Safety and Efficacy of a Topical Treatment (SM04554) for Androgenetic Alopecia (AGA): Results from a Phase 1 Trial

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Disclosures

- Yusuf Yazici, MD
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- Stacy Smith, MD
  - No relevant disclosures
- Christopher Swearingen, PhD
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- Ismail Simsek, MD
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- Anita DiFrancesco
  - Financial disclosure: Samumed, LLC; salary and equity
- John D. Hood, PhD
  - Financial disclosure: Samumed, LLC; salary and equity

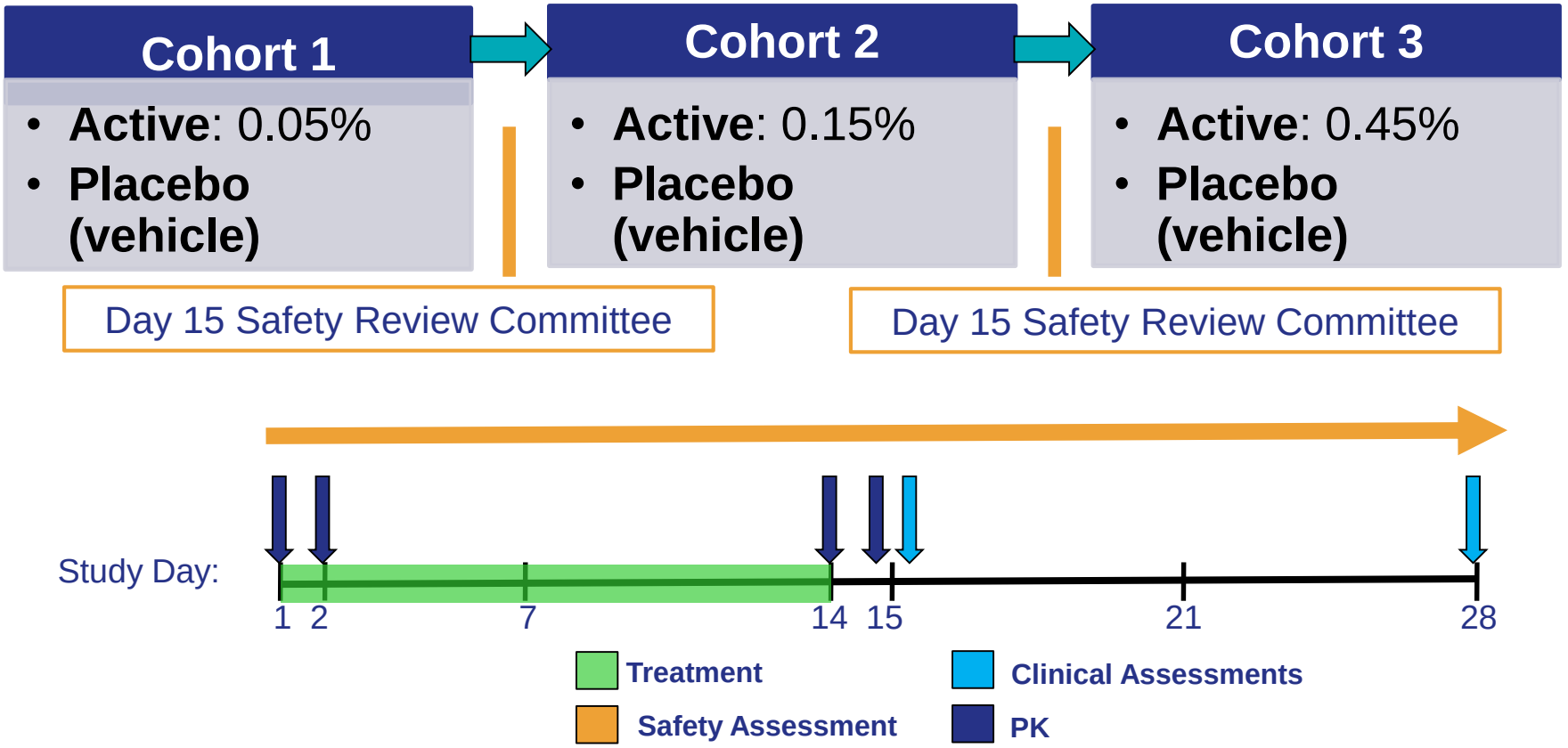
Background and Purpose

- In the U.S., it is estimated that approximately 35 million men are affected by androgenetic alopecia (AGA)
- Only two products have been approved in the U.S. in the past 15 years for the treatment of AGA: (1) minoxidil (Rogaine®, Upjohn Co.) and (2) finasteride (Propecia®, Merck)
- There is a need for alternative treatment options for AGA that have improved efficacy and safety profile
- Samumed conducted a Phase 1 trial to evaluate the safety, tolerability, and efficacy of topical SM04554 solution applied to the scalp of male subjects with AGA

Phase I Protocol Synopsis

TITLE	A Single-Center, Randomized, Double–blind, Placebo-Controlled Study of the Safety, Tolerability and Pharmacokinetics of Various Concentrations of Topical SM04554 Solution in Male Subjects with Androgenetic Alopecia	
POPULATION	Males 18 to 60 years of age, inclusive, with AGA (Norwood-Hamilton Classification score of 4, 5, 6, or 7)	
COHORTS	Topical 0.05%, 0.15%, 0.45% or Vehicle (PEG) N=10 / cohort (8:2 Randomization) Treated 14 Days with Safety Follow up 14 Days Post-Treatment	
SAFETY	• Laboratory Panels • PK • ECG	• Scalp Assessment • Vital Signs • Adverse Events
CLINICAL OUTCOMES (15 & 28 Days)	• Men's Hair Growth Questionnaire (MHGQ)	• Investigator Reported Hair Growth

Study Trial Design



