

# Retreatment with Barzolvolimab Leads to Rapid Improvement in Urticaria Control After Symptom Recurrence in Chronic Inducible Urticaria



M. Metz,<sup>1,2</sup> A.M. Giménez-Arnau,<sup>3</sup> N. Hussen,<sup>4</sup> J. Staikuniene-Kozonis,<sup>5</sup> T. Slomskis,<sup>6</sup> J. Peter,<sup>7</sup> B. Bloom,<sup>8</sup> U. Chaudhry,<sup>8</sup> P. Golden,<sup>8</sup> L. Duan,<sup>8</sup> H. Lu,<sup>8</sup> A. Lokku,<sup>8</sup> D. Maurer,<sup>8</sup> J.A. Bernstein<sup>9</sup>

<sup>1</sup>Institute of Allergology, Charité-Universitätsmedizin Berlin, corporate member of Freie Universitäts Berlin and Humboldt-Universität zu Berlin, Berlin, Germany; <sup>2</sup>Fraunhofer Institute for Translational Medicine and Pharmacology ITMP, Immunology and Allergology, Berlin, Germany; <sup>3</sup>Hospital del Mar. Universitat Pompeu Fabra, Barcelona, Spain; <sup>4</sup>WorthWhile Clinical Trials, Gauteng, South Africa; <sup>5</sup>CDB Clinic, Kaunas, Lithuania; <sup>6</sup>Center of Allergy Diagnosis and Treatment, Vilnius, Lithuania; <sup>7</sup>The University of Cape Town, Cape Town, South Africa; <sup>8</sup>CellDex Therapeutics, Hampton, New Jersey, USA; <sup>9</sup>University of Cincinnati College of Medicine and Bernstein Allergy Group/Clinical Research Center, Cincinnati, Ohio, USA

## INTRODUCTION

- Chronic inducible urticaria (CIndU) is a mast cell-driven disease characterized by itch and wheals, triggered by cold in cold urticaria (ColdU), or friction on the skin in symptomatic dermographism (SD), which significantly impairs patients' quality of life and activities of daily living
- Barzolvolimab, an anti-KIT monoclonal antibody, has demonstrated clinically meaningful improvement in itch and urticarial lesions driven by depletion of skin mast cells in chronic urticarias<sup>1</sup>
- In a Phase 2 study (NCT05405660), barzolvolimab significantly improved complete response rates (negative provocation tests) with a favorable safety profile in patients with ColdU and SD<sup>2</sup>
  - Up to 66% (vs 16% placebo (PBO)) of patients with ColdU and 49% (vs 10% PBO) of patients with SD treated with barzolvolimab achieved a complete response (negative provocation) at Week 20
  - Up to 69% (vs 40% PBO) of patients with ColdU and 68% (vs 21% PBO) of patients with SD treated with barzolvolimab achieved well controlled disease as measured by the urticaria control test (UCT) at Week 20
- Patients with disease recurrence (UCT  $\leq$  12 and positive provocation test) during the follow up period were eligible to enter an open label extension (OLE)

