

PATTERN OF LONG-TERM INTRAOCULAR PRESSURE VARIATION FOLLOWING GONIOSCOPY-ASSISTED TRANSLUMINAL TRABECULOTOMY: TWO-YEAR OUTCOMES

Bruno M Faria, Diego T Dias, Mariana A O Reis, Fabio B Daga, Ana L B Scoralick,^{3,6} Leopoldo Magacho, Pedro H E Ribeiro Junior; Fabio N Kanadani, Vital P Costa, Tiago S Prata.
t.prata0807@gmail.com

INTRODUCTION

It is well-established that IOP is a dynamic parameter that fluctuates over time. Long-term IOP variation, which can be obtained from repeated IOP measurements during serial office visits, refers to the IOP variation that occurs over months to years. In this context, previous studies, including large clinical trials, have shown a significant association between long-term IOP variation and glaucoma progression. Therefore, evidence suggests that, in clinical practice, not only low IOPs but also stable IOPs may be important to reduce disease progression.

PURPOSE

To assess and compare the impact of gonioscopy-assisted transluminal trabeculotomy, as a standalone procedure (GATT) or combined with phacoemulsification and intraocular lens implantation (PHACOGATT), as primary surgical options, on long-term intraocular pressure (IOP) variation parameters in eyes with clinically uncontrolled glaucoma.

METHODS

Unicentric retrospective study. 169 consecutive patients who had undergone GATT or PHACOGATT due to clinically uncontrolled open-angle glaucoma, with at least 12 months of follow-up. After inclusion, patients were divided in two groups: GATT and PHACOGATT. Pre and post-operative data were collected at 3, 6, 12, 18 and 24 months. Long-term mean IOP was assessed as a central tendency metric while long-term IOP peak and long-term IOP fluctuation were assessed as variability metrics. Additionally, mean-positive IOP variation was calculated based on the difference between mean long-term IOP peak values and mean long-term IOP values, while sustained clinically significant positive IOP variation was calculated as the percentage of patients who showed an IOP of 15 mmHg or higher at 2 consecutive follow-up visits. Finally, the number of follow-up visits with an IOP of 15 mmHg or higher was also investigated.

RESULTS

See figures 1- 2 and tables 2 - 3.

table 1. Baseline clinical and demographic data of study patients.

	GATT Group (n=101)	PHACOGATT Group (n=68)	P value
Age (years)	69 (55; 76.2)	61 (57; 69.5)	0.02
Gender (%; M/F)	67.3/32.7	68.5/31.5	0.99
Race (%; White / Others)	79.2/20.8	60/40	0.01
Diagnosis (%; POAG / Others)	68.3/31.7	80/20	0.11
Baseline IOP (mmHg)	23.5 ± 7.9	22.8 ± 8.9	0.32
MD index (dB)	-11.0 (-18.1; -6.8)	-8.2 (-18.3; -3.4)	0.12

M, male; F, female; POAG, primary open-angle glaucoma; IOP, intraocular pressure; MD, mean deviation.
 Data given as mean ± standard deviation or median and interquartile intervals, whenever appropriate.

CONCLUSION

Patients with clinically uncontrolled open-angle glaucoma submitted to GATT or PHACOGATT not only achieved low mean IOPs, but also demonstrated stable IOP patterns. Our results provide additional evidence supporting GATT and PHACOGATT as viable options for the treatment of medically uncontrolled glaucoma patients requiring low and stable IOPs.

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table 2. Long-term IOP variation parameters.

	Overall (n=169)	GATT Group (n=101)	PHACOGATT Group (n=68)	P value
Long-term mean IOP (mmHg)	11.7 ± 1.9	12.0 ± 1.8	11.2 ± 2.0	0.01
Mean long-term IOP fluctuation (mmHg)	1.1 ± 3.2	1.0 ± 3.7	1.2 ± 1.8	0.01
Mean long-term IOP peak (mmHg)	12.5 ± 3.0	12.9 ± 2.6	11.8 ± 3.5	0.03
Mean-positive IOP variation (mmHg)	0.79 ± 1.64	0.62 ± 1.93	0.89 ± 1.40	0.01
Sustained clinically significant positive IOP variation (%)	11 (6.5%)	8 (7.9%)	3 (4.4%)	0.52

IOP, intraocular pressure.
 Data given as mean ± standard deviation, whenever appropriate.

table 3. Long-term IOP variation parameters.

	GATT Group (n=101)	PHACOGATT Group (n=68)	P value
<i>IOP</i>			
Baseline	23.5 ± 7.9	22.8 ± 8.9	0.32
3 months	11.6 ± 1.8	11.1 ± 2.1	0.14
6 months	12.1 ± 2.4	11.1 ± 1.7	< 0.01
12 months	12.0 ± 2.0	11.2 ± 1.8	0.01
24 months	12.3 ± 2.3	11.9 ± 4.1	0.07
<i>Number of medications</i>			
Baseline	3.4 ± 0.8	3.1 ± 0.8	0.26
3 months	0.9 ± 1.0	0.8 ± 1.4	0.14
6 months	0.9 ± 1.0	0.6 ± 0.9	0.06
12 months	1.1 ± 1.0	0.8 ± 1.0	0.08
24 months	1.3 ± 1.0	0.9 ± 1.1	0.05

IOP, intraocular pressure.
 Data given as mean and standard deviation, whenever appropriate.

figure 1.

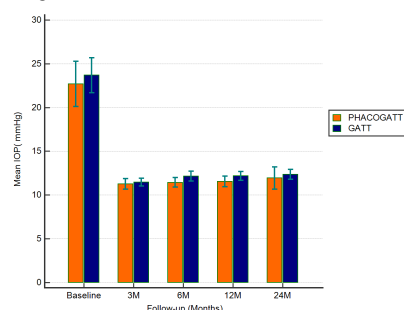


figure 2.

