Spironolactone in the treatment of non-resolving central serous chorioretinopathy: A comparative analysis

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Introduction

CSC (central serous choriorretinopathy) is a posterior segment disease characterized by localized and limited serous detachments of the neurosensory retina often associated with focal detachment of an altered retinal pigment epithelium.

The incidence is estimated at 1 per 10,000, affecting predominantly men (72~88%).

Pathogenesis is still poorly understood.1-2

Acute CSC

1. characterized by detachment of the neurosensory retina with accumulation of serous fluid between the retinal pigment epithelium (RPE) and photoreceptor outer segment.

2. resolved spontaneously in 2-3 months, with visual acuity returning to close to premorbid levels

Chronic CSC

1. approximately 5% of CSC cases

2. characterized by areas of widespread diffuse RPE oedema

Spectral-domain optical coherence tomography (SD-OCT)

In the retina and choroid: the glucocorticoid receptor, MR (mineralocorticoid receptor), and HSD-2 (Hydroxysteroid dehydrogenase Type 2) are co-expressed.

Glucocorticoid-induced effects may result in part from MR activation in the retina and choroid.9,10

A animal model of CSC proved that the MR of the choroid also plays a role in CSC.11

Our hypothesis is that excessive occupancy of MR by glucocorticoids and/or excessive MR sensitivity or endogenous activation may increase choroidal thickness and susceptibility to CSC.

The results showed a significant treatment effect on SRF (subretinal fluid) and central macular in a previous study, sixteen eyes of 16 patients with CSC and persistent SRF for 3 months were treated with oral spironolactone thickness.11

Purpose

To evaluate the effect of spironolactone, a mineralocorticoid receptor antagonist, for nonresolving CSC patients.

Method

Retrospective chart review of patients

30 eyes of 30 patients of CSC

Spironolactone (50 mg once a day) or observation

One center study: Jeju National University Hospital between April 2013 and June 2016

Inclusion criteria

1. A symptomatic chronic CSC

2. Persistent SRF for at least 8 weeks

3. Cystoid macular oedema involving the fovea on OCT

Exclusion criteria

1. Previous photodynamic therapy, anti-vascular endothelial growth factor intravitreal injection

2. Diabetic retinopathy, choroidal neovascularization or polypoidal choroidal vasculopathy

3. History of other macular diseases

Results

All included patients: Thirty eyes of 30 patients (26 men and four women) with CSC

Table 1 summarizes patients demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Patients with CSC</th>
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<tbody>
<tr>
<td>Numbers of patients</td>
<td>30</td>
</tr>
<tr>
<td>Number of patients treated</td>
<td>30</td>
</tr>
<tr>
<td>with spironolactone</td>
<td>15</td>
</tr>
<tr>
<td>Average age (years)</td>
<td>49.6 ± 1.1</td>
</tr>
<tr>
<td>Number of males</td>
<td>26 (86.7%)</td>
</tr>
<tr>
<td>Duration of symptoms before treatment (months)</td>
<td>12.4 ± 2.4</td>
</tr>
<tr>
<td>History of systemic hypertension</td>
<td>4 (13.3%)</td>
</tr>
</tbody>
</table>

Spectral-domain optical coherence tomography (SD-OCT)

After 3 months Spironolactone treatment

1. SRF (µm; mean ± standard deviation): 432.57 ± 108.99 (at baseline) → 273.07 ± 71.16 (µm) at 3 months

2. BCVA (logMAR; mean): 0.25 ± 0.17 → 0.12 ± 0.09

Spironolactone demonstrated statistically significant visual acuity improvement and SRF reduction on at 3 months compared to baseline (P<0.05, P<0.005, respectively)

Table 2. Statistical overview of mean and standard deviation of SRF (µm) and BCVA (logMAR) at spironolactone treatment patients for baseline, at 1 month and at 3 months

<table>
<thead>
<tr>
<th>Treatment Interval</th>
<th>BCVA (logMAR)</th>
<th>SRF (µm)</th>
</tr>
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<tbody>
<tr>
<td>Baseline</td>
<td>0.25 ± 0.17</td>
<td>432.57 ± 108.99</td>
</tr>
<tr>
<td>1 month</td>
<td>0.12 ± 0.09</td>
<td>273.07 ± 71.16</td>
</tr>
<tr>
<td>3 months</td>
<td>0.12 ± 0.09</td>
<td>273.07 ± 71.16</td>
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*p<0.05

Conclusions

In naïve eyes with persistent SRF due to central serous choriorretinopathy, spironolactone significantly reduced the SRF and had a positive effect on recovery of visual acuity.

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1. Measurements

1.1. BCVA (best corrected visual acuity)

1.2. SRF: SD-OCT

2. The primary outcome:

2.1. the changes in BCVA

2.2. Secondary outcome: the changes in CSC

3. Patients were asked about potential side effects at every follow-up visit.

References


