Sustained 30 Day Effect of an Intracanalicular Dexamethasone Insert for Treating Ocular Itching Associated with Allergic Conjunctivitis

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Disclosures

- **Presenter:** Steven Silverstein was an investigator in the current study.
- **Co-authors:** Kenneth R Kenyon and Eugene B. McLaurin were investigators in the current study. Erin Reilly, Rabia Gurses-Ozden, and Michael H. Goldstein are employees of Ocular Therapeutix.
- **Funding:** This study was supported by Ocular Therapeutix.

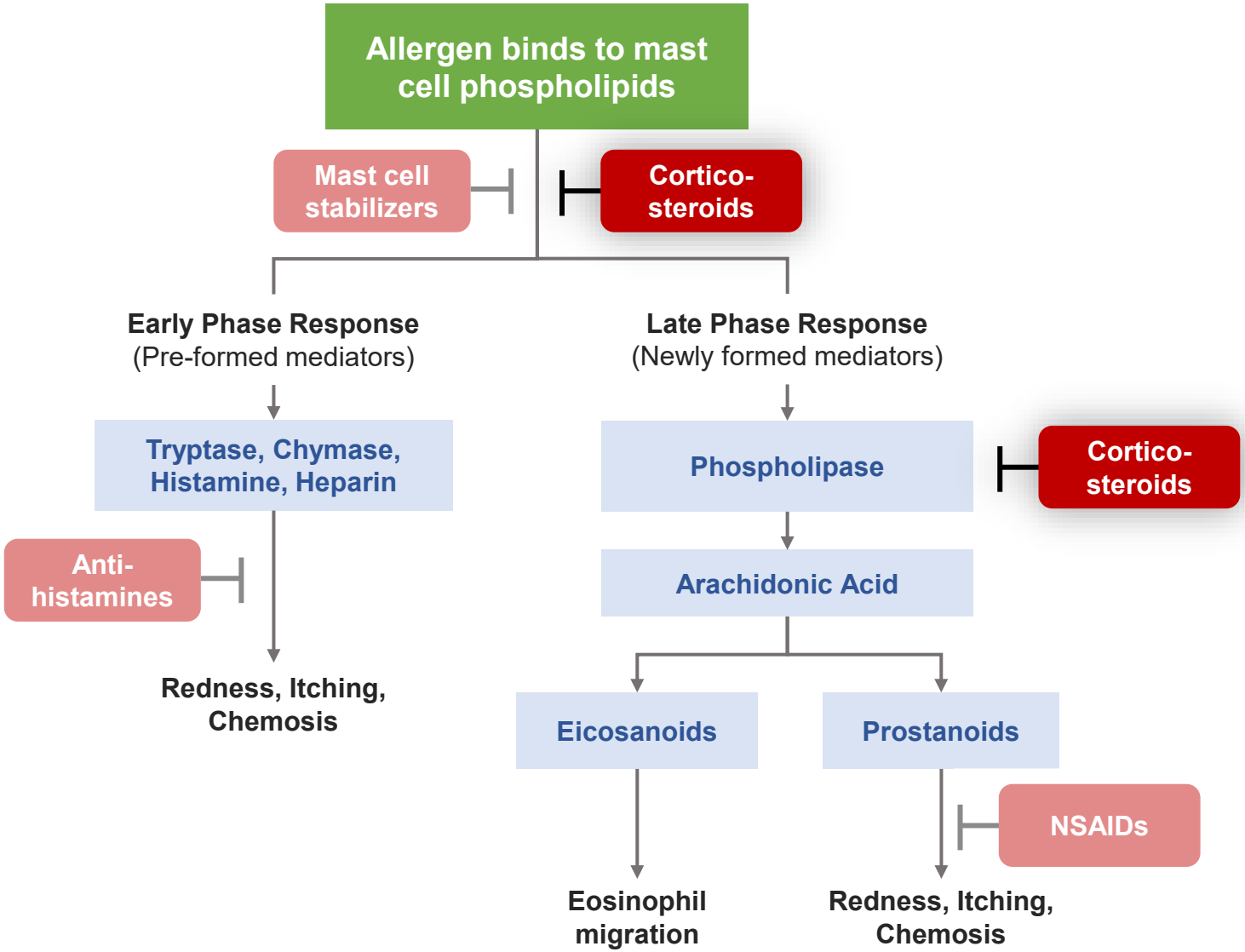
Background

Allergic conjunctivitis (AC) is an inflammatory-mediated reaction characterized by an early and late phase response[1-4]

