

Prevalence of Amblyopia and Associated Risk Factors in Tibetan Grade One Children

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Keywords

Amblyopia · Prevalence · Risk factors · Ophthalmic epidemiology · Clinical trial

Abstract

Introduction: Amblyopia is an important public health problem and standard screening is quite necessary for early diagnosis and treatment especially for the remote areas. As the place of the largest Tibetan population, the Tibetan Plateau has special geographical characteristics such as high altitude, time zone, and ethnic composition, where very little information is available about the prevalence of amblyopia and other ocular diseases. The article aims to determine the prevalence of amblyopia and associated factors in grade 1 Tibetan children, living in Lhasa, Tibet Autonomous Region. **Methods:** A cross-sectional study was conducted. All the participants were scheduled for comprehensive eye examinations including visual acuity testing, ocular deviation and movement evaluation, cycloplegic refraction and examinations of the external eye, anterior segment, media, and fundus. Amblyopia was assessed in the children according to the standard definition. **Results:** A total of 1,856 stu-

dents participated in the examinations (97.58% response rate). 1,852 students completed all the related examinations, and 34 of them were diagnosed as amblyopia with the prevalence of 1.84% (95% confidence interval [CI]: 1.22–2.45%). Unilateral amblyopia was diagnosed in 23 students (1.24%, 95% CI: 0.74–1.75%), including 16 anisometropic, 4 strabismic, 1 visual deprivational, and 2 mixed. Other 11 students were diagnosed as bilateral amblyopia (0.59%, 95% CI: 0.24–0.94%), including 9 ametropic, 1 deprivational, and 1 with nystagmus. The mean cylinder refraction and absolute value of the spherical equivalent refraction of amblyopic eyes was respectively -2.15 ± 1.52 D and 2.70 ± 2.33 D. Amblyopia was significantly associated with hyperopia ($\geq +2.00$ D, odds ratio [OR] 8.22, 95% CI 3.42–19.72), astigmatism (≤ -2.00 D, OR 6.76, 95% CI 2.56–17.85), and anisometropia ($\geq +0.50$ to $< +1.00$ D, OR 3.95, 95% CI 1.44–10.79; $\geq +1.00$ D, OR 21.90, 95% CI 8.24–58.18). **Conclusions:** The prevalence of amblyopia in grade 1 students of Lhasa is relatively higher than that of many other ethnic populations in China previously reported. Refractive errors including anisometropia, hyperopia, and astigmatism are the major risk factors of amblyopia.

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