Safety: AEs, Vital signs, Pharmacokinetics, ECGs, Clinical laboratory panels, Scalp assessments

Clinical Assessments: MHGQ, Investigator Reported Hair Growth

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Study Demographics

	0.05%	0.15%	0.45%	Vehicle
N	7	8	8	6
Age at Consent (Years) [Mean (SD)]	48.4 (5.0)	41.5 (4.4)	44.0 (11.1)	44.6 (7.9)
Race: White [N(%)]	7 (100%)	8 (100%)	7 (88%)	5 (83%)
Norwood-Hamilton [N(%)]				
4	4 (57%)	2 (25%)	2 (25%)	2 (33%)
5	3 (43%)	5 (63%)	3 (38%)	2 (33%)
6	0	0	3 (37%)	1 (17%)
7	0	1 (12%)	0	1 (17%)

Phase I Study Safety Summary

- 11 subjects reported 15 AEs
  - 0.05% Cohort - 1 subject reported 1 AE
  - 0.15% Cohort - 4 subjects reported 5 AEs
  - 0.45% Cohort - 2 subjects reported 3 AEs
  - Vehicle Cohort - 4 subjects reported 6 AEs
- No SAEs / DLTs reported
- No increased incidence of AEs as doses escalated

Phase I Safety Summary (continued)

- Adverse event summary
  - SM04554: Eye irritation(2), Back pain(2), Ocular hyperaemia, Phlebitis, Papule, Dry mouth, Joint dislocation
  - Vehicle: Headache(2), Acne, Fatigue, Seasonal allergy, Sunburn
  - No local AEs observed (one case of minimal erythema in vehicle group resolved after three days with no dose adjustment, not classified as an AE)
- Most adverse events were considered by the study investigators to be unrelated to study medication
- One AE of eye irritation (0.45% cohort) was considered related to study medication (per investigator), mild in intensity, and resolved without treatment
- Laboratory parameters, ECGs and vital signs were unremarkable during the study and no clinically significant values or changes from baseline were reported in any of the subjects

Pharmacokinetics

Blood plasma concentrations on Day 15

Cohort	Systemic Exposure	Average AUC	Cmax	Tmax
	N	ng*h/ml (SE)	ng/ml	Hours
0.05%	0	-	-	-
0.15%	3	1.02 (0.57)	0.202	9
0.45%	7	2.14 (0.52)	0.188	12

Calculations were based on subjects with detectable levels
Range of quantitation 0.100ng/ml – 150ng/ml

