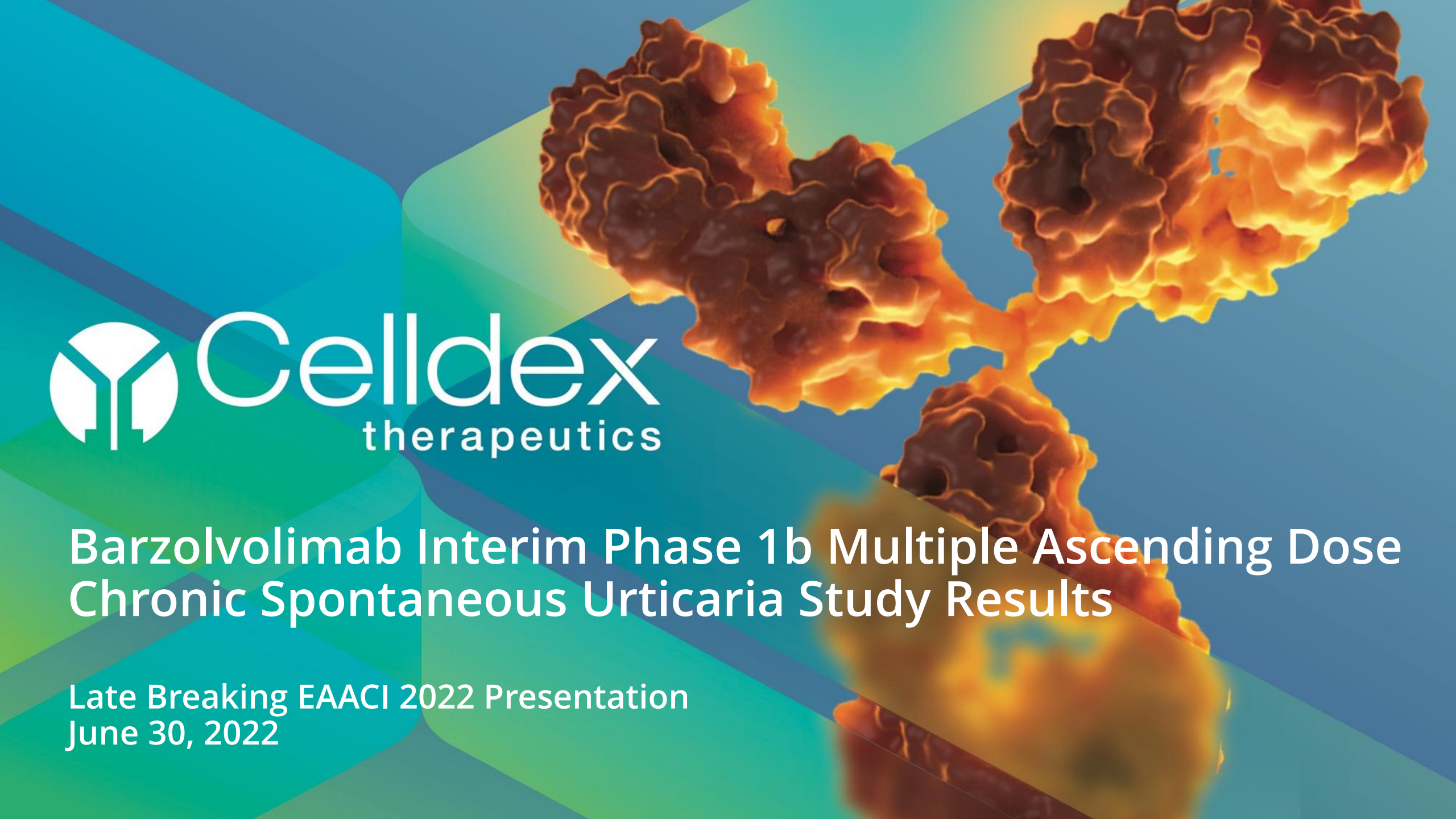


Celldex therapeutics

Barzolvolimab Interim Phase 1b Multiple Ascending Dose Chronic Spontaneous Urticaria Study Results

Late Breaking EAACI 2022 Presentation
June 30, 2022

Safe Harbor Statement

This communication contains "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical fact are statements that could be forward-looking statements. You can identify these forward-looking statements through our use of words such as “may,” “will,” “can,” “anticipate,” “assume,” “should,” “indicate,” “would,” “believe,” “contemplate,” “expect,” “seek,” “estimate,” “continue,” “plan,” “point to,” “project,” “predict,” “could,” “intend,” “target,” “potential” and other similar words and expressions of the future. These forward-looking statements are subject to risks and uncertainties that may cause actual future experience and results to differ materially from those discussed in these forward-looking statements. Important factors that might cause such a difference include, but are not limited to, the timing, cost and uncertainty of obtaining regulatory approvals for product candidates; our ability to develop and commercialize products before competitors that are superior to the alternatives developed by such competitors; the validity of our patents and our ability to avoid intellectual property litigation, which can be costly and divert management time and attention; and the other factors listed under “Risk Factors” in our filings with the SEC, including Forms 10-K, 10-Q and 8-K. Celldex does not undertake any obligation to release publicly any revisions to such forward-looking statement to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

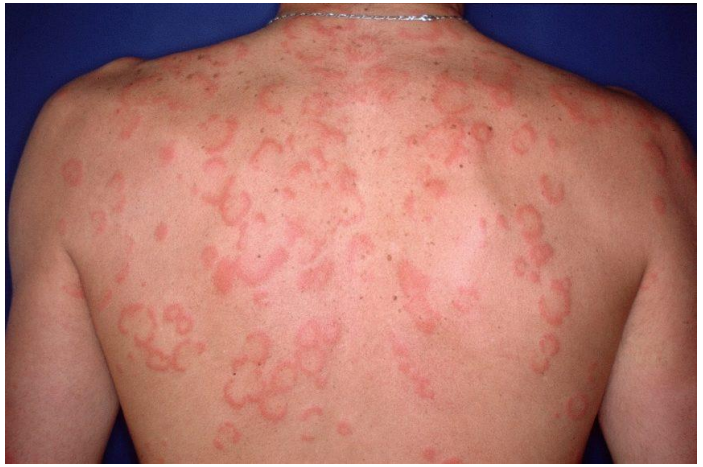
Interim Phase 1b Multiple Ascending Dose Study of Barzolvolimab in Patients with Chronic Spontaneous Urticaria Refractory to Antihistamines

- Rapid, profound and durable responses in a severely symptomatic CSU patient population, including in patients with prior omalizumab experience
- Favorable safety profile; hematologic changes overall across all parameters are consistent with prior single dose studies with no pattern of further decreases with multiple doses
- Outstanding clinical activity across multiple dosing cohorts that exceeds the standard of care
- Unique mechanism of action as a mast cell depleting agent highlights very broad potential across multiple mast cell driven diseases
- Data support continued broad development of barzolvolimab, including ongoing Phase 2 studies in CSU and CIndU

Barzolvolimab Opportunity in Chronic Spontaneous Urticaria Skin Mast Cells are the Primary Target Cell

Characterized by occurrence of urticaria for 6 weeks or longer without identifiable specific triggers