Common topical treatments may be effective for mild symptoms, but may have limitations[3]:

- Effects do not last a full 24 hours
- Inadequate for moderate to severe symptoms
- Narrow targets in the allergic cascade
- Can be misused/overused by patients
- Contain preservatives

There is an unmet need for a durable, preservative-free treatment that cannot be misused/overused



References: 1. Dupuis P, et al. *Allergy Asthma Clin Immunol*. 2020;16:5. **2.** Bielory L, et al. *Allergy Asthma Proc*. 2013;34(5):408-420. **3.** Carr W, et al. *Allergy Rhinol (Providence)*. 2016;7(2):107-114. **4.** La Rosa M, et al.. *Ital J Pediatr* 2013;39:18.

Figure adapted from Bielory BP, et al. *Acta Ophthalmol*. 2012;90(5):399-407.

Abbreviation: NSAIDs, non-steroidal anti-inflammatory drugs

DEXTENZA (dexamethasone ophthalmic insert) 0.4 mg

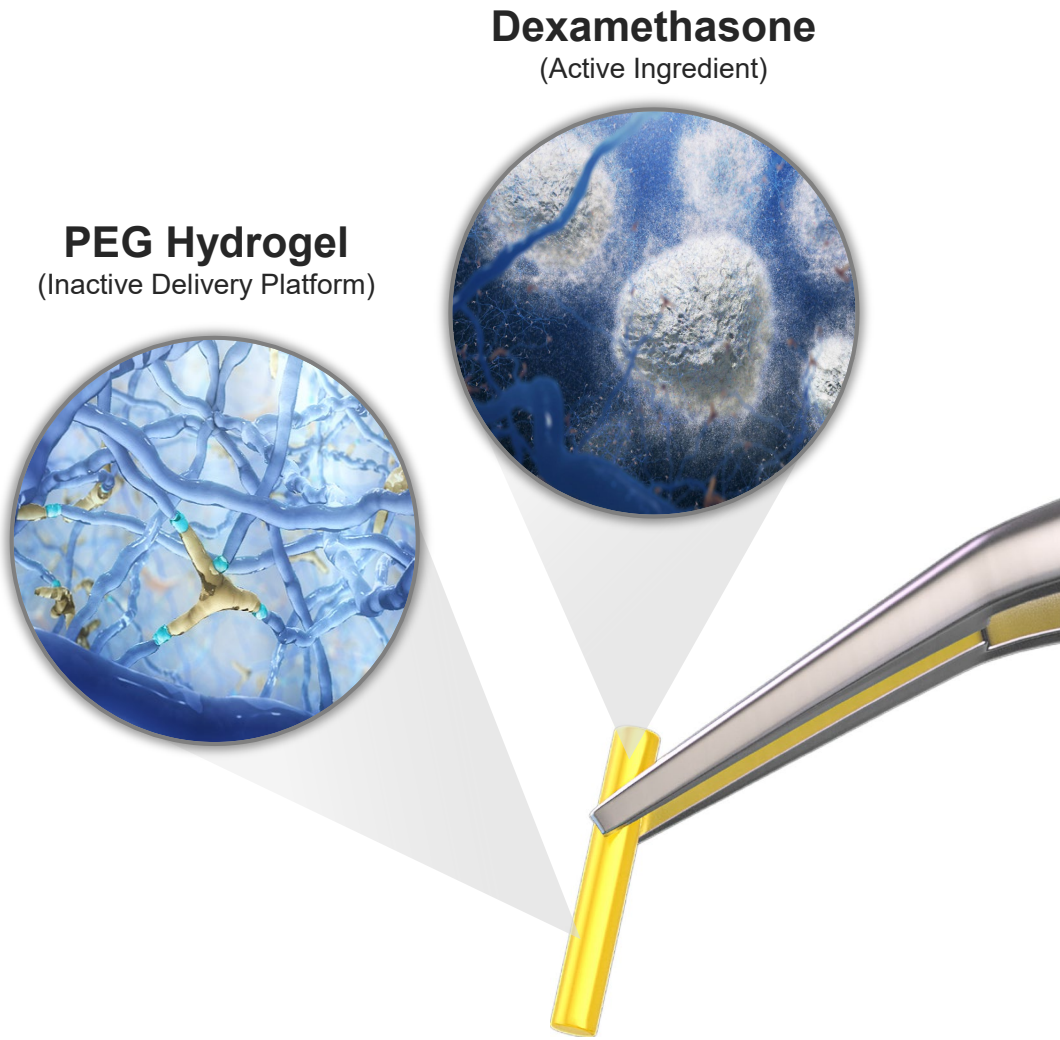
DEXTENZA: A Unique Approach to Treating Allergic Conjunctivitis

