Service Priorities and Programmes

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Screening of Intraocular Pressure (IOP) before Routine Pupil Dilation of Pupils for Retinal Photograph: Case Series Review

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Introduction

Pharmacological dilatation of the pupil results in twice the sensitivity of detection of diabetic retinopathy compared with undilated retinal examination. However, pupil dilatation carries a potential risk of acute angle closure glaucoma (AACG). It has been hypothesized that the risk of AAC after pupil dilation may be higher in Asian patients with diabetes mellitus. Family Medicine and General Outpatient Department of Kwong Wah Hospital implemented intraocular pressure (IOP) measurement for all patients before referring for pupil dilated retinal photographs. Patients with persistent elevated IOP, i.e. greater than 21 mmHg on at least two occasions will be referred to Eye Specialist for further assessment.

Objectives

1. To review the clinical parameters of patients with persistent elevated IOP; 2. To review the outcomes of patients with elevated IOP referred to Eye Specialty

Methodology

This case series reviewed all patients with persistently high IOP while arranged for complication screening from 1st December 2013 to 30th November 2014. All of them were referred to Eye Specialist for further evaluation. Descriptive statistics including mean, standard deviation, frequency and percentages will be used to summarize patients' demographics, clinical parameters and outcomes.

Result

During this year period, 1736 diabetes and or hypertensive complication screening were performed. All patients had IOP measured by air-puff (noncontact) tonometry before referring for dilated retinal photography. 31 patients (1.8%), including 13 male and 18 female had detected to have IOP of any eye persistently higher than 21 mmHg

at least two occasions. Majority of them were asymptomatic, except one patient had blurred vision while another one patient had family history of glaucoma. All of 31 patients had associated chronic morbidity, including 10 patients (32.3%) had both diabetes mellitus (DM) and hypertension (HT), 9 (29.0%) had DM while 12 (36.4%) had HT alone. Their mean (SD) blood pressure (BP) was 126.1 (15.6)/73.4 (8.8) mmHg, and the mean (SD) body mass index (BMI) was 26.1 kg/m2. The mean (SD) IOP of right eye was 24.1 (2.1) mmHg, while the left eye was 24.6 (2.5) mmHg. The mean (SD) visual acuity (VA) of right eye and left eye was 0.8 (0.3) and 0.9 (0.3) respectively. 4 patients (12.9%) were confirmed to have glaucoma and treatment was initiated by Eye Specialist. 2 patients had received topical treatment, while 1 patient received both topical and surgical iridotomy treatment. This case series revealed that 12.9% of diabetic or hypertensive patients with elevated IOP were confirmed to have silent glaucoma. Further study should be conducted to evaluate the cost effectiveness of IOP screening among this group of patients.