- Mast cell activation drives disease (release of histamines, leukotrienes, chemokines) resulting in episodes of itchy hives, swelling and inflammation of the skin that can go on for years or even decades
- Beyond skin-related symptoms, patients cope with numerous other psychosocial symptoms (e.g., depression, anxiety and insomnia) that impair quality of life
- One of the most frequent dermatologic diseases: prevalence of 0.5-1% of the total population (~1 to 3 M in the US)
- Current therapies provide symptomatic relief only in some patients; antihistamines, leukotriene receptor antagonists and Xolair
- Need for therapies that target the root cause: mast cells



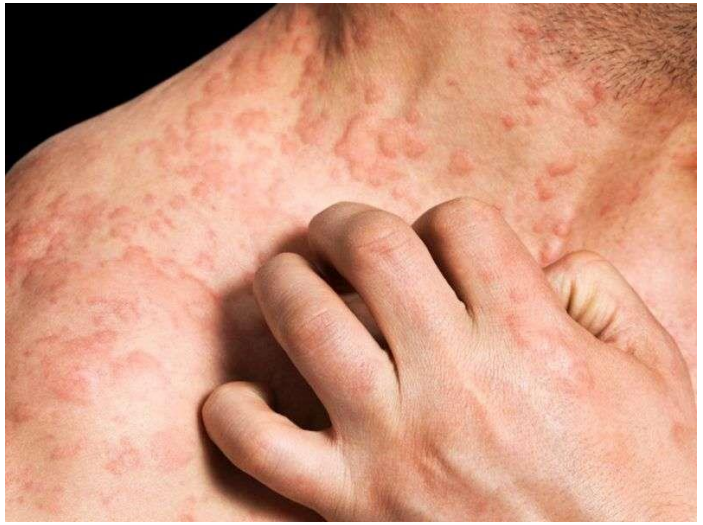
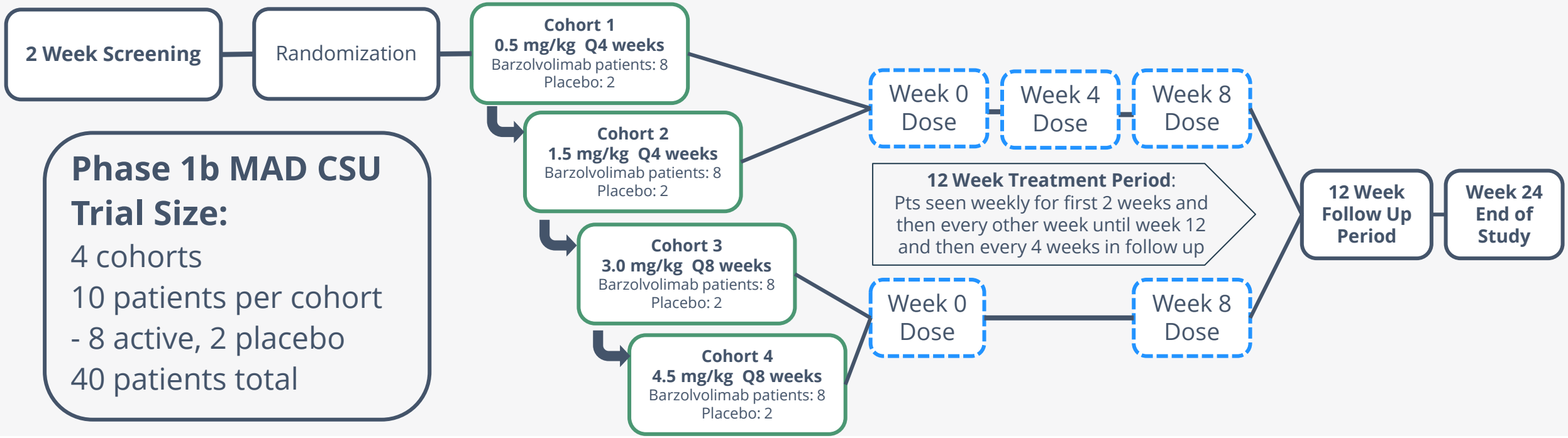


Image Sources:
https://www.pulmonologyadvisor.com/home/topics/allergies/phenotype-may-predict-omalizumab-response-in-chronic-spontaneous-urticaria/
https://medicalxpress.com/news/2016-03-omalizumab-effective-chronic-spontaneous-urticaria.html

Phase 1b Multiple Ascending Dose of Barzolvolimab Trial Design in Patients with CSU Refractory to Antihistamines



Population: Patients with CSU refractory to antihistamines; open to biologic naive & experienced

Design: Randomized, double-blind, placebo-controlled, multiple ascending dose escalation study

Primary Endpoint: Safety and Tolerability
Secondary Endpoints: Activity, PK, PD

Clinical Effect Evaluation: Urticaria Activity Score (UAS7), Hives Severity Score (HSS7), Itch Severity Score (ISS7), Urticaria Control Test (UCT)

As of the data cut-off on May 23, 2022:

34 patients with CSU were enrolled and treated (26 barzolvolimab and 8 placebo)

0.5 mg/kg and 1.5 mg/kg cohorts complete; 7 of 12 patients in the 3.0 mg/kg cohort had completed week 12, enrollment in 4.5 mg/kg cohort ongoing

Adverse events through data cutoff and hematology data through week 12 were included for all dose groups; clinical activity and tryptase data were included through week 12 for 0.5 mg/kg and 1.5 mg/kg, and through week 8 for 3 mg/kg (ongoing; reflecting the administration of only one dose)

Study Demographics and Baseline Characteristics

- Patient population is highly symptomatic (both hives and itching) as indicated by baseline scores with very severe symptoms and long duration of disease, often many years, ~50% with prior omalizumab experience