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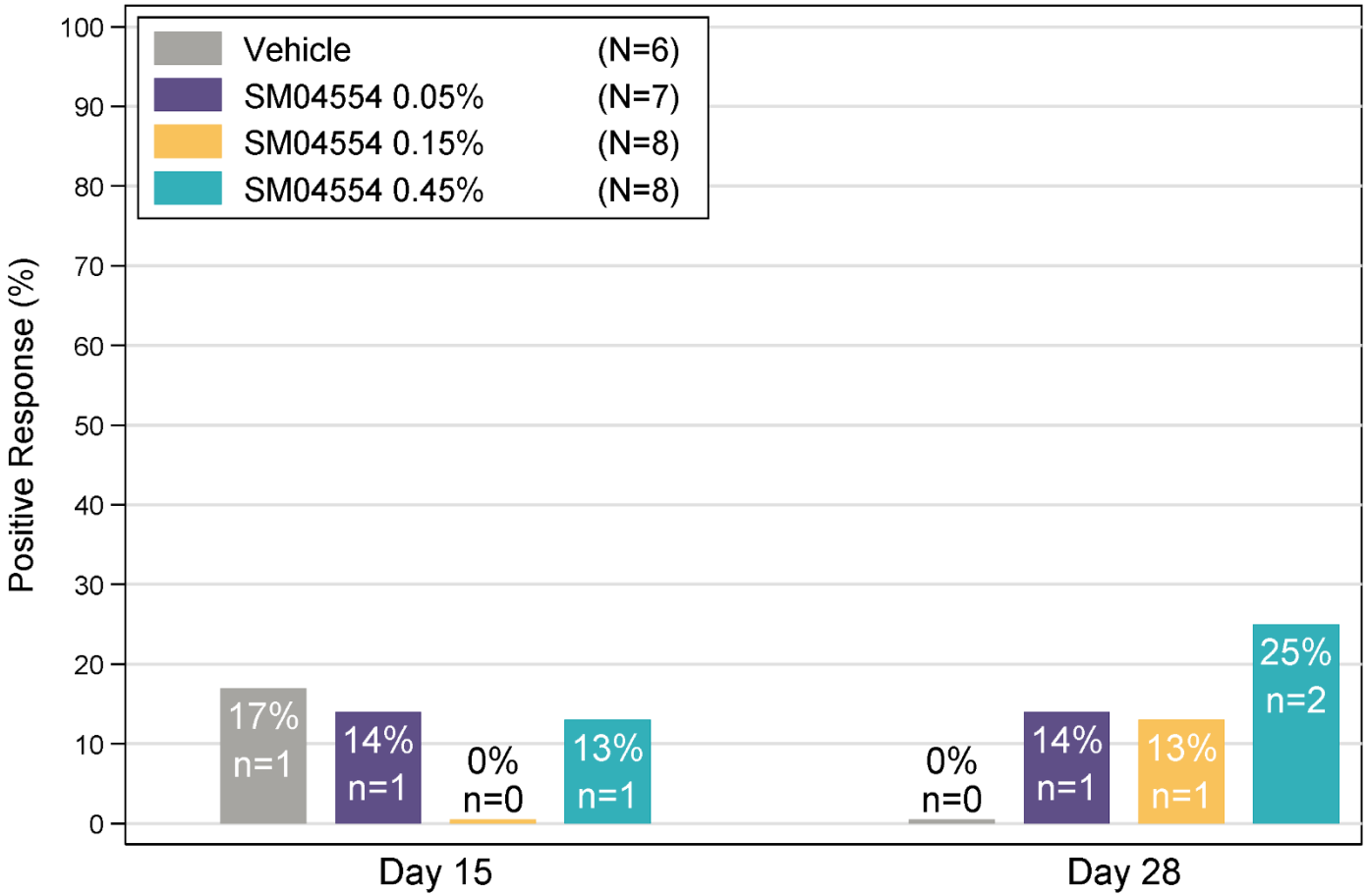
Men's Hair Growth Questionnaire #Q1 – Positive Responders

"Since start of study, I can see my bald spot getting smaller."



