

Original Article

Risk factors for primary open-angle glaucoma in a Burmese population: the Meiktila Eye Study

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ABSTRACT

Purpose: To report the risk factors associated with primary open-angle glaucoma (POAG) in the Burmese population.

Methods: The Meiktila Eye study, a population-based cross-sectional study, included inhabitants 40 years of age and over from villages in the Meiktila District. Of 2481 eligible participants identified, 2076 participated in the study and sufficient examination data to diagnose glaucoma in at least one eye was obtained in 1997 participants. The ophthalmic examination included slit-lamp examination, tonometry, gonioscopy and dilated stereoscopic fundus examination. Definitions adhered to the International Society for Geographic and Epidemiological Ophthalmology's recommendations. Univariate and multivariate analyses of potential risk factors were performed.

Results: The overall prevalence of POAG was 2.0% (95% CI 0.9–3.1). In the univariate analysis, increasing age ($P = 0.024$), spherical equivalent ($P = 0.01$), axial length ($P = 0.023$) and intraocular pressure (IOP; $P < 0.001$) were significantly associated with POAG. And in the multivariate analysis, myopia < 0.5 D ($P = 0.049$), increasing age and IOP ($P < 0.001$) were significant risk factors for POAG.

Conclusion: POAG in this Burmese population was associated with increasing age, axial myopia and IOP.

Key words: glaucoma, open-angle, prevalence, risk factor, rural population.

INTRODUCTION

Glaucoma is the second leading cause of blindness in the world, with open-angle glaucoma (OAG) the most prevalent form.¹ Quigley and Broman estimate that worldwide nearly 44.7 million people will have primary open-angle glaucoma (POAG) by the year 2010, and 4.5 million will be blinded by it.¹ The prevalence of POAG varies among different racial groups. Rates reported in white adult populations in the Beaver Dam and Blue Mountains Eye studies were 2.1% and 3.0%, respectively;^{2,3} in black populations, the prevalence is 2–3 times higher;^{4–6} the prevalence in Indian, Japanese and South-east Asian populations appears similar to that in white populations.^{7–11}

In terms of risk factors, intraocular pressure (IOP)^{12,13} age,^{3,4,9,14,15} positive family history,^{16–20} myopia^{4,8,21–23} and low perfusion pressure²⁴ have been convincingly associated with a higher incidence of POAG. A number of other risk factors for POAG have been inconsistently reported, including diabetes mellitus, hypertension, smoking, migraine, thyroid disease and alcohol consumption.^{8,16–18,22,25–31} To date, limited data from Myanmar have been available on the prevalence of glaucoma. This study aims to report the risk factors associated with POAG in the Burmese population.

METHODS

Sampling procedure

The Meiktila Eye Study (MES) was a population-based, cross-sectional ophthalmic survey of the inhabitants of rural villages in central Myanmar. The principle aims of this project were to estimate the prevalence and causes of visual

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