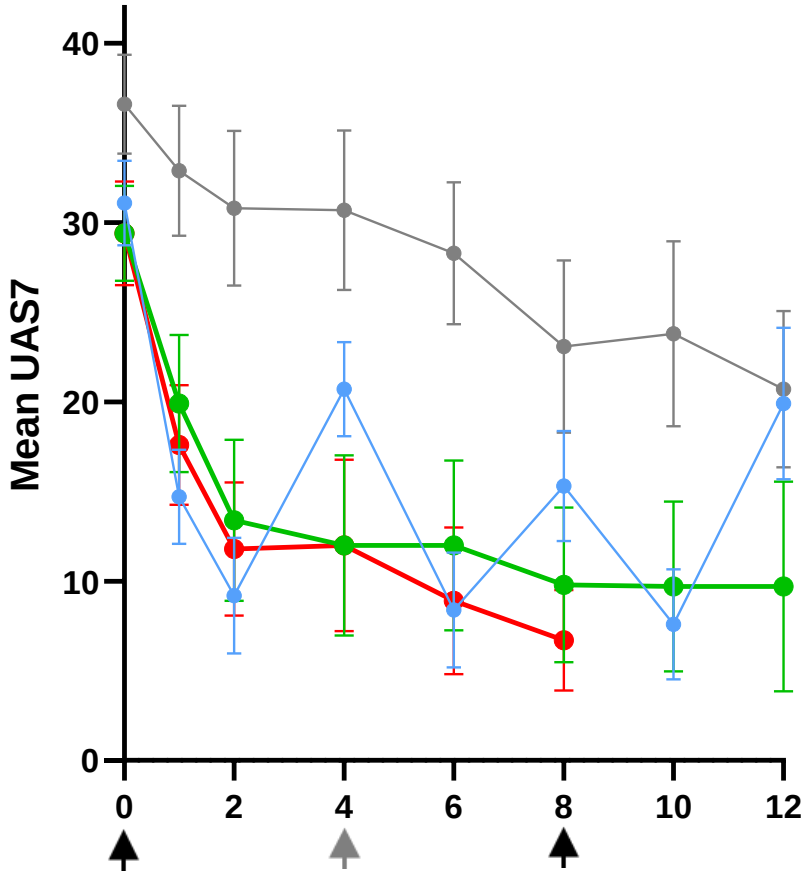
Characteristics	Barzolvolimab 0.5 mg/kg Q4W (N= 9)	Barzolvolimab 1.5 mg/kg Q4W (N= 8)	Barzolvolimab 3.0 mg/kg Q8W (N= 9)	All Barzolvolimab (N= 26)	Pooled Placebo (N= 8)
Age years	43.8 (21.0 - 73.0)	53.3 (29.0 - 75.0)	49.4 (26.0 - 65.0)	48.7 (21.0 - 75.0)	47.4 (18.0 - 70.0)
Gender Female, n (%)	6 (67)	7 (88)	6 (67)	19 (73)	5 (63)
Race White, n (%)	6 (67)	7 (87.5)	9 (100)	22 (85)	6 (75)
African American n (%)	3 (33)	1 (12.5)	0 (0)	4 (15)	2 (25)
BMI kg/m^2	31.1 (26.0 - 36.0)	37.8 (28.6 - 58.9)	29.4 (22.3 - 36.9)	32.6 (22.3 - 58.9)	32.1 (16.4 - 55.2)
CSU Duration years	7.5 (0.6 - 41.1)	17.1 (2.6 - 61.3)	5.3 (0.6 - 21.3)	9.8 (0.6 - 61.3)	6.0 (1.4 - 13.1)
History of Angioedema n (%)	5 (56)	5 (63)	5 (56)	15 (58)	4 (50)
Prior Omalizumab* n (%)	4 (44)	3 (38)	4 (44)	11 (42)	5 (63)
UAS7	31.1 (20.0 - 39.0)	29.4 (20.0 - 40.6)	29.4 (16.3 - 42.0)	30.0 (16.3 - 42.0)	36.6 (19.0 - 42.0)
HSS7	15.4 (8.0 - 21.0)	14.0 (8.0 - 21.0)	14.8 (8.0 - 21.0)	14.7 (8.0 - 21.0)	17.5 (7.0 - 21.0)
ISS7	15.7 (11.0 - 21.0)	15.5 (12.0 - 21.0)	14.6 (1.2 - 21.0)	15.2 (1.2 - 21.0)	19.1 (12.0 - 21.0)
UCT	1.7 (0.0 - 4.0)	2.4 (1.0 - 8.0)	3.1 (0.0 - 7.0)	2.4 (0.0 - 8.0)	3.4 (0.0 - 11.0)
Tryptase ng/mL	5.1 (2.0 - 10.3)	6.4 (2.8 - 15.1)	8.6 (3.3 - 28.8)	5.4 (2.0 - 28.8)	6.1 (3.6 - 7.7)

Mean (range) is presented unless otherwise indicated, *The majority had inadequate response to omalizumab

Rapid, Marked and Durable Improvement in Urticaria Activity

- Outstanding clinical activity with rapid, marked and durable decrease in itch and hive symptoms in a heavily symptomatic, severe patient population including patients with prior omalizumab
- All three doses of barzolvolimab markedly improved urticaria symptoms and disease control

All Patients



Change in UAS7 At Week 12 (0.5, 1.5 mg/kg) and Week 8 (3.0 mg/kg)

UAS7 Change	0.5 mg/kg Q4W Week 12	1.5 mg/kg Q4W Week 12	3.0 mg/kg Q8W Week 8 (ongoing)	Placebo Week 12 / 8
Mean Score Change	-11.1	-18.1	-22.7	-14.3 / -12.4
Mean % Change	-39.7%	-66.6%	-75.1%	-35.9% / -31.1%

0.5 mg/kg Q4W
1.5 mg/kg Q4W
3.0 mg/kg Q8W
Placebo

Dosing for all treatment groups

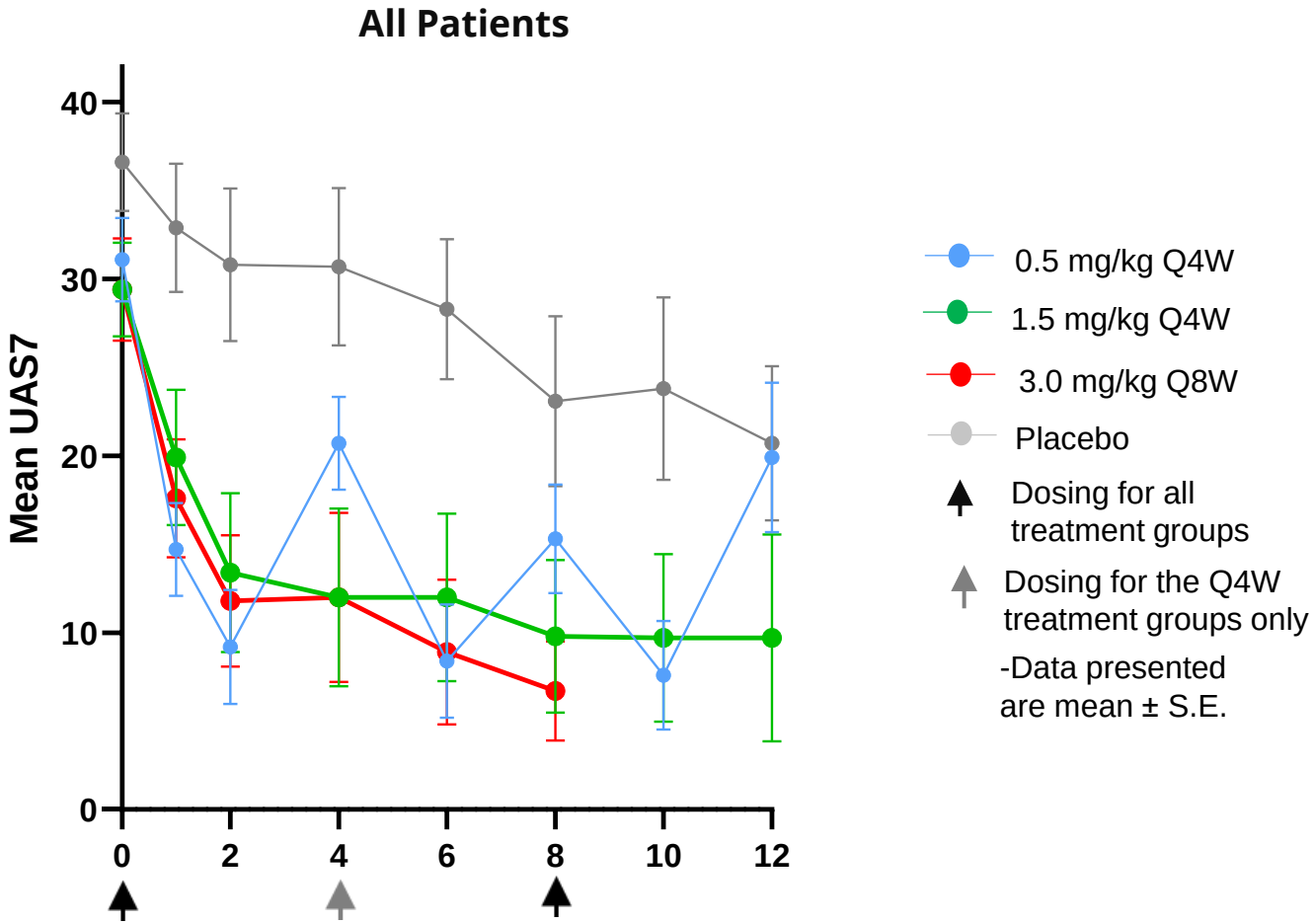
Dosing for the Q4W treatment groups only

