DOI: 10.7860/JCDR/2016/21981.9037

Original Article

Ophthalmology Section

Study of Variation in Intraocular Pressure Spike (IOP) Following Nd- YAG Laser Capsulotomy

NIHARIKA K SHETTY[1], SRIYA SRIDHAR[2]

ABSTRACT

Introduction: Posterior Capsular Opacifications (PCO) is a frequent complication of cataract surgery following posterior chamber intraocular lens implantation.

Nd –Yag laser capsulotomy is the treatment of choice for PCO and is known to be associated with complications like Raised Intraocular Pressure (IOP), Intraocular lens pitting, intraocular lens cracks, cystoid macular oedema, retinal detachment, corneal burns. Raised IOP is the most common complication and prescribing anti-glaucoma drugs post capsulotomy is a common practise.

Our study helps us to anticipate the post procedural IOP rise in specific patients and treat only selected group of patients with anti- glaucoma medications.

Aim: To study and correlate the effect of energy used and number of shots with post procedural IOP spike following Nd-YAG laser capsulotomy cases.

Materials and Methods: All patients with PCO presenting to Ophthalmology Out Patient Department at Sri Siddhartha Medical College between November 2014 to November 2015 were included. All the patients with glaucoma, uveitis and high myopia were excluded from the study. Data relevant to history, ocular examination and IOP were recorded.

Results: Significant correlation of IOP spike with the number of Nd- YAG Laser shots delivered was found by One-way ANOVA Post-Hoc Tukeys Test. The p-value was significant for shots more than 40, provided the energy was restricted to 20 mJ and below. Correlation of energy with IOP spike was not significant as found by One-way ANOVA, Post-Hoc Tukey test. Predictability of 2 hours post-procedure IOP regarding persistent IOP rise was significant.

Conclusion: It was observed that all pseudophakic patients may not require anti-glaucoma medication pre, or post Nd YAG laser capsulotomy. Only patients who required more than 40 shots during the procedure would need a close observation and if persistent rise is documented, ocular hypotensives may be advised.

Keywords: Acoustic shock, Capsulotomy, Elschenigs pearl, Glaucoma, Posterior capsular opacity, Pseudophakia

INTRODUCTION

Cataract is the major cause of blindness in India accounting for about 62.6% amongst all the causes for blindness [1]. Extra capsular cataract extraction with posterior chamber IOL implantation is the commonest ocular surgery performed at all the eye care centres. Posterior capsular opacification is a frequent complication of cataract surgery with posterior chamber IOP implantation [2]. It varies from 7% to 31% by 2 years post-operatively [3]. Nd-Yag laser capsulotomy is a safe, non–invasive and time trusted procedure for PCO. In post Yag Capsulotomy the common complications documented are IOP rise, hyphaema, cystoid macular oedema, corneal haze, uveitis, IOL pits and retinal detachments. IOP spike is the most frequent of all [4].

It has been postulated that the increase in IOP post Yag capsulotomy is due to reduced outflow facility because of blockage of trabecular meshwork by the capsular debris, vitreous particles floating in the anterior chamber, depending on the size of capsulotomy and other humoral factors [5-7].

Kraff and co-authors have found that the IOP spike post capsulotomy is lower in pseudophakes compared to aphakes, as IOL would block the capsular and vitreal debris reaching the anterior chamber which blocks the trabecular meshwork [8,9]. The maximum rise is seen 2-4 hours post-procedure.

Most ophthalmologists prescribe antiglaucoma medications for the first week post-procedure. The drugs preferred are α 2 adrenergic receptor agonists as ocular hypotensives. Patients who have been documented with glaucoma need to be monitored more frequently and require pre-procedure antiglaucoma drugs too.

In our study we tried to correlate the energy used and the number of shots delivered for the laser to the IOP spike recorded post-procedure. This correlation will help us to determine those patients who require prophylactic antiglaucoma drugs and a more closer follow-up. This will avoid the emperic usage of antiglaucoma drugs in all the pseudophakes undergoing laser capsulotomy.

Thus, not all patients will require a post-procedure medication and regular visit to the hospital.

MATERIALS AND METHODS

All patients of pseudophakia with PCO attending the Ophthalmology Out Patient Department at Sri Siddhartha Medical college from November 2014 to November 2015 were randomly selected and included in the study. The patients having PCO following cataract surgery, with no other complications were included in the study. Patients with Glaucoma, Uveitis, High-Myopia and posterior segment disorder were excluded from the study. A total of 35 patients were included and the results were drawn. The patients were subjected to visual acuity testing, slit lamp examination for type of PCO, position of IOL, pre- procedure refractive status check up, fundus examination, Autorefractometer evaluation and IOP measurement using Goldmanns applanation tonometer.