- Intracanalicular steroid insert that releases dexamethasone to the ocular surface in a sustained and tapered fashion over 30 days
- Alternative to traditional steroid eye drops
- Preservative-free
- Resorbable; no need for removal

FDA-approved for:

- Treatment of ocular itching associated with allergic conjunctivitis
- Treatment of postop ocular inflammation and pain

Approval for ocular itching associated with allergic conjunctivitis was based on efficacy data from three Phase 3 clinical trials



Reference: DEXTENZA [prescribing information]. Bedford, MA; Ocular Therapeutix, Inc.; 2021.

Abbreviation: PEG, polyethylene glycol

Three Phase 3 DEXTENZA Clinical Trials

Objective: To evaluate the safety and efficacy of DEXTENZA for the treatment of signs and symptoms of allergic conjunctivitis

Study Design

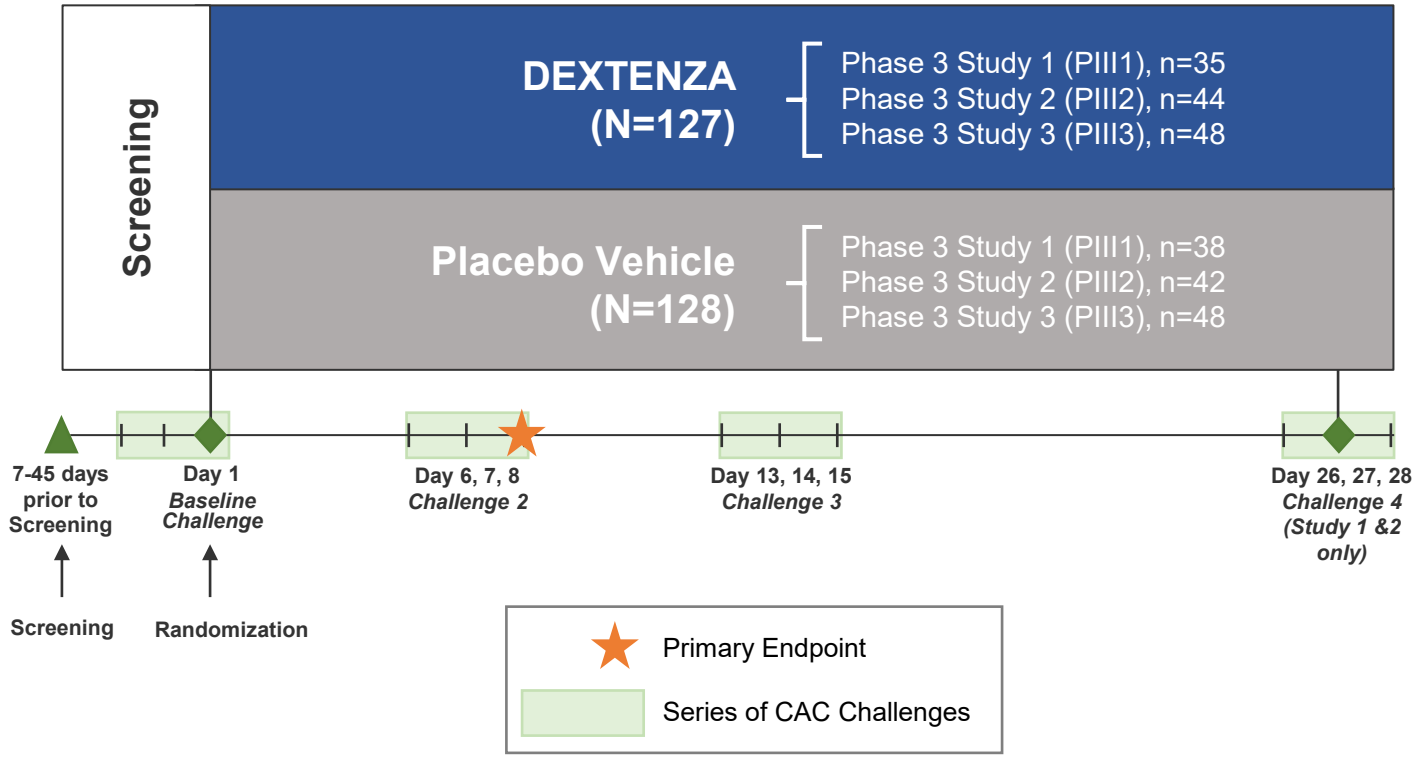
- Randomized, double-masked, vehicle-controlled, multicenter Phase 3 clinical trials

Key Inclusion Criteria

- History of allergic conjunctivitis
- Positive skin test to seasonal and perennial allergen
