

IOP RISE IN THE UNOPERATED FELLOW EYE FOLLOWING EXPRESS SHUNT AND AUGMENTED TRABECULECTOMY

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PURPOSE:

Consensual ophthalmotonic response (COR) is a phenomenon whereby an alteration of intraocular pressure (IOP) in one eye is accompanied by a corresponding pressure change in the fellow eye. Previous studies looking into the IOP change of the unoperated fellow eye following trabeculectomy of one eye have produced varying results, showing the IOP dropping, remaining unchanged or increasing. This may be due to difference in inclusion criteria, surgical techniques and postoperative time intervals selected. The purpose of this study is to look into COR in Asian patients who receive augmented trabeculectomy or ExPRESS shunt surgery in the early postoperative period.

SETTING:

All patients were recruited from the Department of Ophthalmology at Queen Mary Hospital, a tertiary referral hospital in Hong Kong. Augmented trabeculectomies and ExPRESS shunt implantation methods were standardized.

METHODS:

This is a retrospective study conducted from January 2014 to January 2015, with 66 glaucoma surgeries conducted over the period. Intraocular pressure was obtained at baseline, and postoperative days 1, 3, 7 and 14. The age, sex, type of glaucoma, surgery, preoperative medications, postoperative bleb status and interventions were recorded. Patients who have received trabectomes, bilateral trabeculectomies, have incomplete data of fellow eye for the initial 2 visits, a phthisical fellow eye, known steroid response and uveitic glaucomas were excluded.

RESULTS:

27 surgeries were analyzed. The preoperative IOP of the operated and fellow eye is 25.4 \pm 14.2 and 16.5 \pm 5.3mmHg respectively. The postoperative IOP was averaged over 2 weeks of the operated and fellow eye to reduce the regression to mean effect, and is 12.3 \pm 7.8 and 19.1 \pm 8.5mmHg respectively. The postoperative averaged IOP of the fellow eye is significantly different from baseline ($p=0.019$). 22% of patients demonstrated fellow eye IOP rise of more than 30% from baseline. Their bleb morphology were either diffuse or showed mild leak. The majority of these patients underwent ExPRESS-shunt implant. No patients demonstrated fellow IOP drop of more than 30%.

CONCLUSIONS:

A nervous-reflex mechanism has been proposed to explain COR, with a blunted response shown in patients with Horner's syndrome. A significant rise in aqueous flow using fluorophotometry in the unoperated fellow eye following trabeculectomy suggests that the nervous system regulates aqueous secretion rather than outflow. The postoperative IOP of the fellow eye showed a

significant rise despite the measurement being averaged over 2 weeks, and with all medications continued or even stepped up. Limitations of our study are its retrospective nature and small sample size. It is essential to monitor the IOP of the unoperated fellow eye following trabeculectomy.