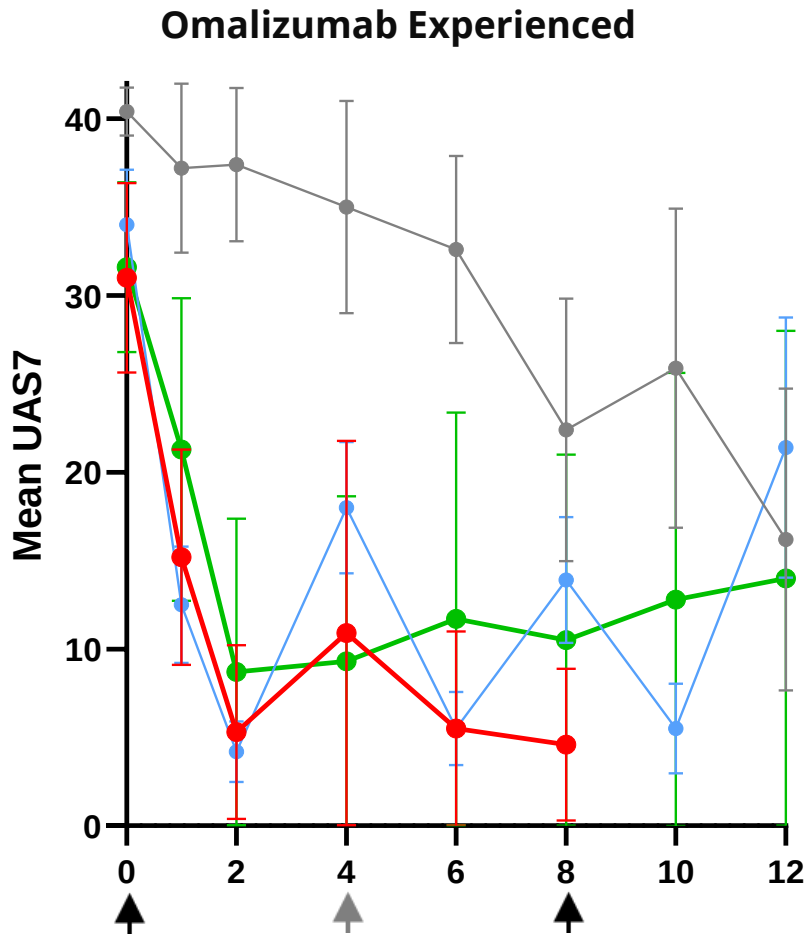
-Data presented are mean ± S.E.

UAS7 score is calculated as the sum over 7 days of the daily intensity of itch (ISS7 itch severity score) & the number of hives (HSS7 hives severity score). Total range of 0–42 with higher scores denoting greater disease activity.

Patients With Prior Omalizumab Therapy had Similar Symptom Improvement as All Patients

- Rapid marked, and durable symptom improvement
- Provides evidence of clear roles of mast cells as drivers in all forms of CSU and supports unique mechanism of action of barzolvolimab as a mast cell depleting agent

