Suprachoroidal Administration of Triamcinolone Acetonide: Results of a Phase 2 Study of Patients with Noninfectious Uveitis

Steven Yeh, MD
M. Louise Simpson Associate Professor of Ophthalmology
Emory Eye Center

American Society of Retina Specialists Annual Meeting
August 14, 2016
San Francisco, CA

Acknowledgments

Phase 2 Study Investigators

- Robert Wang, MD
- Shree K. Kurup, MD
- C. Stephen Foster, MD
- Thomas Albini, MD
- Lance Bergstrom, MD
- Debra Goldstein, MD
- Quan D Nguyen, MD; Diana Do, MD
- Sarju Patel, MD
- Lana Rifkin, MD
- Sunil Srivastava, MD

Clearside Biomedical

- Glenn Noronha, PhD
- Jennifer M. Kissner, PhD

Background

Uveitis is 5th leading cause of vision loss in developed countries[1]

- Macular edema (ME) is the leading cause of vision impairment and vision loss in uveitis[2]
- ME is common
  - 40% to 60% of intermediate, pan-, and posterior uveitis[3]
  - 20% anterior[3]

Therapeutic options for ME

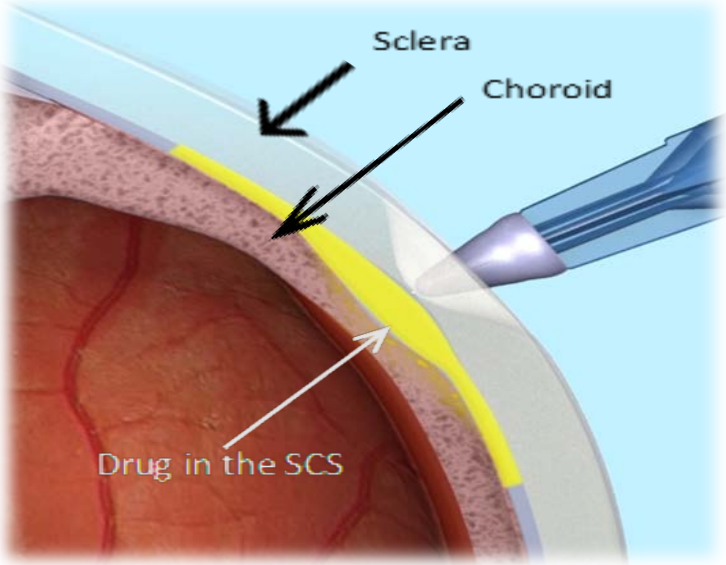
- Local periocular and intravitreal corticosteroids
- Systemic corticosteroids and steroid-sparing medications

1. Karim et al; Clin Ophthalmol. 2013;7:1109
2. Dick AD; *Br J Ophthalmol*. 1994;78:1
3. Lardenoye CWTA et al. *Ophthalmology*. 2006;113(8):1446

Suprachoroidal Administration
Advances For The Treatment of Noninfectious Uveitis

Suprachoroidal injection could become a useful approach for the treatment of ocular conditions affecting the posterior segment of the eye

- **Novel technique for suprachoroidal injection**
  - 30G needle approx. 1000 micron in length
  - Proprietary microinjector syringe
- **Potential benefits**
  - Efficacy advantages due to higher bioavailability
  - Longer duration
  - Fewer side effects