Post-procedure the IOP was evaluated immediate post-procedure, two hours post–procedure and one week from the date of laser. Immediate Post-Procedure the patients were evaluated for visual acuity, slit lamp biomicroscopy for the size of capsulotomy and post-procedure Refractive shift.

The patients with glaucoma, uveitis, high myopia, diabetic retinopathy, cystoid macular oedema were excluded. Most common Type of PCO was Elschneigs pearl variety.

RESULTS

Results are shown in [Table/Fig-1-9].

Post- Hoc Analysis

2 hr post-hoc analysis: Between 41-50 and 0-10 group p<0.05, Between 41-50 and 11-20 p<0.05, Between 41-50 and 31-40 p<0.05, Between 41-50 21-30 p<0.05.

IOP was significantly higher with number of shots 41-50.

7 days Post-hoc Analysis

Between 41-50 and 0-10 group p<0.05, Between 41-50 and 11-20 p<0.05, Between 41-50, 21-30 p<0.05.

IOP was significantly higher with number of shots > 40.

Between 31-40 and 0-10 p<0.05, Between 31-40 and 11-20 p<0.05, Between 31-40 and 21-30 p<0.05.

Gender	No of Patients n=35	Percentage
Male	21	60
Female	14	40

[Table/Fig-1]: Demographic data of the patient. n= number of patients

Age Group in yrs	No of patients, n=35	Percentage
<40	1	2.85
41-50	4	11.42
51-60	8	22.85
61-70	16	45.71
71-80	6	17.14

[Table/Fig-2]: Age group.
n= Number of patients, Yrs= age in years

Visual Acuity on Snellens Chart	No of Patients, n=35	Percentage
1/60- 3/60	5	14.28
4/60- 6/60	4	11.43
6/36- 6/18	22	62.85
6/12- 6/6	4	11.43

[Table/Fig-3]: Visual acuity at presentation.
n= number of patients

PCO Morphology	No of patient, n=35	Percentage
Membranous	5	14.29
Elschneigs pearls	26	74.28
Sommerings Ring	4	11.43

[Table/Fig-4]: Morphological type PCO.
PCO= Posterior Capsular Opacification, n = Number of patients

Spherical Error in Diopters	No of patients, n= 35	Percentage
+ 2.25 to + 3.00	3	8.57
+1.25 to + 2.00	12	34.28
+0.25 to +1.00	7	20
-0.25 to -1.00	10	28.57
-1.25 to -2.00	1	2.86
-2.25 to -3.00	2	5.71

[Table/Fig-5]: Spherical refractive error at presentation.
n= Number of patients.

Spherical Error in Diopters	No of patients, n= 35	Percentage
+ 2.25 to + 3.00	2	5.71
+1.25 to + 2.00	7	20
+0.25 to +1.00	13	37.14
-0.25 to -1.00	8	22.86
-1.25 to -2.00	2	5.71
-2.25 to -3.00	2	5.71

[Table/Fig-6]: Post-procedure spherical error shift.
n= Number of patients.

IOP was significantly higher with number of shots 31-40.

No significant difference was found in IOP between 41-50 and 31-40 shots group.

IOP correlation with energy did not show p-value to be significant.

Cylindrical error @ 180±30^0	No of Patients, n= 35	Percentage
-0.25 to -1.00	8	22.85
-1.25 to – 2.00	14	40
-2.25 to -3.00	7	20
-3.25 to -4.00	3	8.57
-4.25 to -5.00	3	8.57

[Table/Fig-7]: Cylindrical error of patients on presentation.
n= number of patients

Cylindrical error @ 180±30^0	No of Patients ,n= 35	Percentage
-0.25 to -1.00	10	28.57
-1.25 to – 2.00	11	31.43
-2.25 to -3.00	11	31.43
-3.25 to -4.00	3	8.57
-4.25 to -5.00	0	0