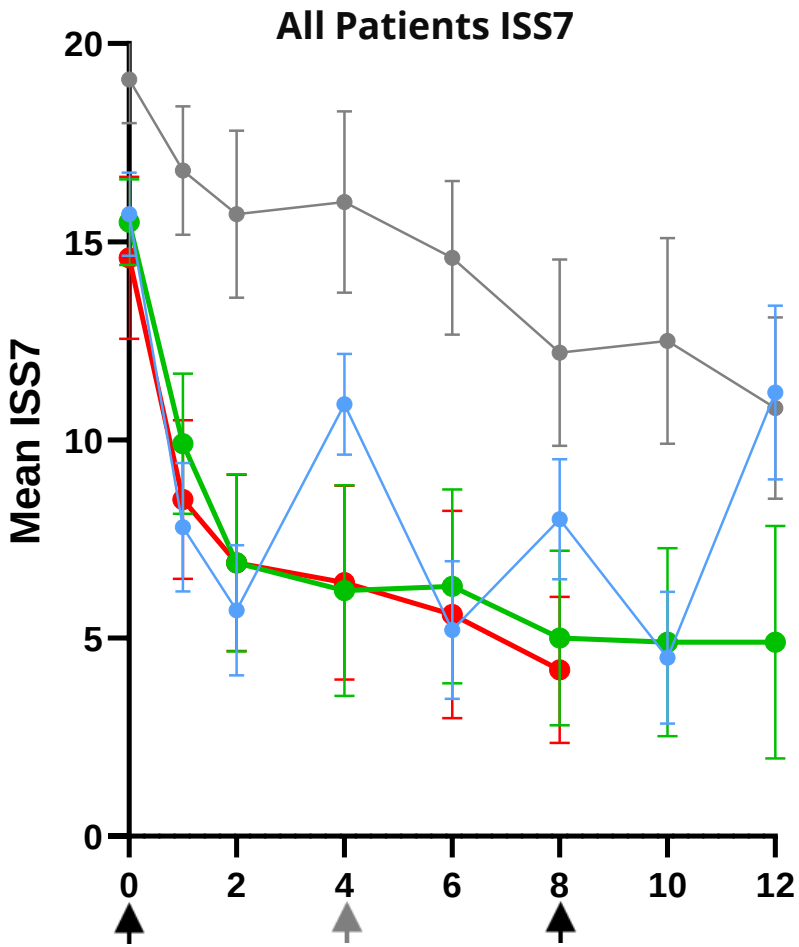


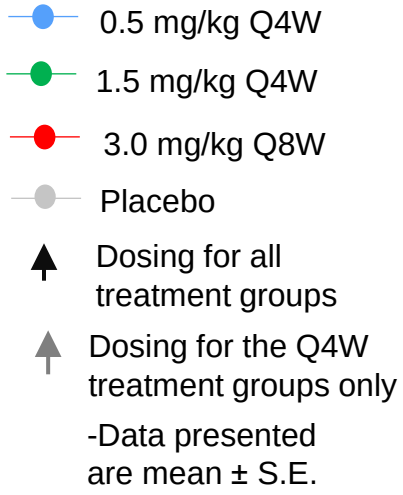


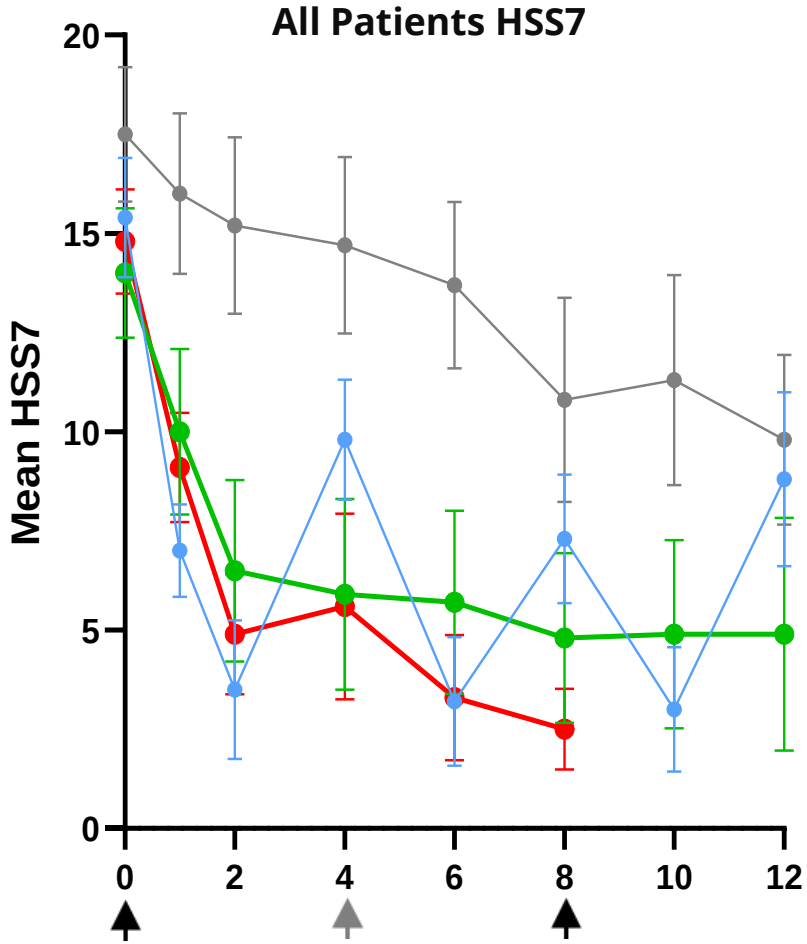
UAS7 score is calculated as the sum over 7 days of the daily intensity of itch (ISS7 itch severity score) & the number of hives (HSS7 hives severity score). Total range of 0–42 with higher scores denoting greater disease activity.

Rapid and Durable Improvement in Both Itch and Hives

- Dramatic improvements in itch (ISS7) and hives (HSS7) resolution
- Rapid onset of responses after initial dosing and sustained durability; onset as early as 1 week after the first dose



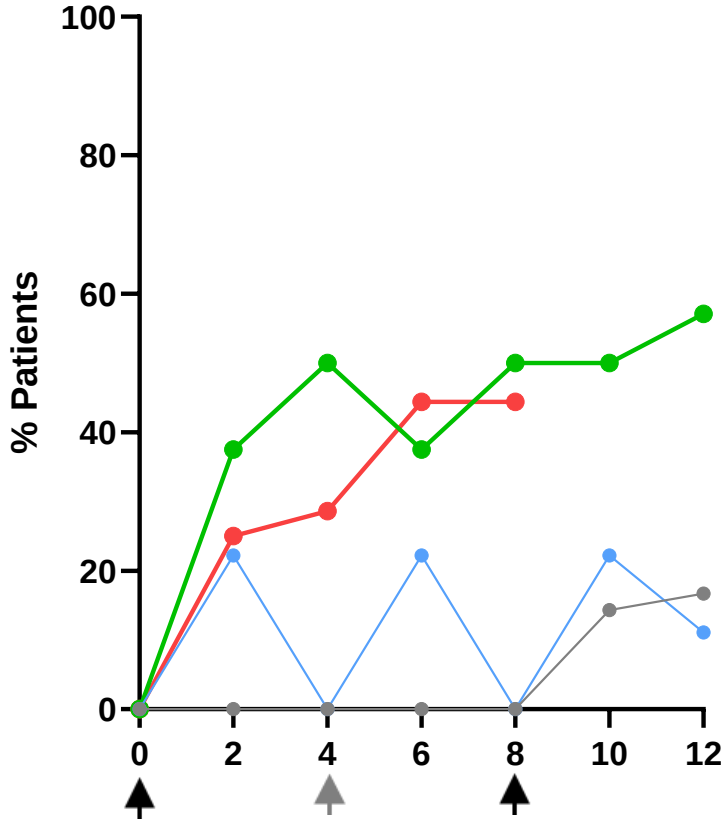




Magnitude of Improvement Exceeds Standard of Care

- Complete response (UAS7=0) of 57.1% in 1.5 mg/kg group at week 12 and 44.4% at 8 weeks (reflects one dose; ongoing) in 3 mg/kg dose group; a key therapeutic goal
- Current standard of care, omalizumab, has demonstrated 36% complete response per US label
- As predicted, the lowest dose of 0.5 mg/kg resulted in suboptimal clinical activity compared to higher doses

All Patients with UAS7=0 (Complete Response)



% of All Patients with UAS7=0
At Week 12 (0.5, 1.5 mg/kg) and Week 8 (3.0 mg/kg)

0.5 mg/kg Q4W Week 12	1.5 mg/kg Q4W Week 12	3.0 mg/kg Q8W Week 8 (ongoing)	Placebo Week 12 / 8
11.1%	57.1%	44.4%	16.7% / 0%