- Bilateral CAC reaction

Key Endpoint

- Post-CAC ocular itching on Day 8



Modified CAC Model in the DEXTENZA Phase 3 Trials

Standard CAC Model[1]

A Single Allergen Challenge Following Test Article Administration

Day 1
Drug Product Administration

Early Phase Response → Late Phase Response

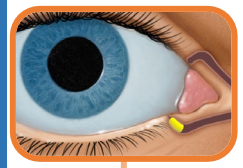
Minute 0
Allergen Challenge

3, 5 and 7 min.
Ocular Itching Assessments

Single Allergen Challenge

Modified CAC Model[2-4]

Multiple Repeated Allergen Challenges Following Test Article Administration



Day 1
DEXTENZA or Placebo Vehicle Insertion

Minute 0	3, 5 and 7 min.	Minute 0	3, 5 and 7 min.	Minute 0	3, 5 and 7 min.	Minute 0	3, 5 and 7 min.
Allergen Challenge	Ocular Itching Assessments	Allergen Challenge	Ocular Itching Assessments	Allergen Challenge	Ocular Itching Assessments	Allergen Challenge	Ocular Itching Assessments
Early Phase Response → Late Phase Response		Early Phase Response → Late Phase Response		Early Phase Response → Late Phase Response		Early Phase Response → Late Phase Response	

