How to Prevent and Treat Anysometropic-Amblyopic Child by Contact Lenses

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ABSTRACT

Anisometropy as a first step on a way forward future amblyopic child, can be prevent and treat if this condition is recognised on time. Second step is wisdom, right contact lens fit on both eyes. As follow, some ortoptic-pleoptic procedures depending on (objective, subjective squinting angle, state of fusion, visus on both eyes and separately each eye and condition of nervus opticus (VEP), normal or absent retinal correspondence, are recomended. There is no limit how old a child is, but best choice and best compliance is age between five and twelve. Contact lens materiales, different fit procedures, right diagnoses and tips allabout are discussed.

Key words: amblyopia, anysometropya, child, contact lenses, prevention, treatment

Introduction

Amblyopia is defined as poor vision caused by abnormal visual development secondary to abnormal visual stimulation. Anisometropia is the most common cause of amblyopia and is the result of unequal refractive errors, with one eye worse than the other eye. A refractive error means the optical parts of the eye (such as the lens) are not properly focusing the image and are causing a blurred image in the brain. The term anisometropia means there is a difference in refractive errors between the eyes. If one eye is out of focus compared to the other eye, the better-seeing eye will become dominant, and the child will turn off, or suppress, areas of the brain. The area of the brain that receives the blurred image will mature only to the level that it is stimulated, so stimulation with a blurred image will damage visual development. The greater the image blur and the longer the blur exists, the worse the amblyopic connected to the blurred eye. The purpose of this study was to investigate the role of anisometropia and how to prevent/treat amblyopia. Contact lenses are the preferred optical approach to the correction of anisometropia as young as possible. Also The purpose of this study was to investigate the role of anisometropia and how to prevent/treat amblyopia. Contact lenses are the preferred optical approach to the correction of anisometropia as young as possible. Also the objective correction of the refractive error is an essential component of the treatment in any anisometropic case. That, as a first step include cycloplegic examination and as a second step the right
objective correction and after that the wisdom, right contact lens fit procedure. The best individual contact lens correction is recommended. Also red/green monocular test evaluation and full vertex distance regarding recommended tables must to be incorporated in.

Quality of the fit include maximum comfort, silicon-hydrogel contact lenses C.L material, possible astigmatism full correction and disposable on the daily wear bases C.L.

Also take care about C.L. cleaning system based on how well the system provides a deposit free contact lens and safeness. Store branded solutions only included. Scientific pillars of comfort means optimized contact lens experience through disinfection, cleaning and wetting components together. Uptake and release of preservatives as a key concept for break in the epithelium is the first step for bacteria to get a foothold into the cornea6. Therefore extremely important is to educate parents and the child properly and regular control checking is necessary.

We should try to prevent and/or treat affected eye by C.L. because images from each eye need to be very similar to avoid anisokoria as result of monocular aberration. Contact lenses are the preferred optical approach to the correction of anisometropia both eyes on the first step and improvement of binocular function through good fusion7 as a second step is our goal5,7.

Patient and Methods

Retrospective ten years follow up (1998–2008) contact lens carriers, children and teens aged six to seventeen evaluated through clinical dates orthoptic-pleoptic /contact lens cabinet in the Clinical Hospital Dubrava – Eye department. Sixty patients were fitted with contact lenses. At least one eye must be recognized as anisometropic and/or amblyopic through evaluation objective refraction examination and certain period of the first best achieved spectacles correction.8 Evaluation was based on: comparative visual acuity, best corrected visual acuity with the spectacles and contact lenses on the Snellen chard, biomicroscopic signs, squinting angle and entirely complian-
cness9.

REFERENCES

1. WRIGHT KW, Pediatric ophthalmology and strabismus (Editor: WIGHT KW); Visual development, amblyopia and sensory adaptations, St Louis (MO), Mosby, 1995 p. 126 — 2. EWANS BJW, Contact Lens & Anisometropia in childhood. Contact lenses are the preferred optical approach to the correction of anisometropia because images from each eye need to be very similar to avoid aniseikonia as result of monocular aberration. Equal images from both eyes on the first step and improvement of binocular function through good fusion as a second step is our goal5,7.

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Results

From the total sixty anisometropic patients with contact lens correction, fifty three (88%) corrected and treated patients (at least one anisometropic eye) achieved the best visual acuity on the same eye between 0.8–1.0 on the last visit through clinical dates in retrospect. These dates are individual and connected to degree of penalization processes and visual acuity on the second eye. Biomicroscopic signs in total sixty patients have no pathology regarding infection, keratopathy or dry eyes risk. Squinting angle, aesthetic and functionally satisfaction, that means entirely compliance are good. All of these patients continued with the correction end prefer contact lenses over to spectacles correction. (Table 1).

Conclusion

The purpose of this study was to investigate the role of anisometropia and how to prevent or treat amblyopia in childhood. Contact lenses are the preferred optical approach to the correction of anisometropia because images from each eye need to be very similar to avoid aniseikonia as result of monocular aberration. Equal images from both eyes on the first step and improvement of binocular function through good fusion as a second step is our goal.

In our retrospective ten years follow up based on clinical dates and anisometropic/abmyliopic patients treated as above with contact lenses entirely compliance were achieved. Extremely important suggestion is to educate parents and the child properly and regular control checking is necessary. Also, that include quality of the fit with maximum comfort, silicon-hydrogel contact lens materials, on a daily wear bases C.L. and store branded solutions only as a part of all included measures for safeness.


TABLE 1

<table>
<thead>
<tr>
<th>change in best achieved visual acuity</th>
<th>control</th>
<th>baseline</th>
<th>best achieved VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,1–0,4</td>
<td>0</td>
<td>53</td>
<td>0,5–0,7</td>
</tr>
<tr>
<td>0,5–0,7</td>
<td>54</td>
<td>7</td>
<td>1–0,4</td>
</tr>
<tr>
<td>1–0,4</td>
<td>6</td>
<td>0</td>
<td>0,8–1,0</td>
</tr>
</tbody>
</table>

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KAKO KONTAKTNIM LEĆAMA PREVENIRATI I LLJEČITI AMBLOPIJU KOD ANIZOMETROPIJE U DJECE

SAŽETAK

Anizometropija je prvi korak na putu prema razvoju ambliopije u djece. Može se prevenirati i liječiti ukoliko se prepozna na vrijeme. Preporučeni su određeni ortoptičko-pleoptički postupci ovisno o objektivnom i subjektivnom kutu škljenja, stanju fuzije, vidnoj oštrini oba oka i pojedinačno, stanju očnog živca, vidni evocirani potencijali, (VEP), te retinalnoj korespondenciji djeteta nije ograničavajući faktor, ali se najbolja suradnja i rezultati očekuju u dobi od pet pa do dvanaest godina. Pristup, te rana i točna dijagnoza omogućuju i adekvatne postupke aplikacije/fita kontaktnih leća koristeći i prednosti novih materijala.