0.5 mg/kg Q4W
1.5 mg/kg Q4W
3.0 mg/kg Q8W
Placebo

Dosing for all treatment groups

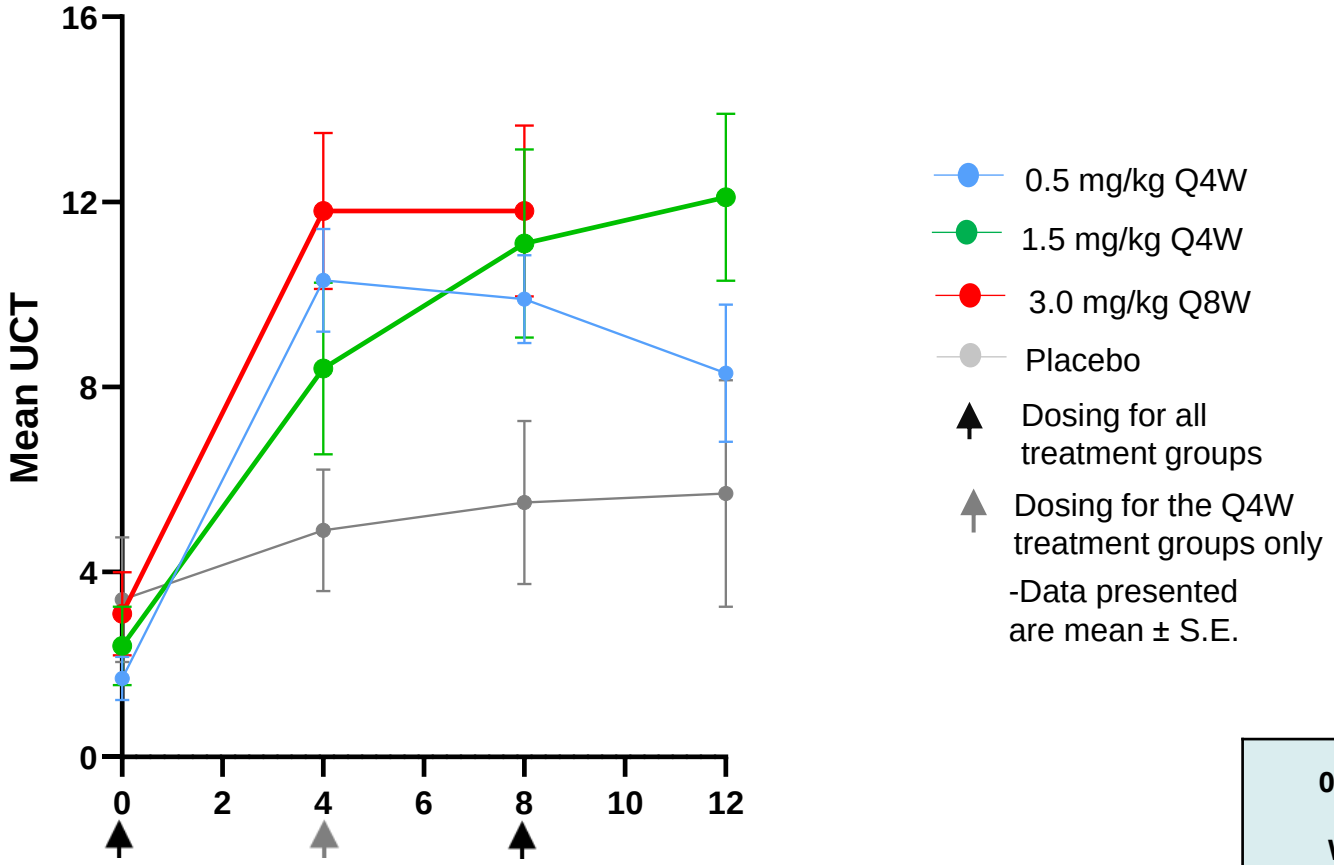
Dosing for the Q4W treatment groups only

-Data presented are mean ± S.E.

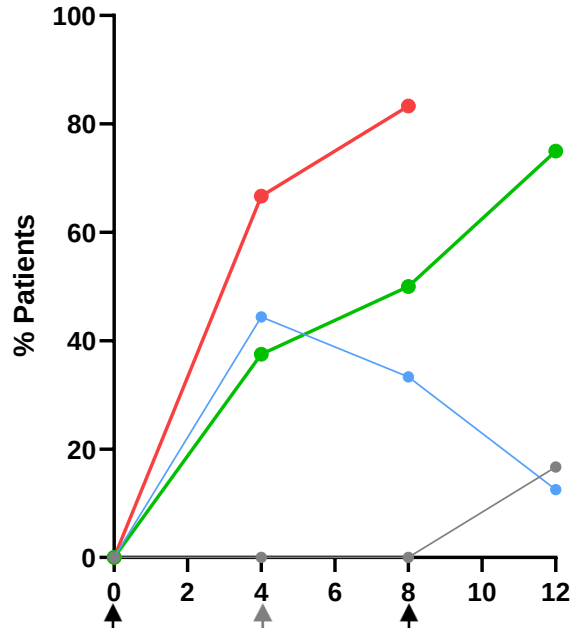
Well-controlled Disease by UCT

- 75% well-controlled disease by UCT in the 1.5 mg/kg group at week 12 and 83.3% in the 3 mg/kg group at week 8 (reflects one dose; ongoing)
- Score improvement in UCT is similar to that seen in the prior Phase 1b CIndU study (~8 points)

All Patients



All Patients with UCT ≥ 12 (Well-controlled)



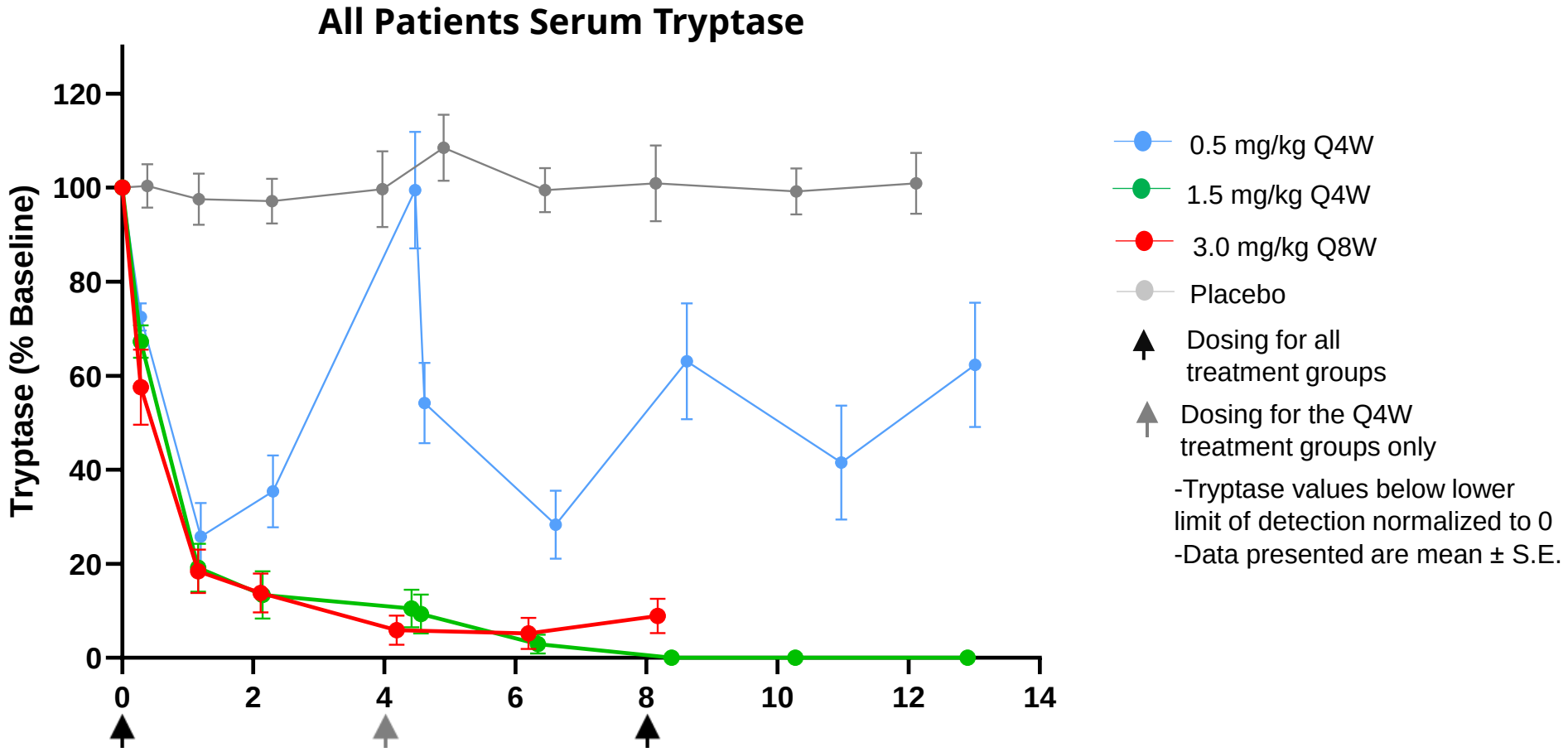
% of All Patients with UCT ≥ 12
At Week 12 (0.5, 1.5 mg/kg) and Week 8 (3.0 mg/kg)

0.5 mg/kg Q4W Week 12	1.5 mg/kg Q4W Week 12	3.0 mg/kg Q8W Week 8 (ongoing)	Placebo Week 12 / 8
12.5%	75.0%	83.3%	16.7% / 0%

UCT has 4 items with 5 answer options (scored with 0-4 points); recall period of 4 weeks. Low points indicate high disease activity and low disease control. The minimum and maximum UCT scores are 0 and 16, with 16 points indicating complete disease control and ≥12 indicating well controlled disease.