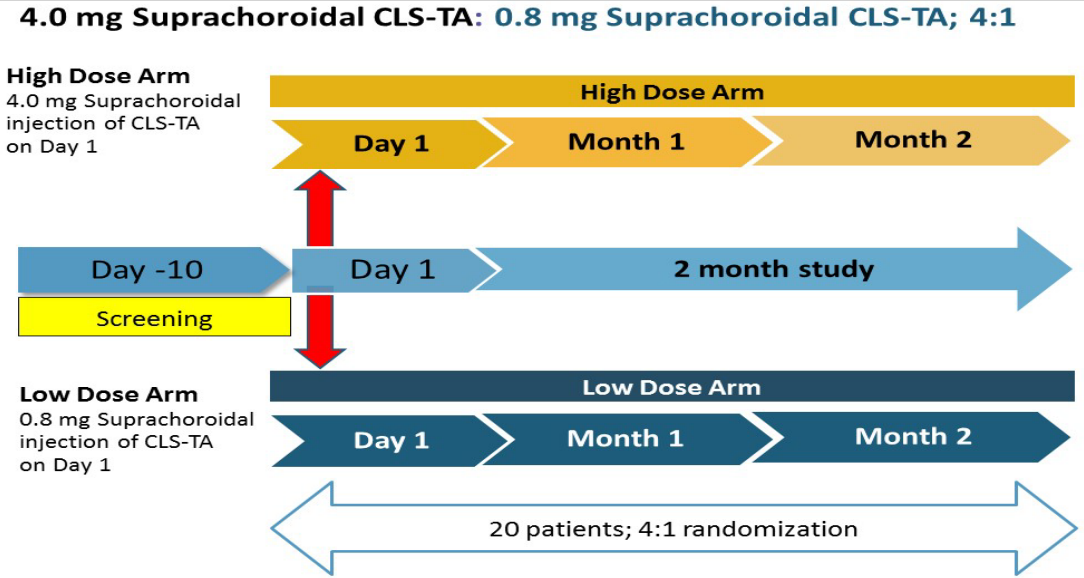


Background: DOGWOOD Clinical Study

Phase 2 study enrolled patients with macular edema due to uveitis

- Noninfectious disease etiologies
- All anatomic locations included
  - Anterior
  - Intermediate
  - Posterior
  - Panuveitis

Study Design



- The study was a randomized, masked, controlled, multi-center study in subjects with uveitis
- Macular edema ≥310 µm in the central subfield (CSF) using a Heidelberg Spectralis
- ETDRS BCVA score of ≥ 20 letters read (20/400 Snellen approximate) in each eye
- Study was powered only for the 4.0 mg dose; only these data will be presented

CLS1001-201: Randomization & Disposition

Protocol Design: Target 20 (16:4) subjects - Actually Randomized: 22 (17:5)

Total Number of Subjects	CLS-TA 4.0 mg N=17	CLS-TA 0.8 mg N=5	Total
Randomized	17	5	22
Completed	17	5	22
Discontinued	0	0	0
Safety	17	5	22
Intent-to-treat (ITT)	17	5	22

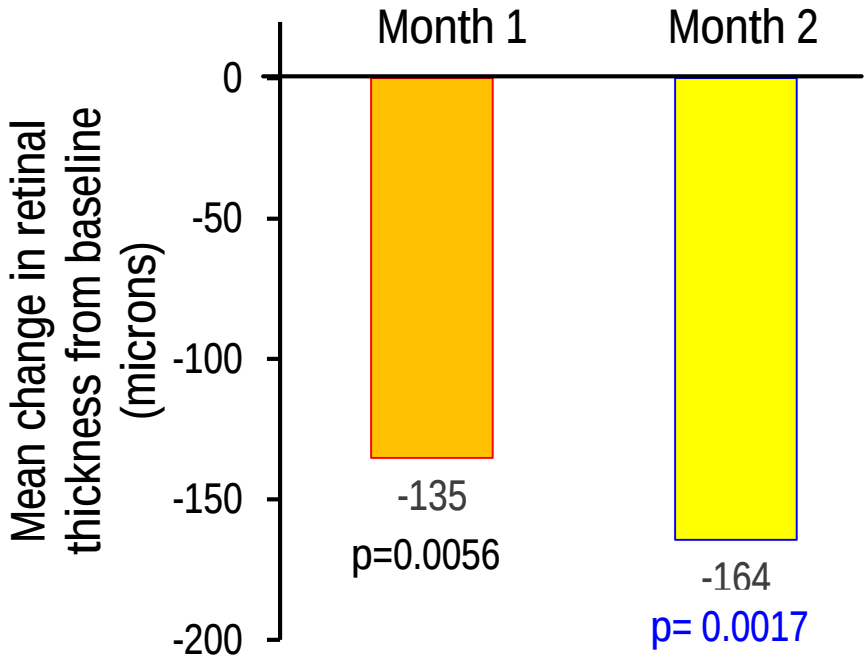
Demographics

Parameter	CLS-TA 4.0mg N=17	CLS-TA 0.8mg N=5	Total N=22
Female, n (%)	8 (47)	4 (80)	12 (55)
Age in years, median (min, max)	50 (20, 83)	53 (24, 69)	53 (20, 83)
Race, n (%)			
African American	2 (12)	2 (40)	4 (18)
Caucasian	15 (88)	3 (60)	18 (82)
Ethnicity, n (%)			
Hispanic or Latino	2 (12)	0	2 (9)
Not Hispanic or Latino	15 (88)	5 (100)	20 (91)