## ASSESSMENTS

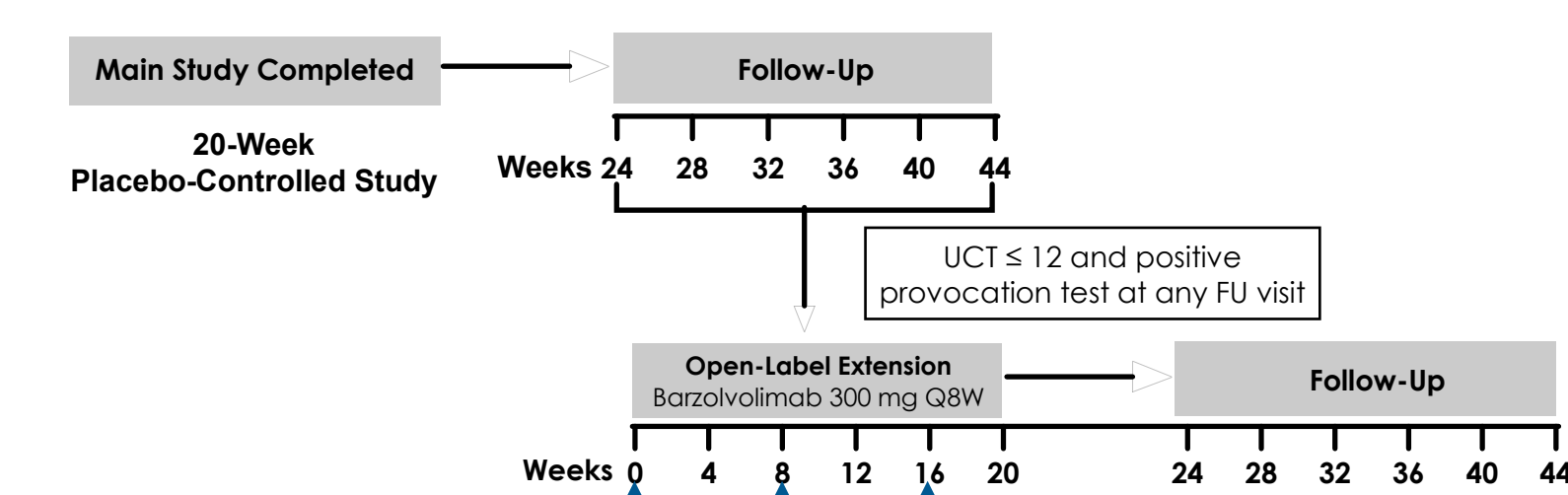
- ColdU TempTest<sup>®</sup>**
- Threshold temperature at which wheals are triggered, assessed at the 10-minute mark
  - Complete Response (CR): negative test at 4°C
  - Partial Response (PR):  $\geq$  4°C improvement in pts who did not have CR
- SD FricTest<sup>®</sup>**
- Threshold pin number (out of 4) at which wheals are triggered, assessed at the 10-minute mark
  - Complete Response (CR): 0 pins
  - Partial Response (PR):  $\geq$  2 pin improvement in pts who did not have CR

## Urticaria Control Test

- The UCT is comprised of 4 dimensions including physical symptoms, quality of life, treatment and overall disease control, with each dimension rated on a scale of 0-4 and a total score of 0-16
- Well controlled disease (UCT $\geq$ 12)<sup>1</sup>; Complete disease control (UCT = 16)

1. Corrected well controlled disease definition to reflect UCT $\geq$ 12

## OPEN-LABEL EXTENSION DESIGN



- Patients received 150 mg Q4W, 300 mg Q8W barzolvolimab, or placebo for 20 weeks during the main study
- Patients with disease recurrence during the main study follow-up period qualified for the OLE
- 121 patients entered the OLE (61 patients with ColdU and 60 patients SD) and 116 patients completed treatment in the OLE
- Patients treated with placebo in main study entered OLE faster than patients on barzolvolimab (median time of 56 days versus 105 days from last dose in main study)

## METHODS

- Observed data are used for analysis
- Barzolvolimab re-treatment includes all patients enrolled in the OLE who had previously received barzolvolimab in the main study
- The lower limit of the TempTest<sup>®</sup> is 4°C and is represented as blue shading in relevant graphs