[Table/Fig-8]: Post-procedure cylindrical error.
n= number of patients

Parameters	0-10 shots	11-20 shots	21-30 shots	31-40 shots	41-50 shots	p- value
Baseline IOP (Mean±SD)	16±2.67	14.01±2.22	15.25±1.56	17±0.8	18±2	0.11
Immediate post-procedure IOP (Mean+SD)	17±2.67	15.67±2.03	15.75±1.61	17±0.8	20±2	0.07
2hrs post-procedure IOP (Mean+SD)	18±2.67	19.44±2.05	20±1.78	21±1.6	30±1	<0.0001
7 days post-procedure IOP (Mean+SD)	16±2.67	15.8±1.73	15.5±1.44	20.5±1.2	24±1	<0.0001

[Table/Fig-9]: Correlation of IOP Spike with Number of shots.
One-way ANOVA with Post-hoc Tukey's test for significance
p<0.05 considered as significant

Parameters	2-5 MJ	8-11 MJ	11-14 MJ	5-8 MJ	p-value
Baseline IOP (Mean±SD)	15.68±2.34	15.56±0.93	16	-	0.98
Immediate post-procedure IOP (Mean±SD)	16.64±2.22	15.78±1.1	16	--	0.68
2hrs post-procedure IOP (Mean±SD)	20.8±3.04	21.3±2	20	-	0.91
7 days post-procedure41 (Mean±SD)	16.56±2.64	16.67±1.6	20	-	0.598

[Table/Fig-10]: Correlation of IOP Spike with the intensity of energy.
MJ= millijoules, IOP= Intraocular pressure, Hrs= Hours, SD = Standard deviation.

DISCUSSION

In our study group we had 21 males (60%) and 14 (40%) females [Table/Fig-1] amongst whom 68.6% were in 50-70 years age group [Table/Fig-2]. This was the commonest age group who undergo cataract surgery. In a similar study by Ronald Holweger et al., 57.42% patients were females and 42.57% of the patients were males [10].

Pre-procedure visual acuity estimation showed that 62.85% patients had a Vision range of 6/36 to 6/18 on Snellens visual acuity chart and 25.71% patients had a vision recordind of < 6/60 [Table/Fig-3]. The commonest type of PCO in our study group was Elschneigs pearl as seen in 74.28% of cases [Table/Fig-4]. The study by Ronald

Holweger et al., showed 61.38% patients had Elschneigs pearl in 61.38% of cases, fibrous PCO in 28.71% cases and mixed type in 9.1% of cases [10].

The spherical refractive error range in our study group at presentation was between +1.25 to 3.0 Dsph in 15 (42.85%) patients which reduced to 9(25.71%) patient post YAG laser capsulotomy [Table/Fig-5,6]. Hyperopic shift was observed explaining the posterior displacement of IOL post-procedure. Maximum Patients were in the refractive error range of -1.00 Diopter Sphere to + 1.00 Diopter Sphere post-procedure. There was a reduction in the hyperopic error post-procedure. It was noted at presentation that maximum patients, 12 (34.28%) were in the +1.25 to +2.00 range whereas post-procedure maximum patients, that is, 13 (37.1%) patients were in +0.25 to +1.00 group, again showing a Hyperopic error. Patients presenting with myopic refractive error pre- procedure were reduced and shifted towards the hyperopic group. We maintained our capsulotomy size to about 3 to 3.5mm in size in all the patients. Dual beam partial coherence interferometry has documented that Nd YAG laser capsulotomy induces a backward movement of the IOL. Hence a larger capsulotomy causes more backward movement with a hyperopic shift [11,12].

However, Thornval et al., didn't observe a change in refractive error post YAG capsulotomy in their study [13]. In a study by EyyupKarahan et al., hyperopic shift was higher in patients with capsulotomy size larger than 3.9 mm when compared with patients with smaller capsulotomy sizes [12]. A study by Zaidi et al., also demonstrated a hyperopic shift [14].

In our study group 14(40%) cases were having a cylindrical error in the range of -1.25 to -2.00 Cylinder @ 180±30 which was found in only 11 (31.42%) cases post-procedure. Similarly the 7 (20%) cases who had a cylindrical error in -2.25 to 3.00 increased to 11(31.42%) cases [Table/Fig-7,8]. Hence we found a myopic shift in the cylindrical error in our patients post YAG laser capsulotomy.

In a study by Violette V, Jan Willem et al., they found a clinically relevant change in the subjective refraction after ND YAG Laser Capsulotomy in approximately 7% of cases. However, they didn't find a significant correlation of the astigmatic error change following Nd YAG capsulotomy [15].

