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CHANGE IN VISUAL ACUITY OF DISPENSARIZED CHILDREN WITH STRABISMUS

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ABSTRACT

Purpose: To determine the change in visual acuity of dispensarized children with strabismus treated only with optical correction or with combination of optical correction and occlusion.

Methods: A retrospective study of the medical records in Children's Ophthalmological Consulting Room (COCR) in Pleven, Bulgaria was conducted. Out of 55 dispensarized children 41 were diagnosed with either esotropia or exotropia.

Results: Of all cases with strabismus esotropia was found in 29 cases and exotropia – in 12. The mean duration of dispensarization was 3.95 years (CI 95 %, 3.12 ÷ 4.78). Occlusion was applied in 23 cases (56.0 %). The mean improvement of visual acuity in the cases with occlusion was 0.31 (CI 95 %, 0.18 ÷ 0.43) and in the cases without occlusion was 0.14 (CI 95 %, 0.05 ÷ 0.23) showing statistical significance ($p = 0.01$).

Conclusions: Treatment of strabismus with combination of optical correction and occlusion provides better outcome regarding the visual acuity of the children.

Key words: strabismus, esotropia, exotropia, visual acuity, occlusion

INTRODUCTION

Amblyopia is the commonest childhood vision disorder with an estimated prevalence of 1.6 – 3.5 %. This developmental anomaly is characterized by a loss of spatial vision (usually unilateral) in the presence of strabismus, refractive error or form deprivation (1). It is often treated with occlusion or pharmacologic penalization initiated simultaneously or soon after a spectacle correction is prescribed (2).

PURPOSE

To determine the change in visual acuity of dispensarized children with strabismus treated only with optical correction or with combination of optical correction and occlusion.

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MATERIALS AND METHODS

A retrospective study of the medical records in Children's Ophthalmological Consulting Room (COCR) in Pleven, Bulgaria for the period 2001 – 2012 was conducted. Out of 55 dispensarized children 41 were diagnosed with either esotropia or exotropia. Data about ophthalmology and system diseases, visual acuity, optical correction, occlusion, therapy and duration of dispensarization was collected. Microsoft Excel with specialized modules was used for statistical analysis and data visualization.

RESULTS

Of all cases with strabismus 24 (58.5 %) were male and 17 (41.5 %) were female. In 29 (70.7 %) cases there was esotropia and in 12 (29.3 %) – exotropia. The distribution of esotropia and exotropia by gender is shown on **Figure 1**.

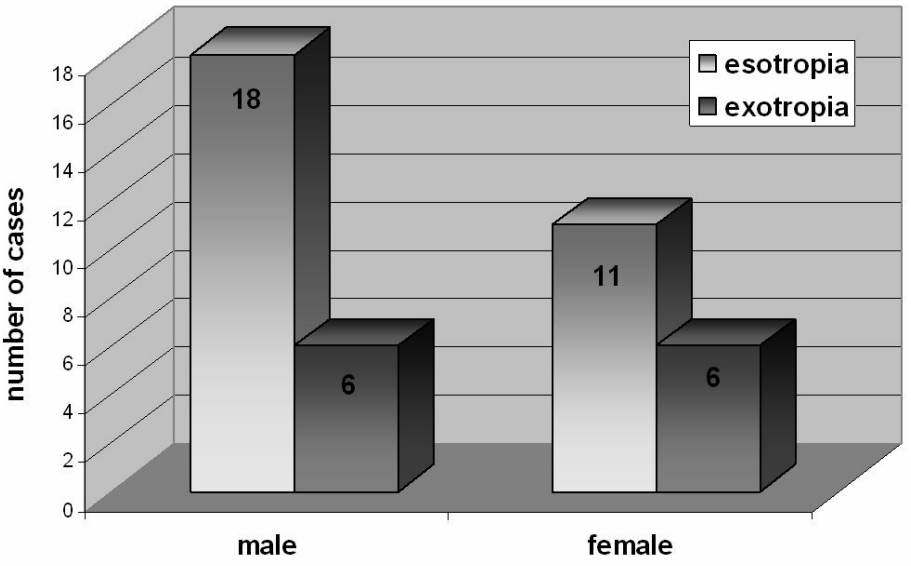

Figure 1. Distribution of esotropia and exotropia cases by gender

Urban residents were 34 (82.9 %) and rural residents where 7 (17.1 %). The mean age found was 5.78 years (CI 95 %, 4.74 ÷ 6.82).