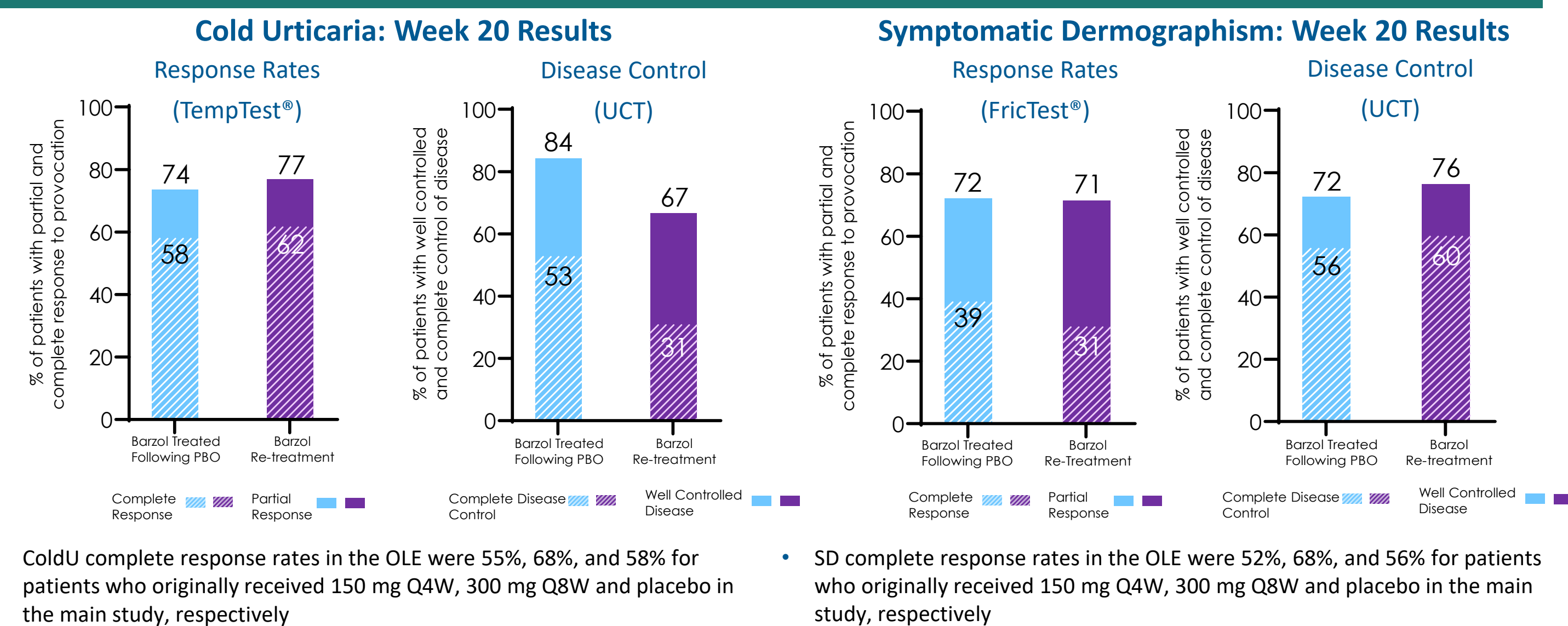
## DEMOGRAPHICS AND BASELINE CHARACTERISTICS

- Generally well-balanced across treatment groups
- Baseline characteristics for patients who entered the OLE were similar to the population in the main study

	Cold Urticaria		Symptomatic Dermographism	
	Barzolvolimab Re-treatment (N = 40)	Barzolvolimab Treatment Following PBO (N = 21)	Barzolvolimab Re-treatment (N = 42)	Barzolvolimab Treatment Following PBO (N = 18)
Age (years)	42.2 (14.4)	44.5 (14.8)	43.5 (15.7)	41.7 (12.8)
Gender, Female, n (%)	31 (77.5)	12 (57.1)	27 (64.3)	12 (66.7)
Race, White, n (%)	38 (95.0)	20 (95.2)	36 (85.7)	16 (88.9)
Weight (kg)	83.6 (21.9)	79.9 (19.1)	83.0 (18.4)	79.0 (17.5)
CINDU Duration, yr	10.4 (12.9)	9.4 (9.6)	6.37 (10.2)	4.07 (5.8)
Prior angioedema, n (%)	14 (35.0)	7 (33.3)	9 (21.4)	4 (22.2)
Prior omalizumab, n (%)	1 (2.5)	0	2 (4.8)	1 (5.6)
OLE Baseline				
CFT (Pins)	NA	NA	3.5 (0.5)	3.6 (0.5)
CTT (°C)	20.4 (10.5)	21.5 (11.0)	NA	NA
UCT	1.9 (2.5)	3.0 (3.4)	2.5 (2.7)	2.1 (2.7)

