

Anisometropia in an Adult Population in Rural Myanmar: The Meiktila Eye Study

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ABSTRACT

Purpose: To determine the prevalence and risk factors for anisometropia in a rural adult population in central Myanmar. **Methods:** A population-based ophthalmic survey was conducted in rural villages in central Myanmar. Anisometropia was assessed in subjects with phakic eyes. The severity of anisometropia was defined as the absolute difference of the spherical equivalent between the two eyes. **Results:** Prevalence of anisometropia (≥ 1.0 D) in all participants was 35.3% (95% CI 32.7–37.9%); severe anisometropia (≥ 2.0 D) was present in 18.9% (95% CI 16.8–21.0%). There was no significant gender difference in anisometropia prevalence or severity. Prevalence and severity of anisometropia were significantly associated with age. Multiple logistic regression analysis revealed that cataract, myopia, but not age, were associated with anisometropia. The between-eye differences in axial length ($r = 0.15$, $p < 0.001$) and corneal curvature ($r = 0.19$, $p < 0.001$) were significantly correlated with the severity of anisometropia. **Conclusions:** Prevalence of anisometropia is relatively high in this rural adult population in Myanmar. Myopia and cataract, but not increasing age, are the potential risk factors of anisometropia in this population.

INTRODUCTION

Anisometropia, a condition in which the refractive state of both eyes differs, is important because of its association with strabismus and amblyopia.¹ It can cause aniseikonia, possible spectacle intolerance and binocular defects.² Recent population-based studies have indicated that anisometropia (between eye difference >1.0 D) is more prevalent in east Asia (10.7%–26.1%)^{3–7} than in Anglo-European and Afro-Caribbean populations (7.0%–14.7%).^{8–10} Several studies have reported that anisometropia is associated with age, gender and myopia.^{6,8–14} However, data on biometric associations of anisometropia and possible relationship to cataract, particularly in adult Asian populations are scarce.

As part of a population based ophthalmic survey in an adult population in rural Myanmar (MES), we report here the prevalence of anisometropia in the study population. Risk factors for anisometropia are assessed and the relationships between anisometropia and between-eye differences in biometric components are studied.

MATERIALS AND METHODS

MES study was conducted among the inhabitants 40 years of age and over in rural villages in central Myanmar. The randomized, stratified, cluster sample selection methods were well described in a previous report.¹⁵ Briefly, a sampling frame consisting of the list of all villages in the Meiktila district with their populations was obtained from the Ministry of Health (MOH) in Myanmar. Villages were arbitrarily stratified as large (population >825) or small (population <826), with small villages in each of the 6 zones within the Meiktila District constituting 6 separate strata. For logistical reasons, sampling was restricted to villages within 3 hours drive from Meiktila (an area encompassing approximately 80% of the district; the urban Meiktila township was also excluded). All persons 40 years and over within each selected village were eligible for inclusion. Health care workers from Meiktila township enumerated the selected villages (and advertised and promoted the survey) prior to commencement of the survey. Six small villages (one from each zone) and 4 large villages

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