

Anti-corticosteroids combined therapy for treatment of chronic central serous chorioretinopathy

Terapia combinada de anti-corticosteroides para o tratamento da coriorretinopatia serosa central

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ABSTRACT

The therapeutic impact is described with the combined use of two medications with different anti-corticosteroid actions in the clinical resolution of a patient with chronic central serous chorioretinopathy.

Keywords: Central serous chorioretinopathy/drug therapy; Adrenal cortex hormones/therapeutic use; Combined modality therapy; Case reports

RESUMO

Descrevemos nesse artigo o impacto terapêutico do uso combinado de duas medicações anti-corticosteroides com diferentes mecanismos de ação, na resolução clínica de um paciente com coriorretinopatia serosa central crônica.

Descritores: coriorretinopatia serosa central/tratamento farmacológico; Corticosteroides/uso terapêutico; Terapia combinada; Relatos de casos

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INTRODUCTION

The Central Serous Chorioretinopathy (CSCR) is characterized by serous retinal detachment and/or retinal pigment epithelial (RPE) detachment.⁽¹⁻⁴⁾ Visual symptoms occur mainly when macular involvement is noticed, considering that 80 to 90 per cent of the cases resolve spontaneously.⁽¹⁾ Patients that present the chronic clinical form or recurrent form have a worse visual prognosis and may need an therapeutic approach.⁽²⁻⁴⁾

Several treatment options are described for CSCR, going from systemic use medication such as anti-glucocorticoid, anti-mineralocorticoid, inhibition of carbonic anhydrase, intravitreal injection (anti-angiogenesis), and the use of laser and its many modalities (green, yellow, micro pulse and photodynamic therapy).⁽¹⁻⁴⁾

In this article we will describe the therapeutic impact on the clinical resolution of a patient with chronic CSCR, on which the association of two medications with different mechanisms of anti-corticosteroids action was used.

CASE REPORT

A 42 year old patient, white, male, from Rio de Janeiro, resident in this city, presented image distortion on the left eye in association with micropsia. He presented visual acuity (VA) in the range of 20/20 with best correction, previous segment without changes and discreet detachment on the sub foveal pigmented epithelium in the fundusoscopic. After a year of follow up and stable clinic condition, the patient presented some episodes of stress and developed concomitantly in the same eye sensorineural serous detachment (Figure 1). At this occasion presented vision loss to 20/200 along with central scotoma. A treatment with Spironolactone 50mg/24hs, Bromazepan 3mg/24hs and partial absence from professional activities was started. We observed the reabsorption of the sub retinal fluid in 3 weeks, remaining the PED sub foveal and the improvement on the visual acuity to 20/25.

During the clinical evolution, after 2 months of follow up, a new neurosensory retinal detachment occur, at this time it had a cloudy look, white yellowish and with fibrin (figure 2). Sustained the same therapeutic approach, in 1 month it was observed an improvement on the sub retinal fluid absorption, however a great quantity of sub foveal fibrin remained (figure 3) and an improvement of the corrected vision of 20/80 was noticed. After 3 months the same ocular clinic state can be observed along with a visual worsening of 20/100. At this point, the patient was clinically diagnosed with fungal lesions caused by leaven (*Tinea Pedis*) on the soles of his feet and on his interdigital spaces, that were treated simultaneously with the CSCR ocular condition, using Terbinafine 250mg/24hs orally for 28 days, and topical Itraconazole cream on the feet for the same period. On the third day of treatment, fluid and fibrin decrease were noticed, followed by CSCR termination within a week, visual acuity improvement to 20/60 by the end of one month (figure 4). All medication was suspended and lesions on feet were solved 3 weeks after the beginning of the treatment. However, after a month, a new recurrence happened with sub retinal fluid and no fibrin. Due to the excellent response of the antifungal, a treatment with Itraconazole 100mg/twice a day for 30 days was initiated and the complete retinal clinical condition were solved. The patient did not show any other reaction or unwanted side effect to the treatment performed.

After a year of post treatment, no other recurrence was observed, neither on the ocular condition nor on the dermatological

one, and the final visual acuity improved progressively to 20/25c/c, yet some decrease on the contrast sensibility and excess of light central visual obfuscation were noticed.



Figure 1: Retinography, fluorescein angiography and optical coherence tomography: the extensive combined detachment of the sensorineural retina and the pigmented retinal epithelium involving posterior pole. Fluorescein angiography shows a flaw in the window and a pigment leakage.



Figure 2: Retinography and optical coherence tomography: New recurrence after two months with sensorineural serous detachment.



Figure 3: Retinography and optical coherence tomography: large amount of yellowish sub retinal material accumulated in the foveal area (possibly fibrin), associated to a modest detachment of the pigmented retinal epithelium.



Figure 4: Retinography image in color and optical coherence tomography: After a one month treatment using combined anti corticosteroids, an important decline on the yellowish material amount, sub retinal fluid reabsorption and vision improvement.