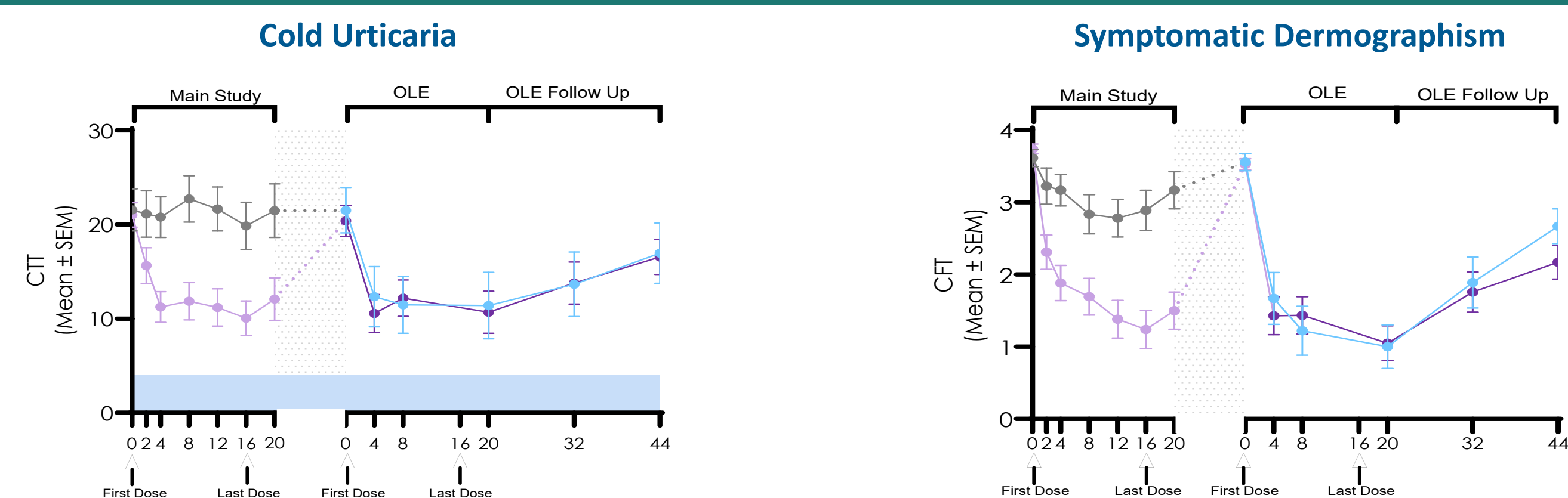
- Data shown are mean (SD) unless otherwise specified