Response is defined as Strongly agree/Agree (positive response) vs No opinion/Disagree/Strongly disagree (negative response)
Negative responders are not displayed

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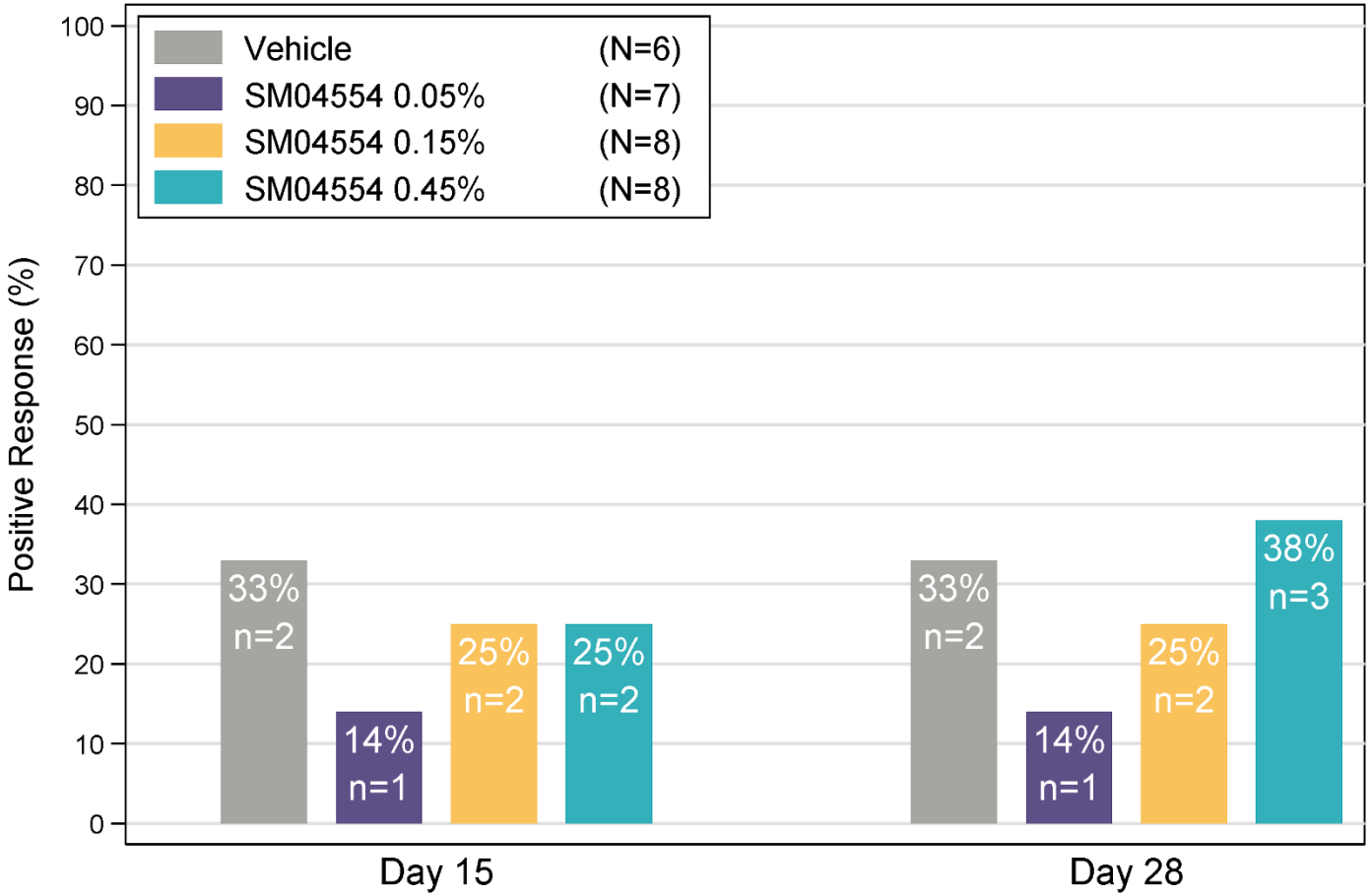
This study was not powered for efficacy or comparison to vehicle

Men's Hair Growth Questionnaire #Q2 – Positive Responders

"Because of the treatment I have received since the start of the study, the appearance of my hair is:"



Response is defined as Better/Little better (positive response) vs Same/Little worse/Worse (negative response)
Negative responders are not displayed