DISCUSSION

The role of the steroids in the genesis of the CSCR is widely discussed today, and it is confirmed that its use is one of the main risk factor,⁽²⁻⁶⁾ therefore without a fully defined mechanism. The steroids especially the glucocorticoid, may mediate a clinical situation that promotes the emergence of CSCR, even though is used as medication or produced by the organism in response to stimulation. It is possible that other steroids such as mineralocorticoids, and sexual hormones even, may present molecular interaction with glucocorticoids and combined, influence CSCR, which represents the great metabolic complexity of this disease.⁽²⁻⁶⁾

The glucocorticoids in increased levels promote a change on the Ions transport, deregulation of the barrel epithelium, causing sodium and water retention and, in consequence, extracellular fluid accumulation and rise in tissue hydrostatic pressure,^(2-4,7) both which appear in the retina as sensorineural and pigment epithelium detachments. It is known that glucocorticoids also act in the choroid to encourage vascular reactivity and increase its permeability, a mechanism also involved in the CSCR genesis.⁽²⁻⁴⁾

The main goal of the CSCR treatment is to reapply the retina with the sub retinal fluid absorption.⁽²⁻⁴⁾ The sub retinal fluid persistence or frequent recurrences may induce to modifications and underlying renovations not only of the retinal pigment epithelium but also of the photoreceptors, with final visual damage.⁽²⁻⁴⁾ In our article, we made an association between the spironolactone and the terbinafine with the aim of treat the retinal condition that refers to CSCR, and a simultaneous systemic fungal infection both by interdigital and feet soles onset.

Spironolactone is a diuretic medication, that acts by blocking the aldosterone receptors, reducing its action and promoting the improvement of the ocular clinical condition.^(2,4,7) We noticed that the isolated use of spironolactone helped the fluid absorption and improved CSCR momentarily, yet without influence on PED, and it did not prevent the three recurrences in a row, or its progression into chronicity, in a 5 month period. Despite the fact that the molecular bases are not elucidated, it is possible that steroid receptors block promoted by spironolactone at the beginning of the treatment produces an improvement on the CSCR clinical condition,^(2,5) but with time, through an up regulation

mechanism maybe with an increase of the number of receptors, this improvement decreases. Another possibility would also be the rise of cortisol production itself as an answer to its receptors block, feedback (+), what would induce a clinical worsening after some time of the medication use, or by suspending it, as observed in this patient. He presented consecutive recurrences and chronicity on his clinical condition with the isolated use of spironolactone. This clinical response at CSCR is described with spironolactone⁽⁵⁾ and also along with the use of finasteride, a drug that blocks selectively sexual steroids metabolism.⁽²⁾

When was initiated the treatment using antifungal and terbinafine, we observed the complete resolution of the sub retinal fluid within a week, PED disappearance, and VA improvement. Aside from the sub retinal fluid, could be noticed that the vast amount of fibrin had vanished. Besides the new recurrence a month later, the antifungal treatment continuance was recommended because of its first excellent response, and once again was used in an isolated way. The complete resolution of the retinal condition with no recurrence in a one year follow up period and with visual acuity improvement proved the performed treatment effectiveness in this case.

The antifungal action in a steroid metabolism scenario occurs in the synthesis inhibition of the corticosteroids as well as of the sexual hormones. In this mechanism the glucocorticoids formation block is more pronounced, taking place in two different places on its formation.^(7,8) The decrease on the steroids production leads to serum lower levels and possibly reducing its action and enhancing the CSCR.^(2,7)

When the two drugs are associated, we observed a combined pharmacological effect of the spironolactone and the antifungal when it comes to steroids metabolism, particularly of the corticosteroids (both mineralocorticoids and the glucocorticoids). A receptor block is made in a molecular level, as well as a synthesis reduction intensifying the inhibition action in this way, diminishing a possible hormonal feedback and increasing the treatment effectiveness, according to what could be noticed in our patient.

We also know that the serum rise of the cortisol causes susceptibility to systemic infections.⁽⁷⁾ Unknowingly a leaven infection was discovered along with the ocular condition that were treated simultaneously with CSCR fully regression and infection improvement concomitantly. Therefore another possible scenario for the clinical recovery associated to the therapy applied would be the possible use of an action against the leaven in a systemic approach, involving not only interdigital infections, groin area (tinea pedis e cruris), but also a possible retina or choroid impairment (tinea retina).

We observed that the therapeutic combined used acted in favor of the clinical evolution of the CSCR. It is not possible to imply in this article how did it happen, nonetheless planned studies with a wider sampling and devoted to investigate the associated use of both ant corticoids medications combined (Combined Anti-Corticosteroids therapy/CAtCor Therapy), would allow a better analysis. In parallel, a research to identify fungal infections associated with CSCR could be done, in order to find out if there is any risk factor influence.

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