

Intraocular Pressure Response to Argon Laser Trabeculoplasty Without Pred-Forte Versus With Pred-Forte

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ABSTRACT

A retrospective study of 74 eyes of 55 patients with primary open angle glaucoma showed that eyes that received topical 1% Pred Forte after argon laser trabeculoplasty (ALT) did not have a statistically significant lower intraocular pressure (IOP) than the eyes that were not given Pred Forte following the ALT procedure..

INTRODUCTION

Primary open angle glaucoma is the third leading cause of blindness in the United States⁸ and accounts for approximately 70% of adult glaucoma cases.⁹ The prevalence of primary open angle glaucoma in the United States is 2.1% and increases with age.⁷ Increased age also causes an increase in the resistance to the outflow of aqueous humor. Furthermore, this can result in an increase in intraocular pressure, and in some individuals, optic nerve damage.

Argon laser trabeculoplasty is used in the treatment of primary open angle glaucoma when maximum medical therapy is no longer able to control the progression of vision loss. It is also used in cases of patient noncompliance, contraindications for other medications, and when a patient does not tolerate their medications. ALT lowers IOP by creating a more efficient movement of aqueous humor through the trabecular meshwork. ALT is most effective in the control of pseudoexfoliative and primary open angle glaucoma.¹ It can lower IOP by as much as 30% in older patients.⁶

Pred Forte is a steroid that is used to reduce inflammation after ALT. The steroid drop is usually used for a period of four days and then discontinued.

MATERIALS AND METHODS

We retrospectively reviewed the charts of 55 patients who had undergone ALT by Ralph P. Crew, D.O. Argon laser trabeculoplasty was performed using the blue-green argon laser (Zeiss model), a 50 micron spot size, 0.1 second duration, and sufficient power to achieve mild blanching of the trabecular meshwork. All patients received the same pre-operative treatment of 1% pilocarpine. Post operatively the two groups received the same treatment apart from the fact that Group 1 received 1% PF QID for four days and then discontinued and Group 2 did not. After the ALT procedure, the patients maintained their same topical glaucoma treatment as prior to surgery for six weeks. At the six week post-op visit each patient was re-evaluated and their treatment was adjusted accordingly.

The data collected on all patients included age, gender, pre-operative IOP, post-operative IOP (allowing at least 6 weeks after the ALT), and whether they received the 1% PF. The data for the two groups were compared using the independent samples t-test and Bartlett chi-square statistics.

RESULTS

Seventy-four eyes of 55 patients received ALT between September 1991 and April 1995. Thirty-eight eyes were male, 19 of which received the 1%PF, and 36 eyes were female, 28 of which received the 1% PF. The mean age of the patients at the time of ALT was 71 years old with a range from 49 to 91 years old. The average pre-operative IOP for the Group 1 males, those receiving the PF, was 23.632 \pm 6.329mm Hg and 22.786 \pm 5.432mm Hg for the females.

Post-operatively the average IOP for Group 1 was 17.579 \pm 4.439mm Hg and 19.179 \pm 3.982mm Hg for the males and females respectively as shown in Table 1. The average pre-operative IOP for the Group 2 males, those not receiving the PF, was 22.158 \pm 4.799mm Hg and 24.375 \pm 7.269mm Hg for the females. Post-operatively the Group 2 average IOP was 16.632 \pm 2.733mm Hg and 19.500 \pm -6.655mm Hg for the males and females respectively as shown in Table 1.

Table 1: Comparison of pre-op and post-op IOP by gender

	GROUP 1	GROUP 2
No. of patients	47	27
Males	19	19
Females	28	8
Average Pre-op IOP	23.128 \pm -5.759	22.815 \pm -5.89
Males	23.632 \pm -6.329	22.158 \pm -4.799
Females	22.786 \pm -5.432	24.375 \pm -7.269
Average Post-op IOP	18.532 \pm -4.201	17.487 \pm -4.344
Males	17.579 \pm -4.439	16.632 \pm -2.733
Females	19.179 \pm -3.982	19..500 \pm -6.655

Pre-operatively and post-operatively the males had a lower IOP than the females as seen in Graphs 1 and 2. Pre-operatively the t test for both groups separated by gender was statistically the same allowing us the compare the two groups. Post-operatively the IOP's between genders was significantly different with a t test of .029 as seen in Table 2.