In our study maximum patients, about 18 (51.42%) were in the 11 to 20 shots range. No significant change was seen in IOP immediate post-procedure but an IOP rise was documented 2hours post-procedure in all the patients. In patients who received less than 30 shots, IOP rise was not seen to be significant immediate post-procedure [Table/Fig-9]. On applying One-way ANOVA test with Post-hoc Tukeys test for significance, $p< 0.05$ considered as significant, we found that IOP was significantly higher with number of shots between 31-40, 41-50, > 40 shots. (Analysis in [Table/Fig-9]). In the patients who received more than 30 shots the IOP rise persisted even after 7 days and these patients were observed for 7 days and then started on anti-glaucoma medication. The patients who received more than 40 shots had a significant rise in IOP and required treatment in form of anti-glaucoma medications immediately after the procedure for one week post-procedure.

We observed that, almost all the patients had a rise in IOP 2 hours post-procedure irrespective of the number of shots. Hence IOP documentation of IOP 2 hours post-procedure was observed to be more predictive of persistent IOP rise compared to immediate post-procedure IOP.

In a study by Manav Singh, Nidhi Sharma et al., the rise of IOP from baseline to 1 hour, 3 hour, 5 hour and 24 hours post-procedure was not found to be significant in the groups receiving ocular hypotensive drug.

In the group receiving placebo, the rise of IOP reached statistical significance at 1, 3 and 5 hours post laser which came down to insignificant levels at 24 hours [16]. However, we didn't use ocular hypotensive, we also found a rise in IOP post-procedure at the end of 2 hours.

In a study by Kraff et al., they found that post yag IOP rise was lesser in pseudophakics as the IOL blocked cortical material from reaching trabecular meshwork and clogging with particulate matter [8].

Ge et al., found IOP rise to be more significant in glaucomatous than non glaucomatous patient, 1 hour post-capsulotomy [17]. Shani et al., could not find any elevation of IOP and postulated that healthy pseudophakic eyes do not generally show elevation of IOP after Nd:YAG laser capsulotomy [18]. Ari et al., also did not find any persistent rise in IOP [19].

However, none of the studies correlated the number of shots to the IOP spike. We found that patients Who received more than 30 shots showed significant change in IOP and those having received more than 40 shots had significant rise requiring anti-glaucoma medications as the rise was persistent at the end of 1st week.

Neodymium: YAG laser capsulotomy can cause short- and long-term IOP elevations that could possibly induce subsequent glaucoma and damage to the optic nerve. The underlying mechanism to this IOP rise after Nd:YAG laser capsulotomy remains unclear. Proposed mechanisms include effects to the ciliary body caused by the laser shock waves, a neurohumoral increase in the IOP, structural effects of laser energy on sodium hyaluronate of the vitreous and finally mechanical blockage of the trabeculum with various debris such as fragments from the disrupted posterior capsule or vitreous [20,21]. We observed that if more than 30 shots were given the patients developed post-procedure IOP rise. These patients required anti glaucoma medications after the laser treatment.

Higher, elevation of IOP in larger capsulotomy shows that the size of the Nd:YAG capsulotomy is a serious factor in Nd:YAG capsulotomy regardless of the used energy probably due to released inflammatory products [16]. Following Nd:YAG Capsulotomy the IOP elevation is due to reduced out flow facility due to blockage of trabecular Meshwork by capsular debris, vitreous material and other Humeral factors [16].

According to study by Mary Lynch, Harry et al., the outflow facility of acqueous decreased by 80% from baseline at 3 hours, 1 day, 3 days and 1 week. After laser treatment the anterior chamber and meshwork contained fibrin, lens material, inflammatory cells pigmented macrophages, and erythrocytes which lead to reduced outflow facility and increased IOP [22].

In a study by Channell MM, Beckman et al., All eyes in which IOP increased more than 5 mm Hg showed the increase within the first 48 hours. Minimizing debris, shock waves and thorough post-operative pressure monitoring was recommended in all patients by them [23]. In a study by Richter CU, Arzeno G et al., the mean outflow facility was reduced from 0.18 microl/min/mmHg before capsulotomy to 0.08 microl/min/mmHg (55%, $p<0.0001$) at four hours and was still decreased at 0.13 microl/min/mmHg (27%, P less than 0.05) at one week. They also recommended that IOP measurement to be done in all patients post Laser and at 3 hours post laser. They also recommended close follow-up of patients who had IOP elevation more than 5mmhg at end of 1 hour [24].

Hence probably high amount of acoustic shock waves following more number of shots may be the contributory factors for IOP rise in our patient.

