients with phacolytic glaucoma prior to cataract surgery. Presenting IOP and visual acuity was recorded. Intraocular pressure was recorded 3 hrs later following paracentesis by Rebound tonometry. Post-operative improvement in best corrected visual acuity was recorded on Day 2, Day 7 and Day 30 following cataract surgery.

RESULTS: In the present study prospective analysis was done on 30 patients with phacolytic glaucoma. Majority of the patients were in the age group of 61-70 years. Majority were all male patients. Preoperative Intraocular pressure and visual acuity was recorded before paracentesis. In our study intraocular pressure recorded after 3 hrs in paracentesis patients should drastically reduce, in which 18 patients (60%) the IOP were in the range of 11-15 mm Hg. About 19(63.3%) showed 1 month postoperative Snellen's chart visual acuity in the range of 6/60- 6/18.

DISCUSSION: Patients with phacolytic glaucoma typically have a history of gradual vision loss for months or years prior to the acute onset of pain and redness.^[5] Vision may only be PL+ or inaccurate light perception due to the density of the cataract. Symptoms mimic acute angle-closure glaucoma. The history of slow vision loss due to advancing cataract preceding the acute onset of symptoms is a vital clue to the correct diagnosis.

Intraocular pressure (IOP) is elevated severely in phacolytic glaucoma.^[6] Slit lamp examination of phacolytic glaucoma typically reveals microcystic corneal edema, and the anterior chamber contains intense flare, large cells (Macrophages), and aggregates of white material and iridescent or hyperrefringent particles. The latter represent calcium oxalate and cholesterol crystals being liberated from the degenerating cataractous lens. Unlike uveitic glaucoma (Such as that seen in phacoanaphylactic glaucoma), no keratic precipitates typically are present.^[7]

Initial treatment of phacolytic glaucoma is focused upon acute lowering of IOP using a combination of topical and systemic IOP-lowering agents. Topical steroids also may facilitate IOP lowering and decrease pain. Medical therapy is only a temporizing measure until cataract surgery can be scheduled. In our study immediate paracentesis was done in patients with phacolytic glaucoma prior to cataract surgery.

ORIGINAL ARTICLE

CONCLUSION: Immediate paracentesis in phacolytic glaucoma patients is an effective procedure which causes significant reduction in intraocular pressure and improvement in postoperative visual acuity which obliterated the requirement for Inj. Mannitol in most of the patients prior to cataract surgery.

REFERENCES:

1. Kim IT, Jung BY, Shim JY. Cholesterol crystals in aqueous humor of the eye with phacolytic glaucoma. *J Korean Ophthalmol Soc.* Sept 2000; 41(9):2003-7.
2. Mavranakas N, Axmann S, Issum CV, Schutz JS, Shaarawy T. Phacolytic Glaucoma. *J Glaucoma.* 2011; 49 (1):10-11.
3. Khandelwal R. Ocular snow storm: an unusual presentation of phacolytic glaucoma. *BMJ Case Rep.* 2012: 2012.
4. Mavranakas N, Axmann S, Issum CV, Schutz JS, Shaarawy T. Phacolytic glaucoma: are there 2 forms. *J Glaucoma.* Apr-May 2012; 21(4): 248-9.
5. Pradhan D, Hennig A, Kumar J. A prospective study of 413 cases of lens-induced glaucoma in Nepal. *Indian J Ophthalmol.* 2001; Jun; 49 (2): 103-7.
6. Mandal AK, Gothwal VK. Intraocular pressure control and visual outcome in patients with phacolytic glaucoma managed by extracapsular cataract extraction with or without posterior chamber intraocular lens implantation. *Ophthalmic Surg Lasers.* Nov 1998; 29(11):880-9.
7. Allingham RR, Damji KD, Freedman S. Glaucomas associated with disorders of the lens: phacolytic (Lens protein) glaucoma. In: Shields Textbook of Glaucoma. 2005. 5th ed. Philadelphia: Lippincott Williams & Wilkins; 262-3.

RANGE OF AGE (In yrs.)	NO.	PERCENTAGE
50-60	10	33.3
61-70	17	56.6
71-80	03	10
TOTAL	30	100

TABLE 1: AGE DISTRIBUTION

GENDER	NO.	PERCENTAGE
MALE	17	56.6
FEMALE	13	43.3
TOTAL	30	100

TABLE 2: SEX DISTRIBUTION

ORIGINAL ARTICLE

IOP RANGE(mm Hg)	NO.	PERCENTAGE
30-40	02	6.6
41-50	18	60
51-60	10	33.3
TOTAL	30	100

TABLE 3: INTRAOCULAR PRESSURE IN PHACOLYTIC GLAUCOMA PATIENTS BEFORE PARACENTESIS

BCVA	NO.	PERCENTAGE
HM+	10	33.3
PL+, PR+	18	60
PL -	2	6.6
TOTAL	30	100

TABLE 4: PREOPERATIVE VISUAL ACUITY

IOP RANGE (mm Hg)	NO.	PERCENTAGE
16-20	02	6.6
11-15	18	60
5-10	10	33.3
TOTAL	30	100

TABLE 5: INTRAOCULAR PRESSURE AFTER 3 HRS IN PHACOLYTIC GLAUCOMA PATIENTS FOLLOWING IMMEDIATE PARACENTESIS

BCVA	NO.	PERCENTAGE
6/60- 6/18	02	6.6
CF at 3m – 5m	19	63.3
CF at 1m-2m	04	13.3
HM+	05	16.6
TOTAL	30	100

TABLE 6: POSTOPERATIVE VISUAL ACUITY DAY 2

BCVA	NO.	PERCENTAGE
6/60- 6/18	14	43.6
CF at 3m – 5m	10	33.3
CF at 1m-2m	05	16.6
HM+	01	3.3
TOTAL	30	100

TABLE 7: POSTOPERATIVE VISUAL ACUITY DAY 7

ORIGINAL ARTICLE

BCVA	NO.	PERCENTAGE
6/60- 6/18	19	63.3
CF at 3m – 5m	10	33.3
CF at 1m-2m	01	3.3
TOTAL	30	100

TABLE 8: POSTOPERATIVE VISUAL ACUITY DAY 30

AUTHORS:

1. Tanushree V.
2. C. N. Madhusudhan
3. H. T. Venkate Gowda

PARTICULARS OF CONTRIBUTORS:

1. Senior Resident, Department of Ophthalmology, Mysore Medical College and Research Institute, Mysore.
2. Assistant Professor, Department of Ophthalmology, Mysore Medical College and Research Institute, Mysore.
3. Professor & HOD, Department of Ophthalmology, Mysore Medical College and Research Institute, Mysore.

FINANCIAL OR OTHER

COMPETING INTERESTS: None

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Madhusudhan C. N,
#F 34, Fort Mohalla,
New Sayyaji Rao Road,
Mysore-570004.
E-mail: drcnms@yahoo.com

Date of Submission: 28/01/2015.
Date of Peer Review: 29/01/2015.
Date of Acceptance: 17/02/2015.
Date of Publishing: 25/02/2015.