The distribution of cases by age is shown on **Figure 2.**

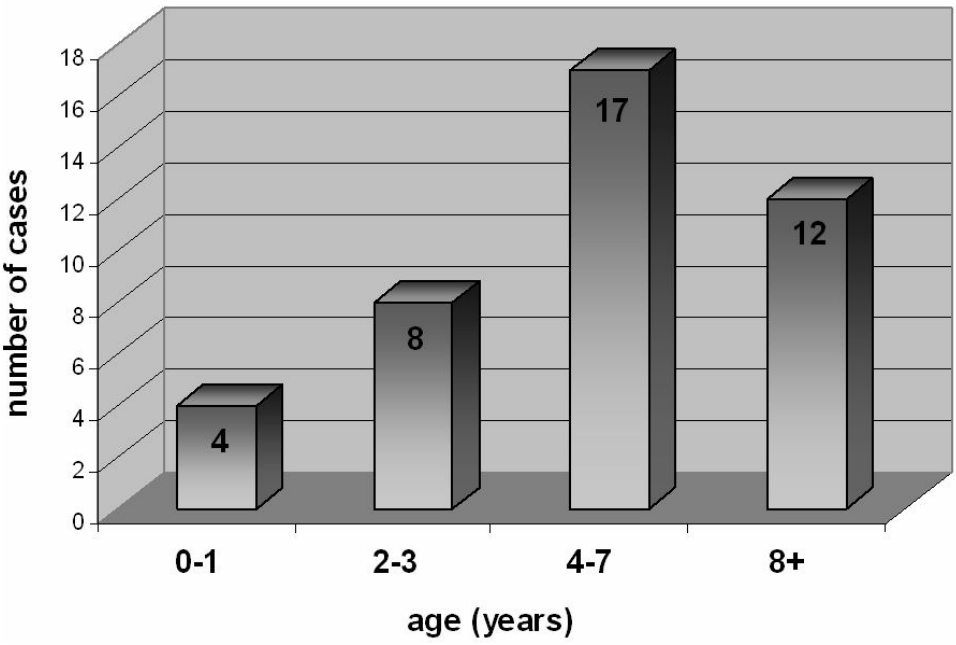

Figure 2. Distribution of cases by age

The mean duration of dispensarization was 3.95 years (CI 95 %, 3.12 ÷ 4.78). In 55.2 % of the esotropia cases and in 50.0 % of the exotropia cases there was improvement in the visual acuity at the end of dispensarization period.

Occlusion was applied in 23 cases (56.0 %). The mean improvement of visual acuity in the cases with occlusion was 0.31 (CI 95 %, 0.18 ÷ 0.43). The mean improvement of visual acuity in the cases without occlusion was 0.14 (CI 95 %, 0.05 ÷ 0.23). The difference in the visual acuity improvement showed statistical significance (p = 0.01).

DISCUSSION

In our study there was a slightly greater number of cases with strabismus among males so no relationship between gender and strabismus could be reported. We could not find a relationship between age (stratification by age groups) and strabismus either.

The esotropia cases were much more than the exotropia cases. This coincides with other studies which also find esotropia to be more prevalent than exotropia (3).

We found greater improvement in the visual acuity of the children treated with combination of occlusion and optical correction compared to those who had only optical correction. Such findings are reported by different authors (4). Others report improvement in visual acuity by optical correction only but usually in cases of anisometropic amblyopia (3).

CONCLUSIONS

Low vision caused by strabismus induced amblyopia is treatable. The treatment of strabismus with combination of optical correction and occlusion provides better outcome regarding the visual acuity of the children.

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