## High rates of complete and partial responses and well controlled disease upon re-treatment



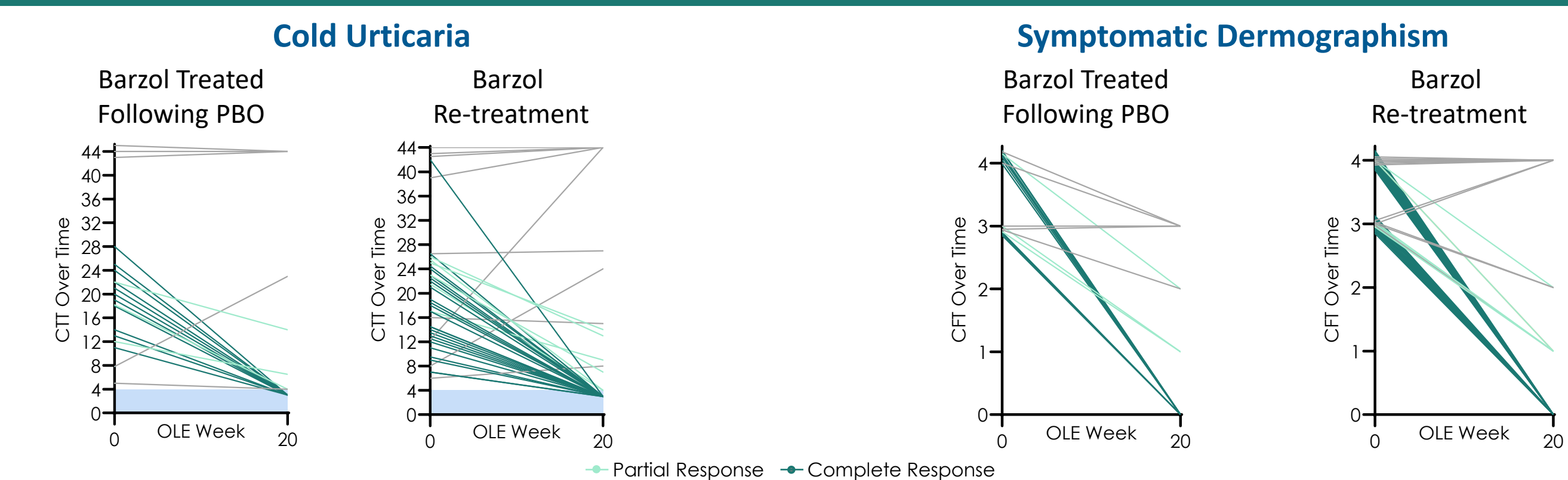
- ColdU complete response rates in the OLE were 55%, 68%, and 58% for patients who originally received 150 mg Q4W, 300 mg Q8W and placebo in the main study, respectively
- SD complete response rates in the OLE were 52%, 68%, and 56% for patients who originally received 150 mg Q4W, 300 mg Q8W and placebo in the main study, respectively

