**ACTH Analogue as Novel Treatment Regimen in Pan-Uveitis and Ocular Cicatricial Pemphigoid**

**Yael Sharon¹, David S. Chu¹,²**

¹Metropolitan Eye Research and Surgery Institute, Palisades Park, New Jersey, USA
²Associate Professor of Clinical Ophthalmology, Institute of Ophthalmology and Visual Science, New Jersey Medical School, Rutgers University, Newark, New Jersey, USA

Financial interest: This study was funded in part by Mallinckrodt Pharmaceuticals as a writing grant. Dr. David S. Chu serves as a consultant for Mallinckrodt Pharmaceuticals. 

---

**Background**

- Pan-uveitis is a simultaneous inflammation in the anterior chamber, vitreous humor, and retina or choroid. It is a vision threatening disease, typically chronic and may be associated with systemic inflammatory processes. Treatment mainly consists of corticosteroids and other immunomodulatory therapy (IMT).

- Ocular cicatricial pemphigoid (OCP) is a specific entity in a group of diseases, called mucous membrane pemphigoid. It is a potentially blinding, autoimmune blistering disorder, mainly affecting the conjunctiva. Systemic treatment includes corticosteroids and other IMT in order to prevent cicatrization.

- Adrenocorticotropic hormone (ACTH) gel is an ACTH analogue, which provides extended release of ACTH, and stimulates the adrenal gland to secrete endogenous steroids.

- H.P. Acthar® Gel (repository corticotropin injection; Mallinckrodt Pharmaceuticals) has additional therapeutic effects on the humoral immune system, beyond its role in adrenal steroidogenesis. It is approved by the FDA for a wide range of acute and chronic, allergic and inflammatory ocular conditions.

- The aim of this study is to describe the potential role of subcutaneous ACTH gel in the treatment of non-infectious pan-uveitis and OCP.

---

**Cases: Case 1**

- A 49 year old male
- History of chronic non-infectious pan-uveitis OU with the following complications:
  - Cataract
  - Glaucoma
  - Macular edema
- Previously treated with intraocular and systemic steroids, however, inflammation persisted.
- Therapy with twice weekly ACTH gel (80 units/ml) was initiated, with Prednisone tapered down from 20 mg/day to 5 mg/day at last follow up (F/U).
- At last F/U, after 15 months of treatment:
  - Visual acuity has improved
  - Intraocular pressure was WNL (22/17)
  - No inflammation was observed
  - Macular edema has resolved

---

**Case 2**

- A 36 year old male
- History of chronic non-infectious pan-uveitis OU with the following complications:
  - Cataract
  - Glaucoma
  - Macular edema
- Previously treated with systemic steroids and biologic agents, however, inflammation persisted.
- Therapy with twice weekly ACTH gel was initiated, with Prednisone tapered down from 20 mg/day to none at last F/U.
- At last F/U, after 14 months of treatment:
  - Visual acuity has improved
  - Intraocular pressure was WNL (14/19)
  - No inflammation was observed
  - Macular edema was still present, but with gradual improvement

---

**Cases: Case 3**

- A 64 year old female, HLA-B27+  
- History of chronic non-infectious pan-uveitis OU with the following complications:  
  - Cataract  
  - Macular pucker and ERM  
  - Vitreous hemorrhage  
- Previously treated with intraocular injections and systemic steroids and various IMT, with side effects development and progressive cicatrization.
- Therapy with twice weekly ACTH gel was initiated, with Prednisone tapered down from 10 mg/day to 3 mg/day at last F/U.
- At last F/U, after 12 months of treatment:  
  - Visual acuity has improved  
  - Intraocular pressure was WNL (18/20)  
  - No inflammation was observed

---

**Case 4**

- A 75 year old female
- History of ocular cicatricial pemphigoid OU with the following complications:
  - Cataract
  - Glaucoma
  - Corneal epithelization, s/p OS PKP
- Previously treated with local treatment, systemic steroids and IMT, however, with side effects development and progressive cicatrization.
- Therapy with twice weekly ACTH gel was initiated, with Prednisone tapered down from 10 mg/day to none at last F/U.
- The patient stopped ACTH gel treatment for 3 months (due to loss of coverage) and then immediately flared up upon treatment cessation.
- At last F/U, after 13 months of treatment:
  - Visual acuity has improved
  - Intraocular pressure was WNL (14/12)
  - No inflammation was observed
  - Disease progression was halted

---

**Therapy and Outcome**

- During mean treatment period of 13 months, all patients demonstrated:  
  - Significant improvement in ocular inflammation  
  - Visual acuity was stable  
  - No significant adverse effects  
- Systemic steroids dosage was successfully reduced from a mean of 15 mg/day at start to 2 mg/day on average at last follow up.

---

**Conclusions**

- According to our experience of treatment with ACTH gel for > 1 year, it may be an effective alternative therapy in the management of pan-uveitis and OCP.
- Specifically, ACTH gel can play a role in:  
  - Chronic and steroid-dependent cases  
  - Conditions that do not respond to IMT  
  - Patients who are not able to tolerate IMT due to side effects  
- ACTH gel appears to be a safe, long-term alternative for patients with chronic inflammatory diseases.