Table 2: Pre-op and post-op t values grouped by gender

	FEMALES	MALES	t VALUE
Mean pre-op IOP	23.139	22.895	.854
Mean post-op IOP	19.250	17.105	.029

Table 1

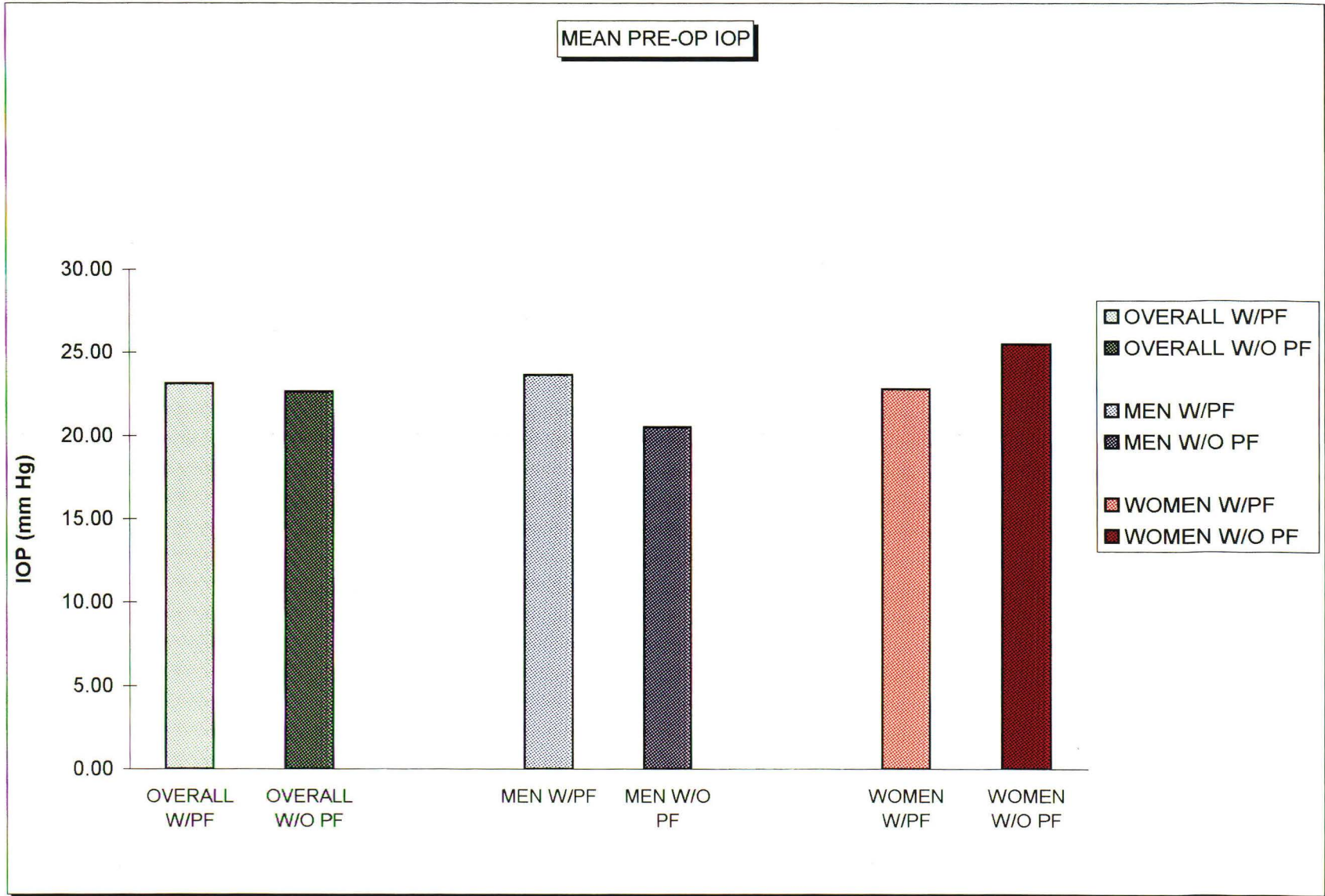
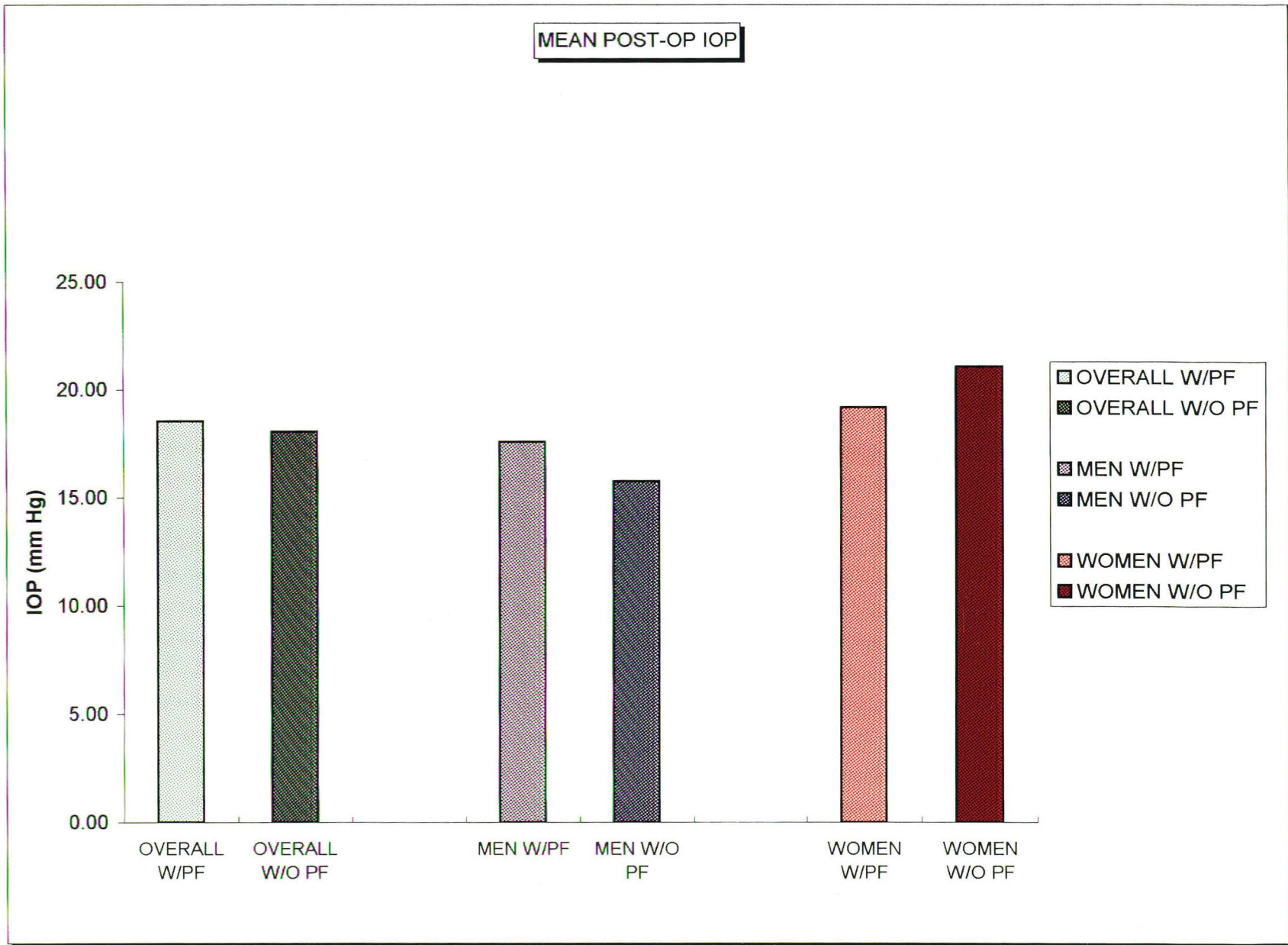