Allergen Challenge
Day 6 for Studies 1 and 2

Allergen Challenge
Day 7 for Studies 1, 2 and 3

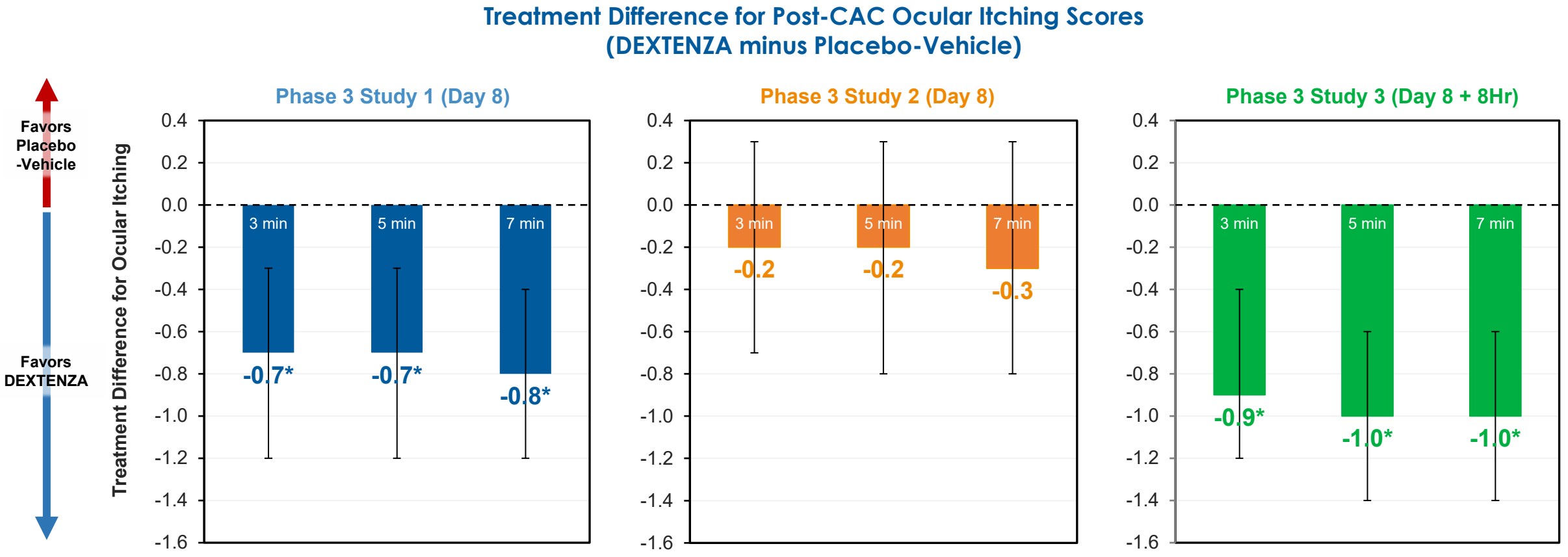
Allergen Challenge
Day 7 + 8 Hr for Studies 1 and 2
Day 8 for Study 3

Allergen Challenge (Primary Endpoint)
Day 8 for Studies 1 and 2
Day 8 + 8Hr for Study 3

References: 1. Abelson M, et al. *Curr Allergy Asthma Rep*. 2003;3(4):363-368. **2.** McLaurin EB, et al. *Am J Ophthalmol*. 2021;229:288-300. **3.** McLaurin E, et al. Evaluating the Safety and Efficacy of DEXTENZA, a Dexamethasone Insert (0.4 mg) for the Treatment of Ocular Itching: Results from Three Clinical Trials. Presented at the American Society of Cataract and Refractive Surgeons Annual Meeting. San Diego, CA. May 6, 2019. **4.** Kenyon KR, et al. Phase 3 Trial Evaluating an Intracanalicular Dexamethasone Insert (0.4 mg) for the Treatment of Patients with Allergic Conjunctivitis. Presented at the American Society of Cataract and Refractive Surgeons Annual Meeting. Boston, MA. May 16, 2020.

Individual Studies: Ocular Itching Primary Endpoint

Ocular itching primary endpoint achieved in two Phase 3 clinical trials.
Statistically significant treatment differences reported in Study 1 and 3.



