

Original Article

Killing two birds with one stone: the potential effect of cataract surgery on the incidence of primary angle-closure glaucoma in a high-risk population

WengOnn Chan MBChB,¹ José A García PhD,² Henry S Newland MPH FRANZCO,¹ James Muecke FRANZCO,¹ Stephen McGovern FRANZCO,¹ Dinesh Selva FRANZCO,¹ Tin Aung MD³ and Robert J Casson DPhil FRANZCO¹

¹South Australian Institute of Ophthalmology, Royal Adelaide Hospital, Adelaide, South Australia, Australia, ²Preventive and Social Medicine, Dunedin School of Medicine, Dunedin, Otago, New Zealand; and ³Yangon Eye Hospital, Yangon, Myanmar

ABSTRACT

Background: To estimate the proportion of cataract surgery performed at various visual acuity and lens opacity thresholds that would coincidentally treat early angle-closure disease, and to estimate the effect of this surgery on the incidence of primary angle-closure glaucoma.

Design: Cross-sectional, population-based survey in Meiktila, Myanmar.

Participants: Total of 2076 inhabitants, 40 years of age and over were included.

Methods: Eyes with cataract-induced visual impairment, and primary angle-closure disease were identified. Analyses were stratified by various pinhole-corrected visual acuity and Lens Opacity Classification System III scores thresholds.

Main Outcome Measures: The dual role of cataract surgery in primary cataract treatment and primary angle-closure glaucoma prevention was estimated.

Results: Of 4153 eyes available for analysis, 261 eyes were either primary angle-closure suspect or primary angle closure; 975 eyes had a visual acuity of <6/18 and Lens Opacity Classification System

III score ≥ 3 on the nuclear or cortical scales. Of these, 86 eyes had either primary angle-closure suspect or primary angle closure. If cataract surgery were performed on all 975 eyes, this would potentially prevent up to 86 cases of primary angle-closure glaucoma in this population; 8.82% (95% confidence interval 7.12–10.78%) of the cataract surgery would address the cataract and prevent primary angle-closure glaucoma. This would achieve a 38.46% (95% confidence interval 20.23–59.43%) relative reduction in the incidence of primary angle-closure glaucoma in the adult population.

Conclusion: In populations with a high prevalence of both visually significant cataract and angle-closure disease, quality cataract extraction can serve a dual role of visual restoration and reducing the incidence of angle-closure disease in the population: killing two birds with one stone.

Key words: angle-closure glaucoma, blindness prevention, cataract surgery, Myanmar.

INTRODUCTION

Cataract and glaucoma are the leading causes of blindness in the world.¹ Angle-closure glaucoma

■ **Correspondence:** Dr. WengOnn Chan, South Australian Institute of Ophthalmology, Discipline of Ophthalmology & Visual Sciences, University of Adelaide, Adelaide, SA 5000, Australia. Email: onn912@gmail.com

Received 6 October 2010; accepted 15 May 2011.

Conflict/competing interest: There are no commercial conflicts.

Funding sources: Financial support was provided by an Independent Grant Scheme from Pfizer Australia.

© 2011 The Authors

Clinical and Experimental Ophthalmology © 2011 Royal Australian and New Zealand College of Ophthalmologists