## Rapid reduction in critical temperature and friction thresholds upon re-treatment

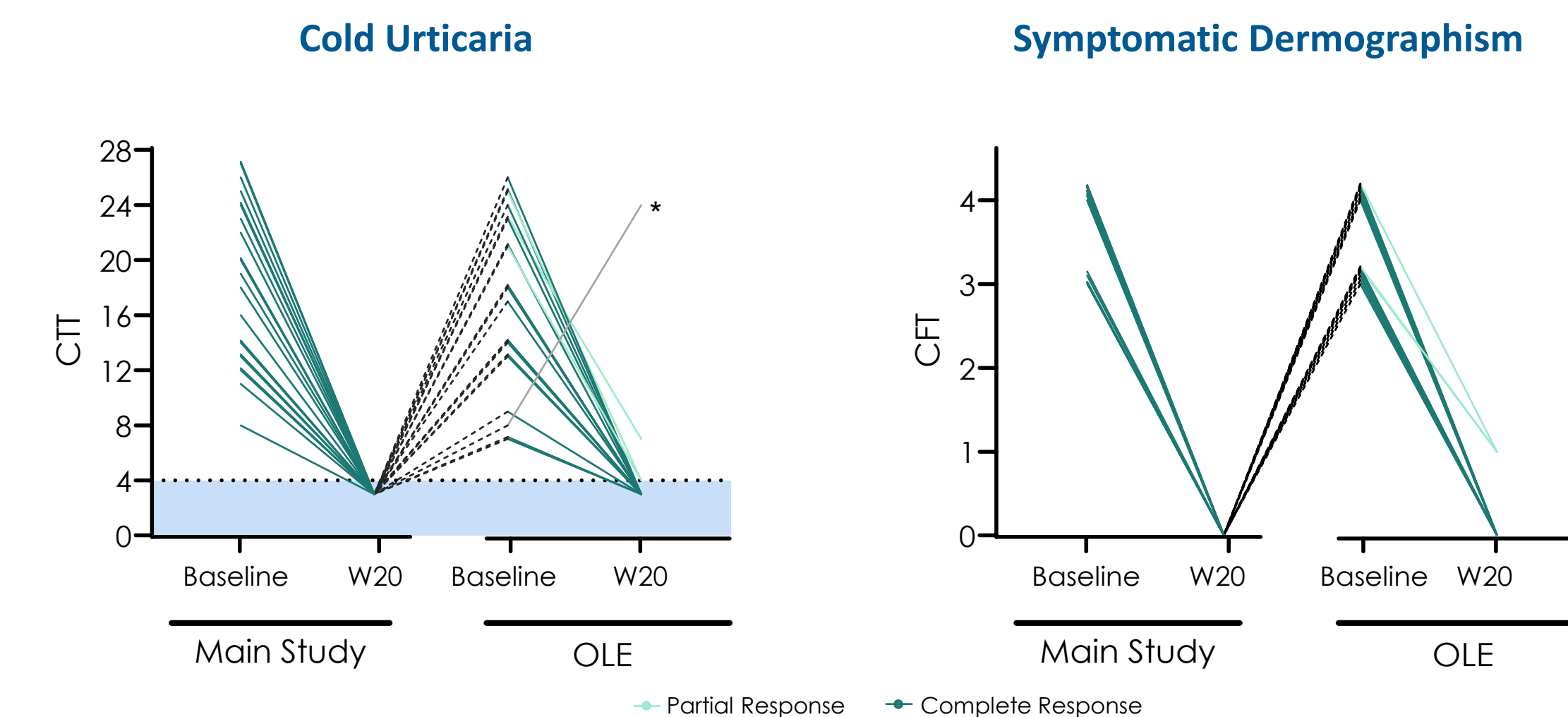


- Main study results include only patients who enrolled in the OLE

## Complete response is achieved by most patients with ColdU and SD at Week 20



## Barzolvolimab re-treatment leads to complete response in patients who achieved complete response in main study



- Among patients who achieved a complete response in main study (n = 22), 82% of patients with ColdU achieved a complete response again and 95% achieved complete or partial response at Week 20
- Among patients who achieved a complete response in main study (n = 21), 86% of patients with SD achieved a complete response again and 100% achieved either a complete or partial response at Week 20

\* Despite having a high TempTest result at Week 20, this patient had evidence of clinical improvement, as measured by a UCT score = 16 and DLQI = 0 at Week 20

## SAFETY

- Barzolvolimab was well tolerated
- Most adverse events were mild. Events reported by >10% of patients in any treatment group during the OLE were hair color changes (16%), skin hypopigmentation (13%) and nasopharyngitis (13%), consistent with prior studies
- Resolution of hair color changes and skin hypopigmentation observed following discontinuation of treatment

## CONCLUSIONS

- With barzolvolimab re-treatment, 62% of patients with ColdU and 60% of patients with SD had a complete response at Week 20
- Barzolvolimab re-treatment achieves similar profound efficacy to first exposure in patients with CIndU
  - Marked and rapid improvement in provocation thresholds
  - Barzolvolimab re-treatment resulted in clinically meaningful improvements in urticaria control, achieving a high rate of well controlled disease: up to 68% of patients with ColdU and 69% of patients with SD
- Barzolvolimab was well tolerated with a safety profile consistent with prior studies
- The ability to re-treat facilitates a real-world paradigm in which treatment for CIndU may be intermittent
- A Phase 3 clinical study in ColdU and SD is ongoing (NCT07266402)

## References

1. Terhorst-Malawi D, et al. Allergy. 2023 May;78(5):1269-1279. 2. Metz M, et al. ACAAI November 6-10, 2025; Orlando, FL.