Profound, Rapid Decreases in Serum Tryptase

- Tryptase suppression, indicative of mast cell depletion, paralleled symptom improvement, demonstrating the impact of mast cell depletion on CSU disease activity
- Serum tryptase level is a robust pharmacodynamic biomarker for assessing mast cell burden and clinical activity in patients with chronic urticarias and potentially other diseases
- Best clinical responses are associated with complete or near complete suppression of tryptase



Multiple IV Doses of Barzolvolimab Were Well Tolerated

- Most AEs were mild or moderate and resolved while on study, with none leading to discontinuation
- The most common AEs occurring in ≥ 10% barzolvolimab treated patients include urinary tract infections, headache, neutropenia and backpain - UTIs, headache and backpain all reported as not treatment related
- One patient who received 1.5 mg/kg experienced a SAE of salmonella colitis considered unrelated to study treatment

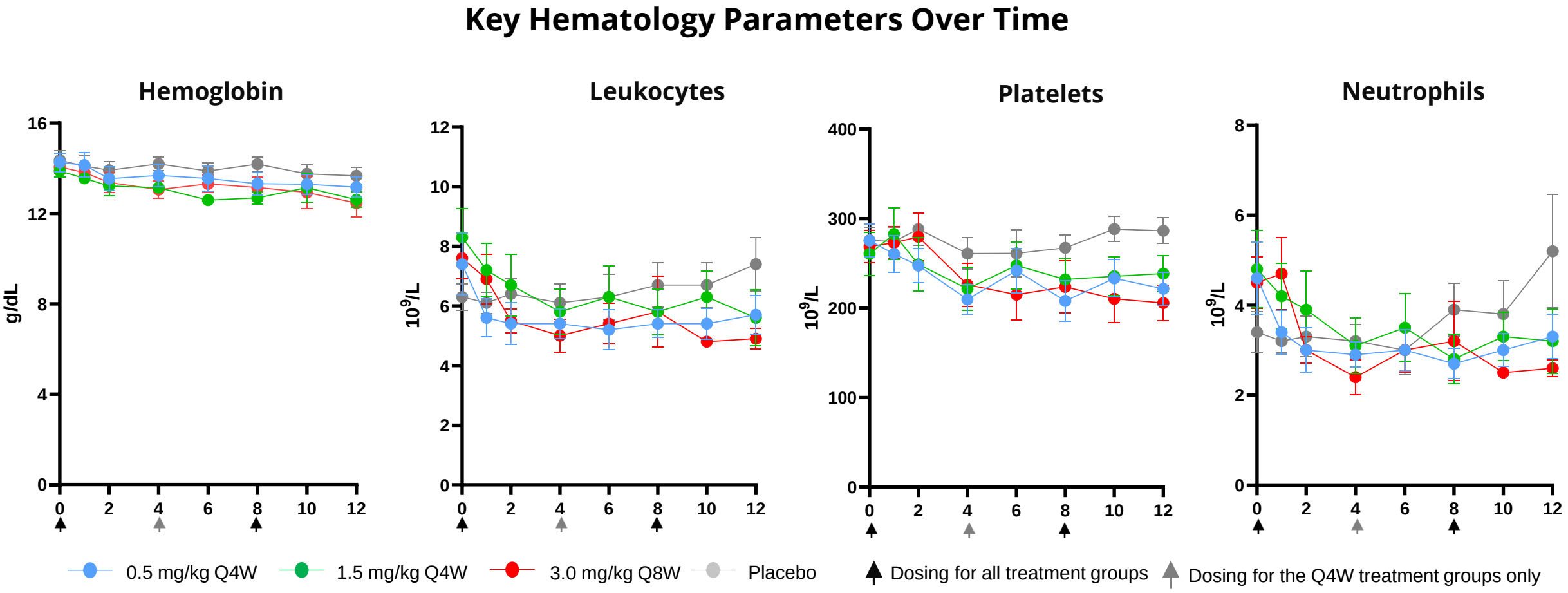
Adverse Events Reported in ≥ 10% Barzolvolimab Treated Patients

Number (%)	Barzolvolimab 0.5 mg/kg Q4W (N= 9)	Barzolvolimab 1.5 mg/kg Q4W (N= 8)	Barzolvolimab 3.0 mg/kg Q8W (N= 9)	All Barzolvolimab (N= 26)	Pooled Placebo (N= 8)
All AEs	8 (89)	7 (88)	6 (67)	21 (81)	6 (75)
Urinary Tract Infection*	1 (11)	2 (25)	2 (22)	5 (19)	1 (13)
Headache	2 (22)	0 (0)	2 (22)	4 (15)	1 (13)
Neutropenia	2 (22)	2 (25)	0 (0)	4 (15)	0 (0)
Back pain	0 (0)	1 (13)	2 (22)	3 (12)	0 (0)

*Includes preferred terms: urinary tract infection, cystitis, and bacteriuria

Key Hematology Parameters Similar to Those Observed in Previously Reported Single Dose Studies

- Changes in hematologic parameters were consistent with observations in single dose studies, with no pattern of further changes with multiple doses and no clinical consequences associated with these lab findings



-Data presented are mean ± S.E.

Leading Medical Expert: Prof. Dr. Marcus Maurer, MD

Professor of Dermatology and Allergy; Head of Dermatological Allergology at the Allergie-Centrum-Charité; Head of the Specialty Clinics for Urticaria, Mastocytosis, MCAS, Pruritus, Autoinflammatory Syndromes and Angioedema and the Dermatological Allergology Lab at Charité – Universitätsmedizin Berlin, Germany