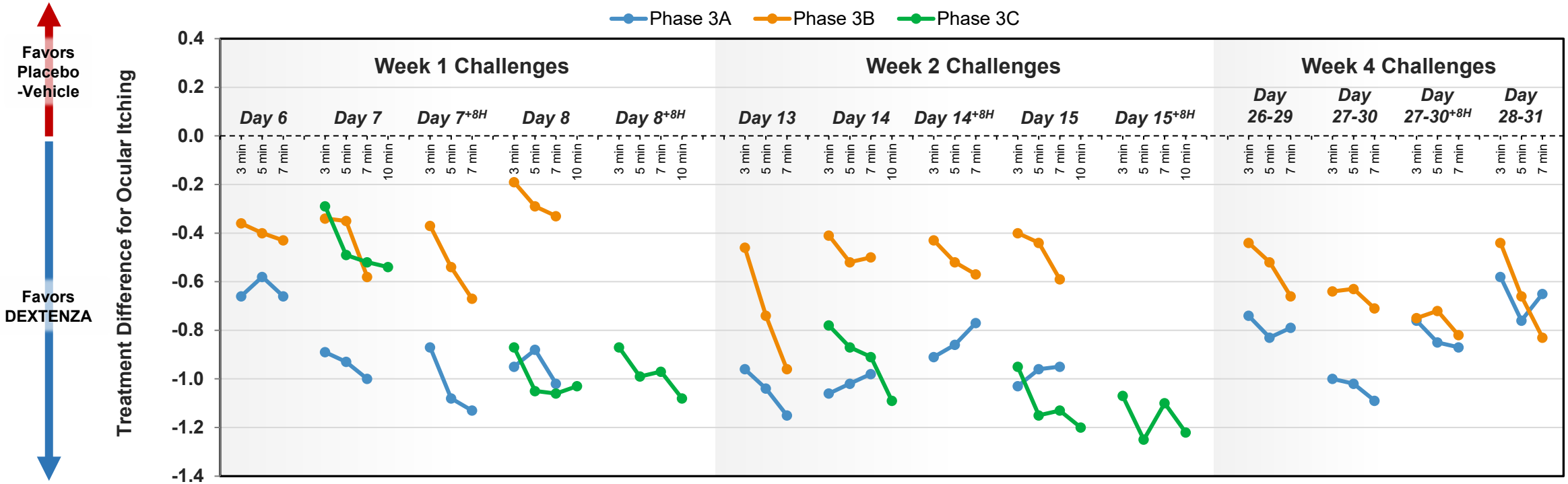
*P<0.05

Reference: DEXTENZA [prescribing information]. Bedford, MA; Ocular Therapeutix, Inc.; 2021.

Individual Studies: Ocular Itching Across All Timepoints

Treatment differences for ocular itching were in favor of DEXTENZA for all 96 timepoints in the three Phase 3 studies

