

Use of H.P. Acthar Gel in Chronic Anterior Segment Inflammation Unresponsive to Topical Medications

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Abstract

Introduction: To report the management of chronic scleritis and the use of a novel anti-inflammatory agent in a clinical setting. This medication is currently approved for a wide range of inflammatory ocular conditions, but scant literature exists to document effectivity in clinical situations. No current literature exists to this author's knowledge on the effect of Acthar on chronic unresponsive scleritis or its effect on chronic scleritis with steroid responsive glaucoma in a patient requiring steroids for inflammatory control.

Case presentation: The patient was a 43 year old African American male. Signs and symptoms of chronic idiopathic scleritis were uncontrolled by topical non-steroidal, topical steroid and additionally; patient was determined to be a steroid responder. Once Acthar therapy was initiated, all signs and symptoms resolved as did the steroid responsive glaucoma as the topical steroids were withdrawn. All topical medications were able to be withdrawn within five weeks of the start of Acthar. No adverse events were noted during the course of treatment with Acthar.

Conclusion: H.P. Acthar gel may be an effective alternative for resistant ocular inflammation especially in those experiencing side effects related to topical medications. More study is warranted to determine the most effective way to utilize this novel medication in chronic inflammatory ophthalmic conditions.

Keywords: Scleritis; Inflammation; H.P. Acthar gel; Repository gel; Anti-inflammatory

Introduction

H.P. Acthar gel is FDA approved for severe acute and chronic allergic and inflammatory processes involving the eye and its adnexa. Acthar stimulates the body's endogenous release of cortisol reducing inflammation by using a unique mechanism of action binding to five identified melanocortin receptors. Melanocortin receptors are found on a range of immunomodulating cells (T-regulatory cells, T helper cells, B cells, dendritic cells and macrophages) as well as retinal pigment epithelial cells [1].

Even though H.P. Acthar has a wide range of approved uses: keratitis, iritis, iridocyclitis, diffuse posterior uveitis, choroiditis, chorioretinitis, anterior segment inflammation and optic neuritis, very little scientific literature exists regarding its use and no articles are available through PubMed on its use ophthalmologically [2].

Case Presentation

To report the management of chronic scleritis and the use of a novel anti-inflammatory agent, H.P. Acthar Gel. Clinical data was collected from a forty-three year old male diagnosed with chronic bilateral scleritis and keratoconjunctivitis. The patient had previously undergone a successful corneal transplant with stable recovery in his left eye for keratoconus six years earlier. The patient also had been diagnosed with steroid responsive glaucoma with maximum

intraocular pressures noted at approximately 40 mm Hg. His pressures were initially controlled with brinzolamide/brimonidine twice daily in both eyes and acetazolamide 250 mg daily. The patient had seen several providers for anterior segment inflammation and redness and failed to respond to loteprednol, bromfenac 0.075%, prednisolone forte, bromfenac 0.07%, lifitegrast 5.0% or preserved free tears (Figure 1).



Figure 1: Before Acthar initiation

To rule out conjunctivitis medicamentosa, all topical medications were suspended at the initial visit to our clinic for six weeks with no

change in the level of injection or inflammation. Laboratory testing was ordered for rheumatoid factor, c-ANCA, p-ANCA, complement C3 and C4, ANA, ACE, HLAB27, Hepatitis B, RPR, FTA-ABS, TB skin testing, Lyme titers, sedimentation rate. All were performed and reported as negative as was a chest X-ray (Figure 2).



Figure 2: 6 weeks post Acthar initiation

Eighty units of H.P. Acthar gel repository corticotropin subcutaneously were prescribed once daily for five days then tapered to twice weekly. Three weeks after H.P. Acthar gel was begun the patient reported improved redness and recurrent but decremental conjunctival injection between injections. No side effects were noted and visual acuity and intraocular pressure remained stable. Trace injection of both conjunctiva were noted on slit lamp examination. Five weeks after initiation of H.P. Acthar gel, the patient noted only minimal redness and no side effects. Slit lamp examination revealed no conjunctival injection with stable visual acuity and intraocular pressures.

Discussion

H.P. Acthar repository gel is approved by FDA to treat infantile spasms [3], multiple sclerosis relapse [3], systemic lupus erythematosus [4], proteinuria in nephrotic syndrome [5], rheumatoid arthritis, dermatomyositis and polymyositis, psoriatic arthritis and many ophthalmic conditions including severe acute and chronic allergic and inflammatory processes involving the eye and its adnexa such as: keratitis, iritis, iridocyclitis, diffuse posterior uveitis and anterior segment inflammation [6].

H.P. Acthar Gel administered every 72 h contains ACTH, a melanocortin peptide which binds to all five melanocortin receptors found throughout the body, as well as the eye. It binds to the MC2 receptor and has the potential to provide the patient with a steroidogenic effect without the use of synthetic steroid. H.P. Acthar is believed to have anti-inflammatory and immunomodulatory properties to help control chronic inflammation by increasing a patient's own endogenous cortisol [6].

The main side effects associated with H.P. Acthar Gel are similar to those of steroids including increased risk of infections, increased blood pressure, body salt and fluid retention, unpredictable response to vaccines, stomach ulcers, mood or behavior changes, cataracts, glaucoma, worsened diabetes, bone density loss, problems with growth and physical development in children [6].

Conclusion

H.P. Acthar corticotropin repository gel is a novel anti-inflammatory treatment that may be useful in certain ocular inflammatory disorders like scleritis that are unresponsive or incompletely responsive to traditional topical medications. Caution must be used in patients who are steroid responders or at risk for glaucoma.

This previously FDA approved medication was used in accordance with recommended dosages and guidelines and for FDA approved uses.

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References

1. www.acthar.com/healthcareprofessional
2. [https://www.ncbi.nlm.nih.gov/pubmed/?term="acthar"and"ophthalmology"](https://www.ncbi.nlm.nih.gov/pubmed/?term=)
3. Gold LS, Schepman PB, Wang WJ, Philbin M, Niewoehner J, et al. (2016) Healthcare Costs and Resource Utilization in Patients with Infantile Spasms Treated with H.P. Acthar Gel. *Adv Ther* 33: 1293-1304.
4. Decker DA, Grant C, Oh L, Becker PM, Young D, et al. (2014) "Immunomodulatory effects of H.P. Acthar Gel on B cell development in the NZB/W F1 mouse model of systemic lupus erythematosus. *Lupus* 23: 802-812.
5. Hiladunewich MA, Cattran D, Beck LH, Odutayo A, Sethi S, et al. (2014) "A pilot study to determine the dose and effectiveness of adrenocorticotrophic hormone (H.P. Acthar Gel) in nephrotic syndrome due to idiopathic membranous nephropathy. *Nephrol Dial Transplant* 29: 1570-1577
6. H.P. Acthar Gel product label, www.acthar.com for professionals.