

Short Communication

The Efficacy of SLT (Selective Laser Trabeculoplasty) as Primary Treatment For Patients with Primary Open Angle Glaucoma

Mustafa Tawfiq

College of Medicine , University of Babylon , Hilla , IRAQ

E-mail : mustafatawfiq555@gmail.com

Accepted 16 June,2015

Abstract

To see the effectiveness of SLT as primary treatment for patients with primary pen angle glaucoma(poag) The study was conducted at my clinic in Al Hilla city Babylone Iraq 21 patients were treated 4 of them both eyes treated with slt all the patient were not receiving any anti glaucoma medication and follow up for one year . All the patients were having drop in their iop reading as compared to their first visit with a range of about 30% SLT is a very effective technique in lowering and controlling iop when it is used as primary treatment in patients with poag.

الخلاصة

لمعرفة مدى فعالية الليزر الحديث نوع SLT في علاج مرض داء الزرقاء ذو الزاوية المفتوحة عند استخدامه كعلاج أولي أجريت الدراسة في عيادتي في الحلة في محافظه بابل في العراق اشترك فيها ١٧ مريض وتم علاج ٢١ عينا حيث ان ٤ مرض تم علاج كلتا العينين لهم وتم متابعتهم لمدة سنة كاملة. كل المرض اللذين خضعوا للدراسة استجابوا للعلاج وتم الحصول على نسبة نزول في معدلات ضغط العين تصل إلى نحو ٣٠% ليزر ال SLT فعال جدا في السيطرة على ضغط العين في مرضى داء الزرقاء ذو الزاوية المفتوحة في حاله استعماله كعلاج أولي.

Introduction

Quite few years ago (for over 30 years) ALT (Arqon laser trabeculoplasty) was the main LASER procedure used for the treatment of primary open angle Glaucoma, after years of researches regarding patients long term efficacy, studies like the Glaucoma laser trial (1989) shows that laser trabeculoplasty lowers intra-ocular however the procedure involves the use of high energy hot spot lasers that cause destruction to the surrounding tissues so ALT should be used with caution[1-2].

Hence was the need to use more safe kind of laser, in 2001 the FDA approve the use of SLT selective laser trabeculoplasty for the treatment of POAG [3].

SLT is a cold laser with selective thermolysis to the pigmented cells with

minimal or no destruction to the surrounding tissues & structures which does not compromise the efficacy of SLT in lowering the intra-ocular pressure [4-5].

The study of Mellarith et al published in the Journal of Glaucoma in 2006 showed that SLT lowers IOP as effective as prostaglandins [6-8].

How does SLT works; By a complex cellular and biomechanical cascade which proposes that laser energy recruits macrophages to the trabecular meshwork by increase the expression of biological cytokines and cellular mediator activities [9-11], macrophages remove obstructive proteins and remodel the TM. Thus

improving aqueous humor out flow and reduce IOP[12-14].

Materials and Methods

The study was conducted at my clinic in Al-Hilla city, Babylon, Iraq.

The aim of this study is to see the efficacy of SLT in lowering intra-ocular pressure in patients with primary open angle Glaucoma if used as a primary therapy before giving the patient any topical or systemic intra-ocular pressure lowering agent.

21 eyes of 17 patients 4 of them both eyes were treated, the diagnosis of Glaucoma was based on measuring the intra-ocular pressure using Goldman tonometry, visual field using automated

perimetry and fundus examination to see the optic nerve cupping. 5 patients were lowering pseudoexfoliative Glaucoma.

The age of the patients ranging from 55 years old up to 65 years old.

SLT done in my clinic using SLT device trabiculus manufactured by the German company ARC.

Pilocarpine 4% along with topical anesthesia(tetracaine) were giving before doing the procedure.

100 shoot 360 were giving the patient given steroid as fleuromethelome post operatively and examined after 1 week postoperatively.

Then examined after 1 month and then examined monthly for about 1 year. As shown in Table(1)

Table 1

first visit	1 week	1 month	6 month	1 year
30	19	18	18	18
25	16	15	16	17
28	17	16	17	18
29	18	19	20	19
31	18	19	21	18
27	15	14	16	17
26	15	17	15	17
32	19	18	16	18
34	20	20	18	18
30	18	19	17	16
31	19	17	17	16
25	14	15	16	18
28	17	15	14	15
26	15	16	14	16
35	21	18	16	15
32	20	18	17	18
31	19	18	19	19
31	20	18	20	19
31	20	18	16	16
28	17	15	14	15
26	15	12	15	15

Table 2

first visit	1 week	1 month	6 month	1 year
29.3333 ± 2.86938	17.7143±2.07709	16.9048±1.99762	16.7619±1.99762	17.0476±1.39557
a	b	b	b	b

The values that carry the same letter (b) shows no significant changes between them regarding the values of mean and standard deviation ($P < 0.05$).

Results

We use RLSD (revised least significant difference) and Duncan's Multiple Range tests the result was as shown in Table (2) there is significant drop in IOP following 1 week and month & 6 month and 1 year, comparing with the first visit.

Discussion

As it is obvious from the result as it's shown in Table(2), and if we see the Table(1), it is clear that there is significant drop in IOP for those eye treated by SLT as primary treatment, the drop is about 1/3 if we take the mean of all the eyes treated and as we go further through the follow up it's obvious that there is only little fluctuation but the most important is that the IOP remain within acceptable range. Most of the patients that their presenting IOP less than 30 mmHg got the best results.

Conclusion

SLT as primary treatment for POAG is highly effective and promising non-invasive technique especially if we compare it with ALT or with the high cost and side effect of Anti Glaucoma drops.

References

- 1- Canadian Journal of ophthalmology 2011.
- 2- GLT research Group laser trial 2010.
- 3- Latina MA et al Q-switched 532 nm Nd-Yag laser trabeculotomy (SLT) a multicenter pilot, clinical study ophthalmology 2008.
- 4- Journal of Glaucoma 2006, Mellaritn I. strasfeld M, colev G.
- 5- Canadian Journal of ophthalmology 2011, Bovell, A.M., Damji 2011.
- 6- Mosby year book III.
- 7- Jindra L.F Donnely J.A Migilino EM, SLT as primary & secondary therapy in patient with Glaucoma 8 year experience paper presented at enropien society of cataract and refractive surgeons 2010 Paris.
- 8- Jindra L.F, Mishali M, Migilino the effect of prostaglandin, medical on SLT. paper presented at American society for cataract & refractive surgery 2011 San Diego
- 9- Latina MA et al current ophthalmology 2002.
- 10- American academy of ophthalmology Glaucoma panel 2010.
- 11- Samples JR et al ophthalmology 2011.
- 12- Hong BK et al J Glaucoma 2002.
- 13- Lee R et al Can J ophthalmology 2006.
- 14- Cantor LB et al curr Med Res opin 2008