Diagnosis Overview / Uveitis Distribution

	CLS-TA 4.0mg (N=17)	CLS-TA 0.8mg (N=5)	Total (N=22)
Classification of Uveitis n (%)			
Anterior Uveitis	2 (11.8)	2 (40.0)	4 (18.2)
Intermediate Uveitis	5 (29.4)	2 (40.0)	7 (31.8)
Posterior Uveitis	1 (5.9)	0	1 (4.5)
Panuveitis	9 (52.9)	1 (20.0)	10 (45.5)
Etiology of Non-Infectious Uveitis n (%)			
Idiopathic	12 (70.6)	2 (40.0)	14 (63.6)
Sarcoidosis	3 (17.6)	1 (20.0)	4 (18.2)
Behcet's Syndrome	1 (5.9)	0	1 (4.5)
HLA-B27 Related	1 (5.9)	0	1 (4.5)
Birdshot Retinochoroidopathy	2 (11.8)	0	2 (9.1)
Pars Planitis	2 (11.8)	1 (20.0)	3 (13.6)
Other	0	1 (20.0)	1 (4.5)

Central Subfield Thickness – 4.0 mg Dose



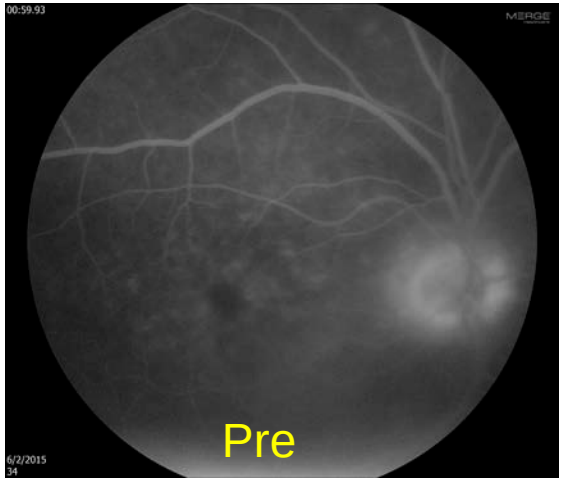
N=16
ITT population

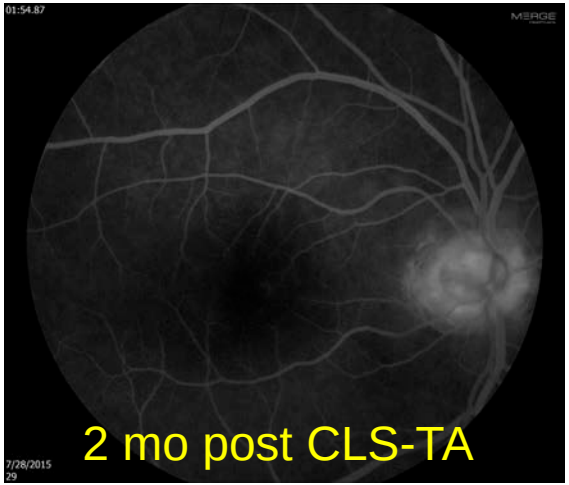
Mean baseline = 526 µm

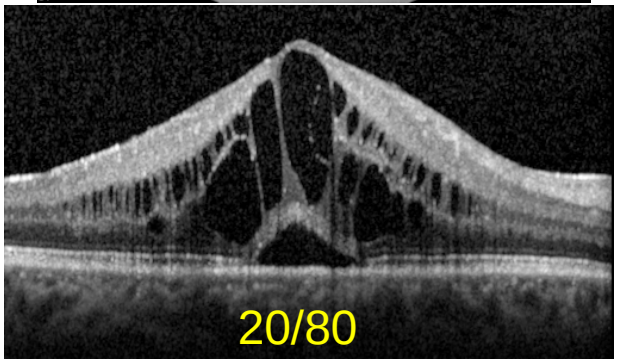
Macular Edema Endpoints

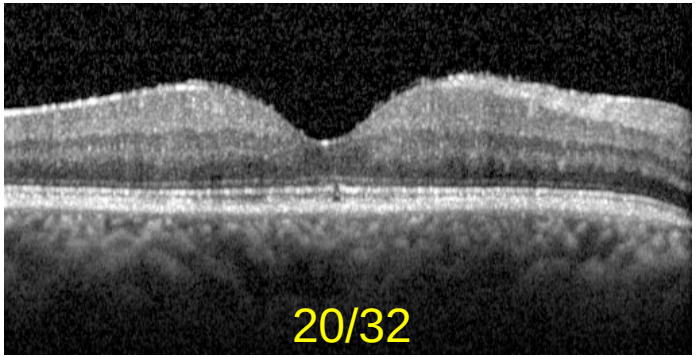
Visit	CST information	4.0 mg (N = 16)
Month 2	≥ 20% reduction in CST	11 (69%)
	CST < 310 microns	9 (56%)