In our study group, maximum patients i.e., 25(71.42%) were exposed to 2 to 5 MJ of energy for capsulotomy and there was not a significant rise immediate post-procedure. However, 2 hours post-procedure a rise in IOP was seen in almost all patients. However, the IOP reduced to baseline without any intervention. According to One-way ANOVA with Post-Hoc Tukey s test the p-values were above 0.05 and hence it was not significant [Table/Fig-10].

Also, in our study we didn't notice a persistent change in IOP requiring any intervention in patients exposed to energy levels from

2 mJ to 11 mJ. However all patients showed a transient rise in IOP post-procedure at 2 hours. In our study only 1 patient (2.87%) showed IOP rise of 4mmHg which persisted till 7 days, however no intervention was done as the IOP was within the normal population range. Thus no significant correlation of energy with IOP spike was found in our study.

In a study by Muhammed Waseem et al., the low energy group were exposed to laser energies below 50 mJ with a mean energy of 36.46±6.42 mJ and the high energy group had IOP above 50mmHg with a mean of 56.84±2.65 Mj [25]. In their study they found rise of about 5.51±1.58 mmHg in the high energy group and 3.83±1.84 inthe low energy groups.

In our study patients were exposed to 2-14 mJ of energy and only rise was seen in the group who were exposed to 11-14 Mj upto 4mmHg. However, the IOP rise was within the normal range of IOP and hence was observed and no intervention was done.

LIMITATION

We would like to recommend a larger sample size for this study. Also, the various Nd- YAG Laser machines may have different attenuation windows which may deliver different energy levels with the same number of shots. These limitations should be kept in mind before interpreting the results.

CONCLUSION

Nd – Yag capsulotomy is a common OPD procedure and the most common complication seen post YAG capsulotomy is increase in IOP. The commonest type of PCO in our study was Elschenigs pearl variety. We found a correlation of the IOP spike with the number of shots given for performing of the IOP as long as the energy levels are maintained less than 20 mJ. We didn't find a direct correlation of IOP spike with energy levels as we limited ourselves to low energy levels of less than 20 mJ as the commonest PCO observed was Elschenigs pearl type which can be cleared with low energy levels.

In our observation if the patient were exposed to more than 40 shots the IOP rise was significant and needed to be observed for persistent rise. The 2 hour post YAG IOP was most predictable of IOP rise in the patient hence 24 hour observation may not be required.

Hence, we conclude that not all pseudophakic patients will require anti-glaucoma medication pre, or post Nd- YAG capsulotomy. Only patients who required more than 40 shots during the procedure would need a close observation and if persistent rise is documented, ocular hypotensives may be advised.