Table 2



These results show that the males responded better to the laser surgery regardless whether they received the PF or not.

Separating the groups by those who received Pred Forte versus those who did not, demonstrates that pre-operatively both groups were similar with a t test of .821 as seen in Table 3. Post-operatively Group 2, those that did not receive the PF, had a lower IOP with a t test of .31 as seen in Table 3.

Table 3: Pre-op and post-op t-values grouped by drug

	GROUP 1	GROUP 2	t VALUE
Mean pre-op IOP	23.128	22.815	.82
Mean post-op IOP	18.532	17.481	.31

Looking at the female sample alone shows that pre-operatively those that received the PF had a lower IOP than those that did not receive the drug as seen in Table 4.

Table 4: Pre-op and post-op t values for females

	WITH PF	WITHOUT PF	t VALUE
Mean pre-op IOP	22.786	24.375	.503
Mean post-op IOP	19.179	19.500	.864

Post-operatively, however, the IOPs were more similar. Furthermore, those who did not receive the PF had a greater decrease in IOP although not by a statistically significant amount.

The male sample showed that both pre-operatively and post-operatively those who did not receive the PF had a lower IOP but not by a statistically significant amount as seen in Table 5.

Table 5: Pre-op and post-op t values for males

	WITH PF	WITHOUT PF	t VALUE
Mean pre-op IOP	23.632	22.158	.424
Mean post-op IOP	17.579	16.632	.433

DISCUSSION

Argon laser trabeculoplasty is an established surgical treatment for primary open angle glaucoma when maximum tolerated medical therapy is no longer effective. ALT may prevent the need for other surgical treatments such as filtration surgery in 82-97% of patients.¹

Overall, we found that the males responded better to the ALT than did the females regardless if they received the PF or not. As a whole, however, there was not a statistically significant difference among those who received the drug versus those who did not.

Although statistically there was not a difference in IOP between the two groups, the post operative decrease could have some clinical significance. If the number of subjects in our study was greater it could reach statistical significance.

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