Conducted Phase 1b CIndU and CSU Trials with Celldex

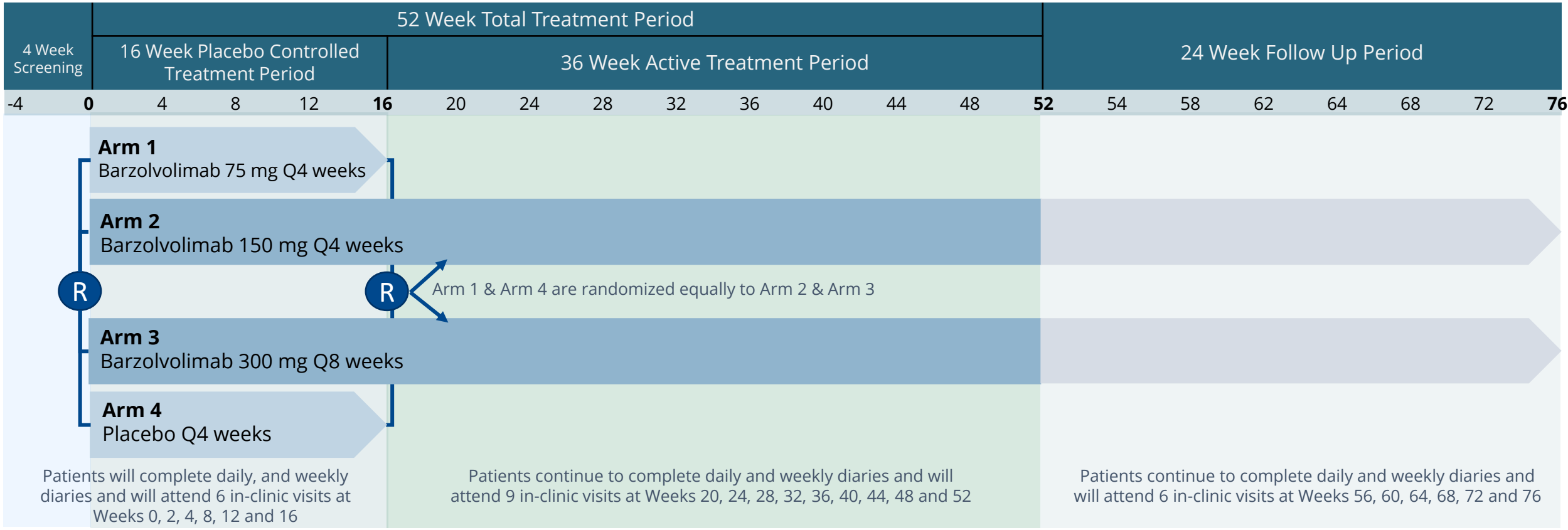
Prof Maurer is a Dermatologist and Allergologist, and he also trained in experimental pathology at the Beth Israel Deaconess Hospital and Harvard Medical School in Boston (1995-1998)

Coordinator of the Global Allergy and Asthma European Networks of urticaria and angioedema centers of reference and excellence, UCARE and ACARE

Areas of clinical interest include angioedema, urticaria, mastocytosis, pruritus, skin infections, and allergic diseases. Research is focused on the biology of mast cells, neuroimmunology, inflammation, innate immunity and tolerance

Has supervised more than 60 clinical trials, Phase 1 through 4. Contributed to more than 600 publications in peer-reviewed journals (>25.000 citations, H Index 79) and 40 books and book chapters

Phase 2 Dose-finding Subcutaneous Barzolvolimab Trial Design
CSU Patients Refractory to Antihistamines



Trial Size: ~168 patients total, 4 arms (42 patients per arm)
75+ sites, 10+ countries

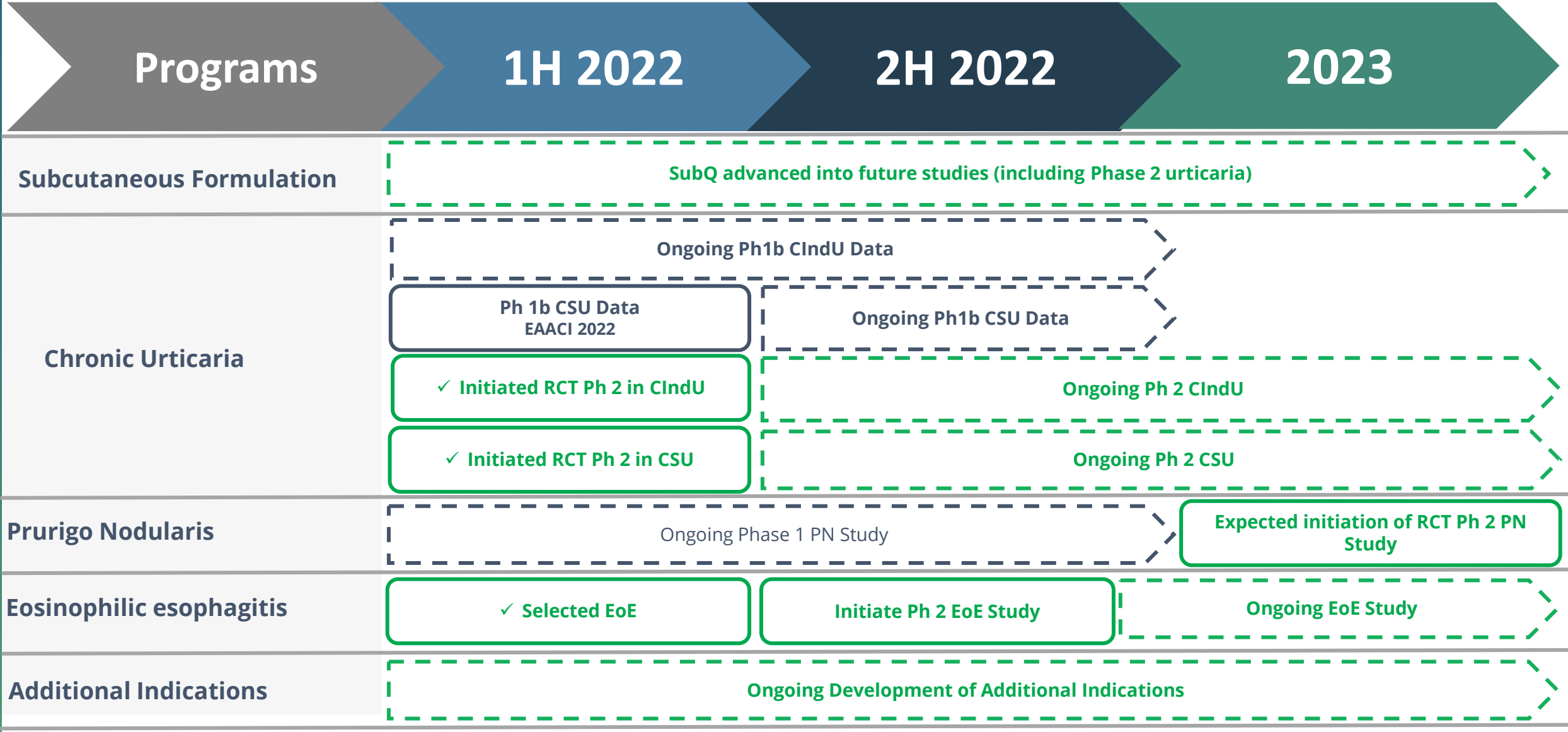
Population: CSU patients refractory to antihistamines; open to biologic naive & experienced patients

Design: Randomized, Double-Blind, Placebo-Controlled, Dose-finding Study

Primary Endpoints:
Mean change from baseline to Week 12 of UAS7 (Urticaria Activity Score)

Secondary Endpoints:
ISS7 (Itch Severity Score)
HSS7 (Hives Severity Score)
AAS7 (Angioedema Activity Score)
Safety

Barzolvolimab Planned Development Timeline



RCT – randomized controlled trial

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Questions