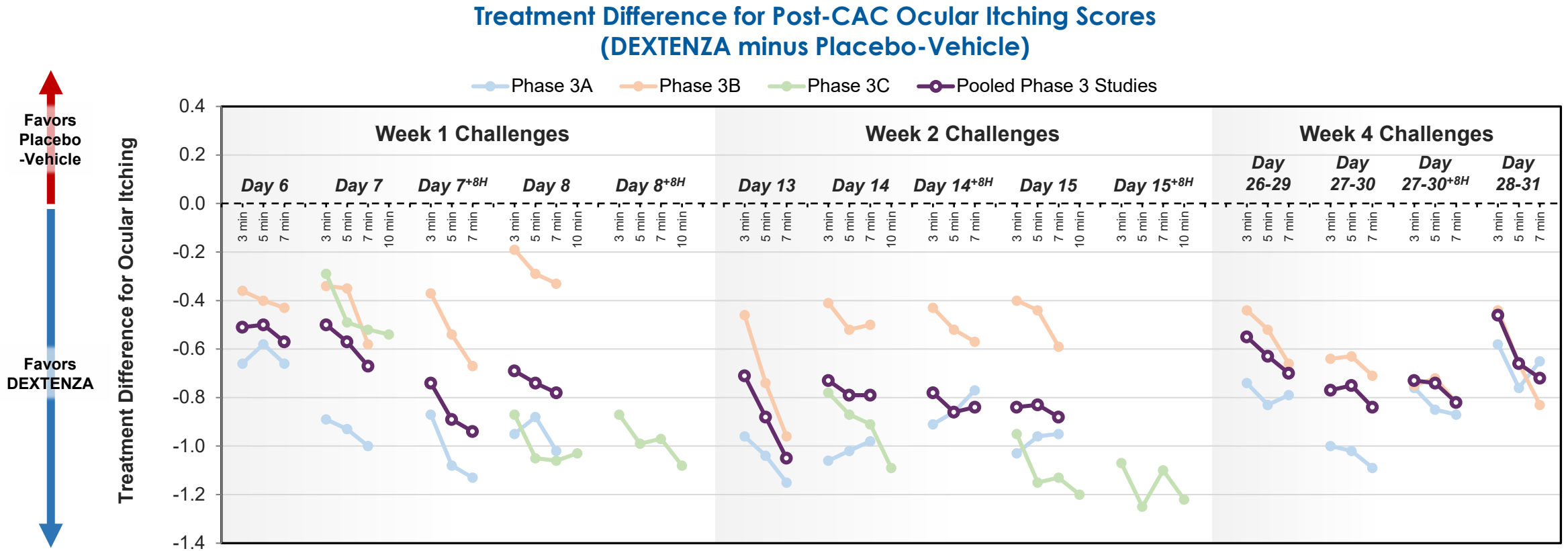
Treatment Difference for Post-CAC Ocular Itching Scores (DEXTENZA minus Placebo-Vehicle)



Data presented are ITT population with observed data

Pooled Studies: Ocular Itching Across 30 Days

DEXTENZA demonstrated statistically significant ocular itch reduction over vehicle at all study visits in a pooled analysis (P<0.05 for all)



P<0.05 for all pooled Phase 3 studies data points presented
Data presented are ITT population with observed data

DEXTENZA Safety Profile

Adverse Events Summary of One Phase 2 and Three Phase 3 Clinical Trials

Subjects with event, n (%)	DEXTENZA N=154 n (%)	Placebo N=161 n (%)
Ocular AE	19 (12.3)	23 (14.3)
Ocular AEs observed in ≥1% of subjects		
Increased intraocular pressure	5 (3.2)	0
Reduced visual acuity	2 (1.3)	0
Increased lacrimation	2 (1.3)	6 (3.7)
Eye discharge	2 (1.3)	4 (2.5)
Treatment-related ocular AE	13 (8.4)	16 (9.9)
Ocular SAE	0	0
AEs leading to study withdrawal	2 (1.3)*	1 (0.6)

*one subject in the Phase 2 study withdrew due to an AE (IOP increased) which resolved. One subject in third Phase 3 study withdrew due to an AE (eye irritation) which resolved

Safety analysis included subjects from one Phase 2 and three Phase 3 clinical trials similar in design

Across four clinical trials:

- **No severe AEs reported**; all AEs were mild or moderate in severity
- **No serious ocular AEs observed**
- **No dacryocanaliculitis in the DEXTENZA group** reported
- Lower proportion of DEXTENZA-treated subjects reported AEs and ocular AEs compared to those in the placebo group

Conclusions

- Current study represents a **post-hoc pooled analysis** of 255 allergic conjunctivitis subjects from three randomized, vehicle-controlled Phase 3 clinical trials
- Across the three individual studies, a numerical ocular itch reduction in favor of DEXTENZA was observed for all 96 time points
- For pooled data, **DEXTENZA had a durable and sustained effect for 30 days as demonstrated by statistically significant ocular itch reduction over vehicle** ($P<0.05$)
- Analysis of the safety population from four clinical trials showed all AEs were mild or moderate
  - Most common AEs (≥1%) were increased IOP, reduced visual acuity, increased lacrimation and eye discharge