REFERENCES

[1] National Program for Control of Blindness, Ministry of Health and Family Welfare, Government of India. 2016.
[2] Migliori M. Intraocular Pressure Changes After Neodymium-YAG Laser Capsulotomy in Eyes Pretreated With Timolol. *Archives of Ophthalmology*. 1987;105(4):473.
[3] Auffarth G, Brezin A, Caporossi A, Lafuma A, Mendicute J, Berdeaux G, et al. Comparison of Nd: YAG capsulotomy rates following phacoemulsification with implantation of PMMA, silicone, or acrylic intra-ocular lenses in four European countries. *Ophthalmic Epidemiology*. 2004;11(4):319-29.
[4] Winslow R, Taylor B. Retinal complications following YAG laser capsulotomy. *Ophthalmology*. 1985;92(6):785-89.
[5] Alimanovic-Halilovic E. Complications in the posterior eye segment after Nd: YAG laser capsulotomy. *Med Arh*. 2004;58:7-9.
[6] Slomovic A, Parrish R. Acute elevations of intraocular pressure following nd:yag laser posterior capsulotomy. *Ophthalmology*. 1985;92(7):973-76.
[7] Parker WT, Lorfeine GS. Yag Capsulotomy and IOP Rise. *Ophthalmic Surg*. 1984;15:787-92.
[8] Kraff CM, Sauders DR, Liebermann HL. Intraocular pressure and the corneal endothelium after Nd. Yag laser posterior capsulotomy. Relative effects of aphakia and pseudophakia. *Arch Ophthal*. 1985;103:511–14.
[9] Schubert H. A history of intraocular pressure rise with reference to the Nd:YAG laser. *Survey of Ophthalmology*. 1985;30(3):168-72.
[10] Holweger R, Marefat B. Intraocular pressure change after neodymium:YAG capsulotomy. *Journal of Cataract & Refractive Surgery*. 1997;23(1):115-21.
[11] [Internet]. 2016 [cited 9 August 2016]. Available from: Review of Optometry Online. How to do YAG laser procedures [Internet]. 2009 [cited 2009 Mar 3]. Available from: http://www.revoptom.com/index.asp?ArticleType=SiteSpec&Page=osc/mar01/lesson_0301.htm
[12] Karahan E, Tuncer I, Zengin M. The Effect of ND:YAG Laser Posterior Capsulotomy Size on Refraction, Intraocular Pressure, and Macular Thickness. *Journal of Ophthalmology*. 2014;2014:1-5.
[13] Thornval P, Naeser K. Refraction and anterior chamber depth before and after neodymium:YAG laser treatment for posterior capsule opacification in pseudophakic eyes: A prospective study. *Journal of Cataract & Refractive Surgery*. 1995;21(4):457-60.
[14] Zaidi M, Askari NS. Effect of Nd:YAG laser posterior capsulotomy on anterior chamber depth, Intraocular pressure, and refractive status. *J Cataract Refract Surg*. 2000;26(8):1183–89. PMID: 11008046. [PubMed]
[15] Vrijman V, van der Linden J, Nieuwendaal C, van der Meulen I, Mourits M, Lapid-Gortzak R. Effect of Nd:YAG laser capsulotomy on refraction in multifocal apodized diffractive pseudophakia. *Journal of Refractive Surgery*. 2012;28(8):545-51.
[16] Singh M. Anterior Segment Nd:YAG Laser Procedures: to Study intraocular pressure spikes and their prevention. *Delhi Journal of Ophthalmology*. 2015;26(2):2454-784.
[17] Ge J, Wand M, Chiang R, Paranhos A, Shields B. Long-term effect of Nd:YAG laser posterior capsulotomy on intraocular pressure. *Archives of Ophthalmology*. 2000;118(10):1334–37.
[18] Shani L, David R, Tessler Z, Rosen S, Schneck M, Yassur Y. Intraocular pressure after neodymium : YAG laser treatments in the anterior segment. *Journal of Cataract and Refractive Surgery*. 1994;20(4):455–58.
[19] Ari S, Cingü AK, Sahin A, Çinar Y, Çaça I. The effects of Nd: YAG laser posterior capsulotomy on macular thickness, intraocular pressure, and visual acuity. *Ophthalmic Surg Lasers Imaging*. 2012;43:395–400.
[20] Jahn C, Emke M. Long-Term Elevation of Intraocular Pressure after Neodymium: YAG Laser Posterior Capsulotomy. *Ophthalmologica*. 1996;210(2):85-89.
[21] Georgalas I. Nd: YAG capsulotomy for posterior capsule opacification after combined clear corneal phacoemulsification and vitrectomy. *Therapeutics and Clinical Risk Management*. 2009;133-37.
[22] Lynch M, Quigley H, Green W, Pollack I, Robin A. The effect of neodymium:yag laser capsulotomy on aqueous humor dynamics in the monkey eye. *Ophthalmology*. 1986;93(10):1270-75.
[23] Channell MM, Beckman H. Intraocular pressure changes after neodymium-YAG laser posterior capsulotomy. *Arch Ophthalmol*. 1984;102(7):1024-26.
[24] Richter CU, Arzeno G, Pappas HR, Steinert RF, Puliafito C, Epstein DL. Intraocular pressure elevation following Nd:YAG laser posterior capsulotomy. *Ophthalmology*. 1985;92(5):636-40.
[25] Wassem M, Khan H. Association of raised intraocular pressure and its correlation to energy used with raised versus normal intraocular pressure following nd yag laser posterior capsulotomy in pseudophakes. *Journal of the College of Physicians and Surgeons Pakistan*. 2010;20(8):524-27.

PARTICULARS OF CONTRIBUTORS:
1. Associate Professor, Department of Ophthalmology, Sri Siddhartha Medical College and Hospital, Tumakuru, Karnataka, India.
2. Post Graduate, Department of Ophthalmology, Sri Siddhartha Medical College and Hospital, Tumakuru, Karnataka, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Niharika K Shetty,
1554, Shakuntala, 13/6th Cross, Pipeline Road Prashanth Nagar, T. Dasarahalli, Bangalore -560057, Karnataka, India.
E-mail: niharika.shetty30@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Jun 10, 2016**
Date of Peer Review: **Jul 14, 2016**
Date of Acceptance: **Oct 06, 2016**
Date of Publishing: **Dec 01, 2016**