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## Novel treatment for vision threatening uveitis

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**Introduction**: Uveitis is a leading cause of preventable blindness. It is responsible for 25% of blindness in the developing world and 30,000 new cases of blindness per year in the United States. 35% of all uveitis patients have visual impairment. As such, uveitis is a worldwide problem of significant proportions with peak onset during the wage-earning years (mean age at presentation of 40 years) which magnifies the socioeconomic impact of the disease. Furthermore, treatment of this disease in many cases involves the use of medications that are expensive and have significant systemic side effects. In this paper, we discuss the use of intraocular adalimumab for the treatment of vision threatening uveitis.

**Methods**: In a pilot study we investigated the safety and efficacy of intravitreal adalimumab (IVA) (1.5 mg/0.03 ml intravitreal injection every month) for the treatment of active uveitis as a de novo treatment and as a rescue therapy in patients on treatment with systemic adalimumab.

**Results**: 6/7 patients (12/13 eyes) completed 26 weeks of treatment. One patient (1 eye) failed treatment; 7/12 eyes had improvement of two ETDRS lines; 3/3 eyes had resolution of anterior chamber cells; 9/10 eyes with vitreous haze had zero haze at 26 weeks and 5/8 eyes with macular edema had complete resolution. Median fluorescein angiography score improved from 14 to 4 on last follow-up. Seven eyes of four patients with Behcet's panuveitis on systemic adalimumab therapy were treated for breakthrough attacks with IVA. 13 breakthrough attacks were documented over three years. The mean number of injections necessary for resolution of an attack was 2.4 over an average of 2.6 months. 3/13 attacks resolved after one injection.

**Conclusion & Significance**: Intravitreal adalimumab may be an effective, practical, safe and affordable adjunctive therapy for the control of de novo or breakthrough inflammation in select patients.

## **Recent Publications:**

- 1. Jaffe G J, Dick A D, Brézin A P, et al. (2016) Adalimumab in patients with active noninfectious uveitis. N Engl J Med. 375(10):932–943.
- 2. Nguyen Q D, Merrill P T, Jaffe G J, et al. (2016) Adalimumab for prevention of uveitic flare in patients with inactive noninfectious uveitis controlled by corticosteroids (VISUALII): A multicentre, double-masked, randomized, placebo controlled phase 3 trial. Lancet 6736:1–10.
- 3. Durrani K, Kempen J H, Ying G-S, et al. (2016) Adalimumab for ocular inflammation. Ocul Immunol Inflamm. 22:1–8.
- 4. Hamam R N, Barikian A W, Antonios R S, et al. (2016) Intravitreal adalimumab in active noninfectious uveitis: A pilot study. Ocul Immunol Inflamm. 24(3):319–326.
- 5. Tsilimbaris M, Diakonis V F, Naoumidi I, et al. (2009) Evaluation of potential retinal toxicity of adalimumab (Humira). Graefes Arch Clin Exp Ophthalmol. 247:1119–1125.
- 6. Manzano R P, Peyman G A, Carvounis P E, et al. (2008) Ocular toxicity of intravitreous adalimumab (Humira) in the rabbit. Graefes Arch Clin Exp Ophthalmol. 246:907–911.

## Biography

Rola N Hamam is an Associate Professor of Ophthalmology at the American University of Beirut. She is the Director of the Residency Training Program and the Medical Retina Fellowship Training Program. She completed her Residency in Ophthalmology at the American University of Beirut and Fellowship Training at Harvard University in Boston at the Beetham Eye Institute, the Massachusetts Eye and Ear Infirmary, and the Massachusetts Eye Research and Surgery Institution until 2008. She returned to her home country and joined the Faculty at the American University of Beirut in 2009 to start the first uveitis specialty referral clinic in Lebanon. She is a Member of several national and international societies. She has organized and lectured on Ocular Immunology and Uveitis in many national and international conferences and scientific meetings. She is involved in multiple research projects on ocular inflammatory and infectious disease.