Illustrative Patient

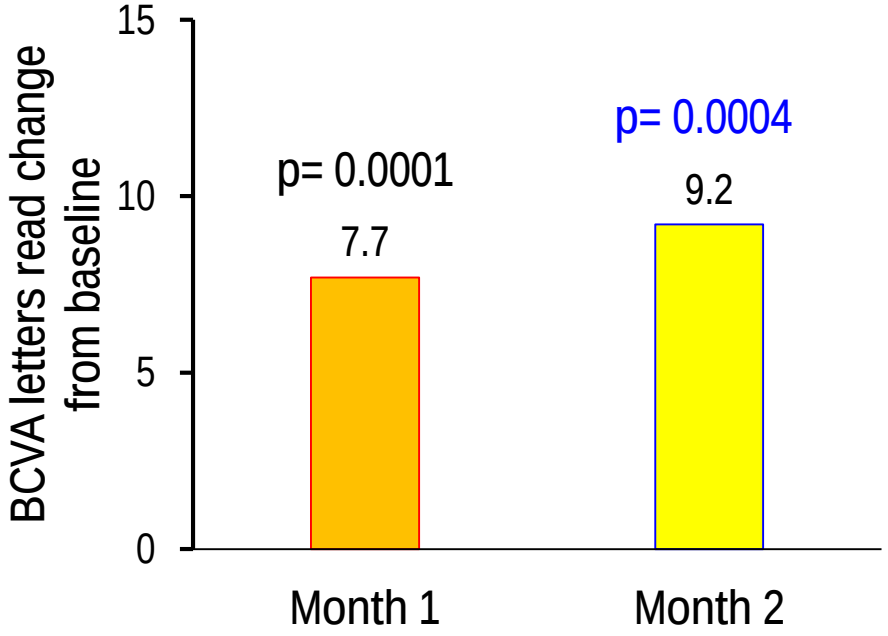








Best Corrected Visual Acuity – 4.0 mg Dose



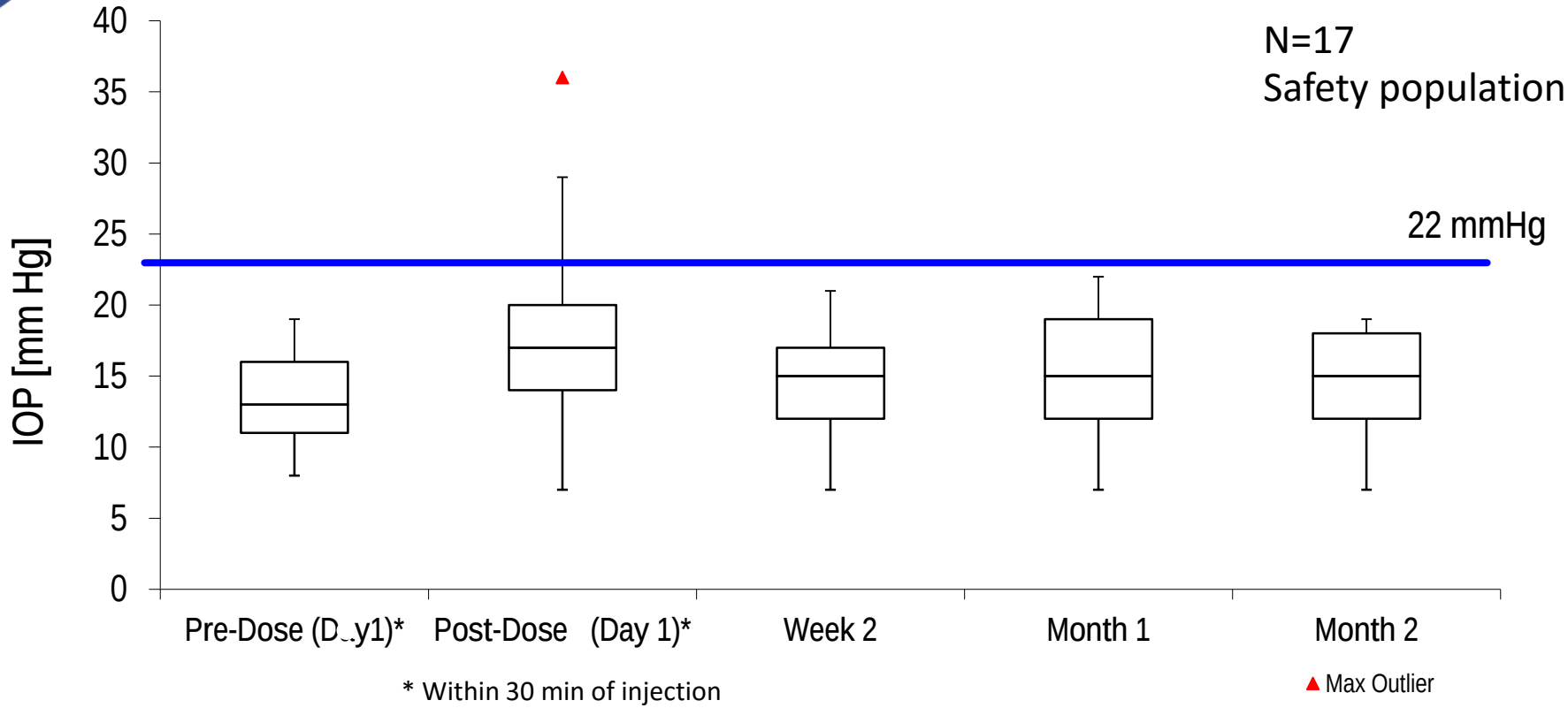
N=17
ITT population

Mean baseline = 60 letters

Ocular Adverse Events

Parameter	CLS-TA 4.0 mg N=17; n (%)
Total number of adverse events	**12**
Number of subjects with at least 1 AE	8 (47)
Eye Disorders	**6 (35)**
Conjunctival hemorrhage	1 (6)
Conjunctival edema	1 (6)
Dry Eye	1 (6)
Eye Pain	3 (18)
Ocular discomfort	1 (6)
Punctate keratitis	1 (6)
Uveitis	1 (6)
General disorders and admin. Site Conditions	**2 (12)**
Injection site pain	1 (6)
Papillitis	1 (6)
Intraocular pressure increased	1 (6)

Intraocular Pressure - 4.0 mg Dose



Intraocular Pressure Safety Set Listing 16.2.6-1.3 (1/18/16)

Highlights From Phase 2 Trial

Injection of TA to the SCS was well tolerated and produced significant reductions in CST at 2 months

- No IOP increases attributable to steroid in this study

Significant improvements in anatomy by OCT

Significant improvements in BCVA

Improvements with other signs of uveitis

- (1) anterior chamber cell, (2) flare, and (3) vitreous haze (data not shown)

Suggests that suprachoroidal CLS-TA effective for the treatment of uveitis, including macular edema

Conclusions

Study results provide strong rationale for continued development of a treatment for ME associated with noninfectious uveitis through suprachoroidal administration of CLS-TA

- Phase 3 trial enrollment is ongoing

Suprachoroidal administration offers a promising platform for the treatment of noninfectious uveitis