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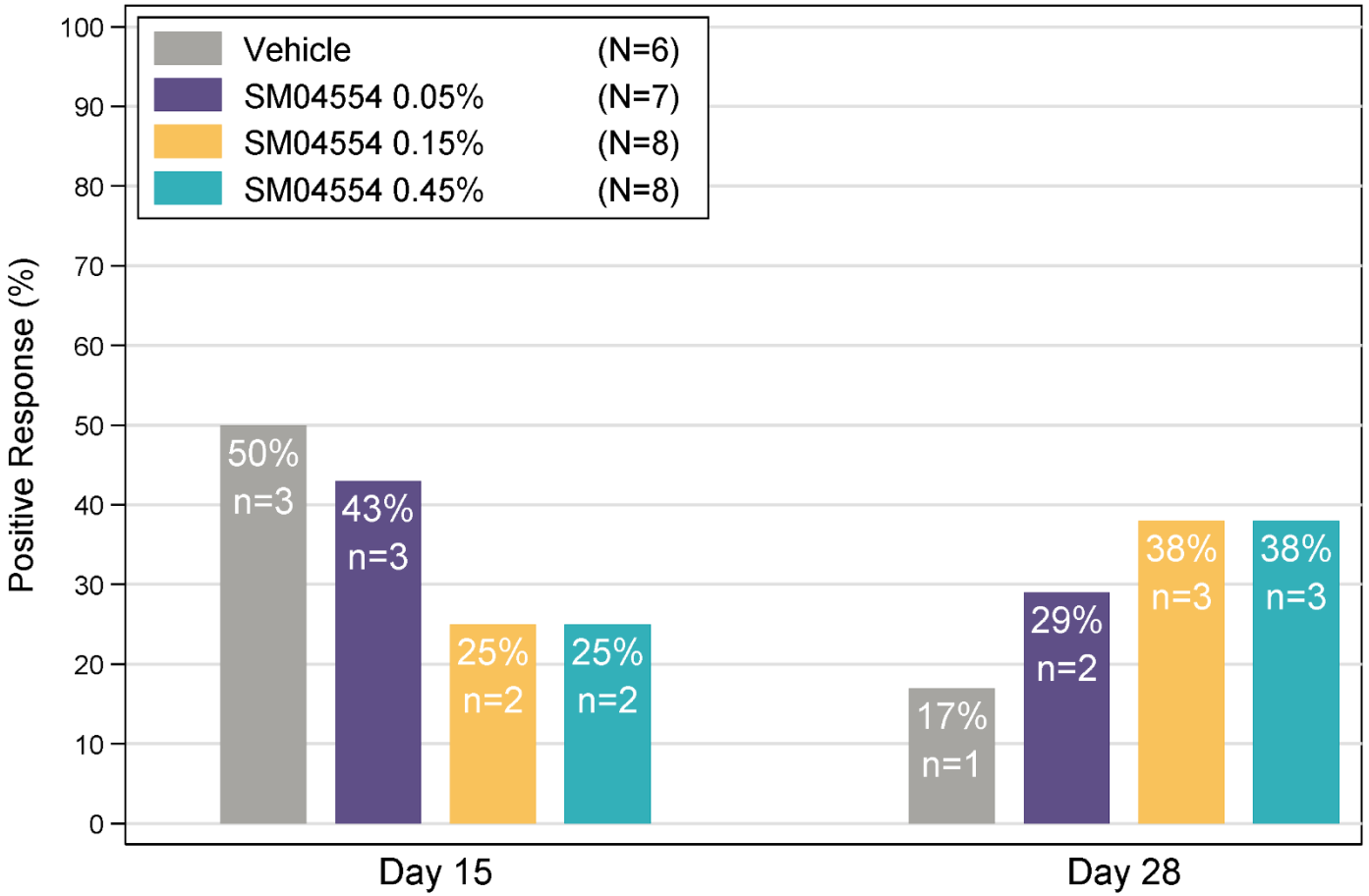
Men's Hair Growth Questionnaire #Q3 – Positive Responders

"Since start of study, how would you describe the growth of your hair?"



Response is defined as Greatly Increased/Moderately Increased/Slightly Increased (positive response) vs No Change/Slightly Decreased/ Moderately Decreased/Greatly Decreased (negative response)
Negative responders are not displayed

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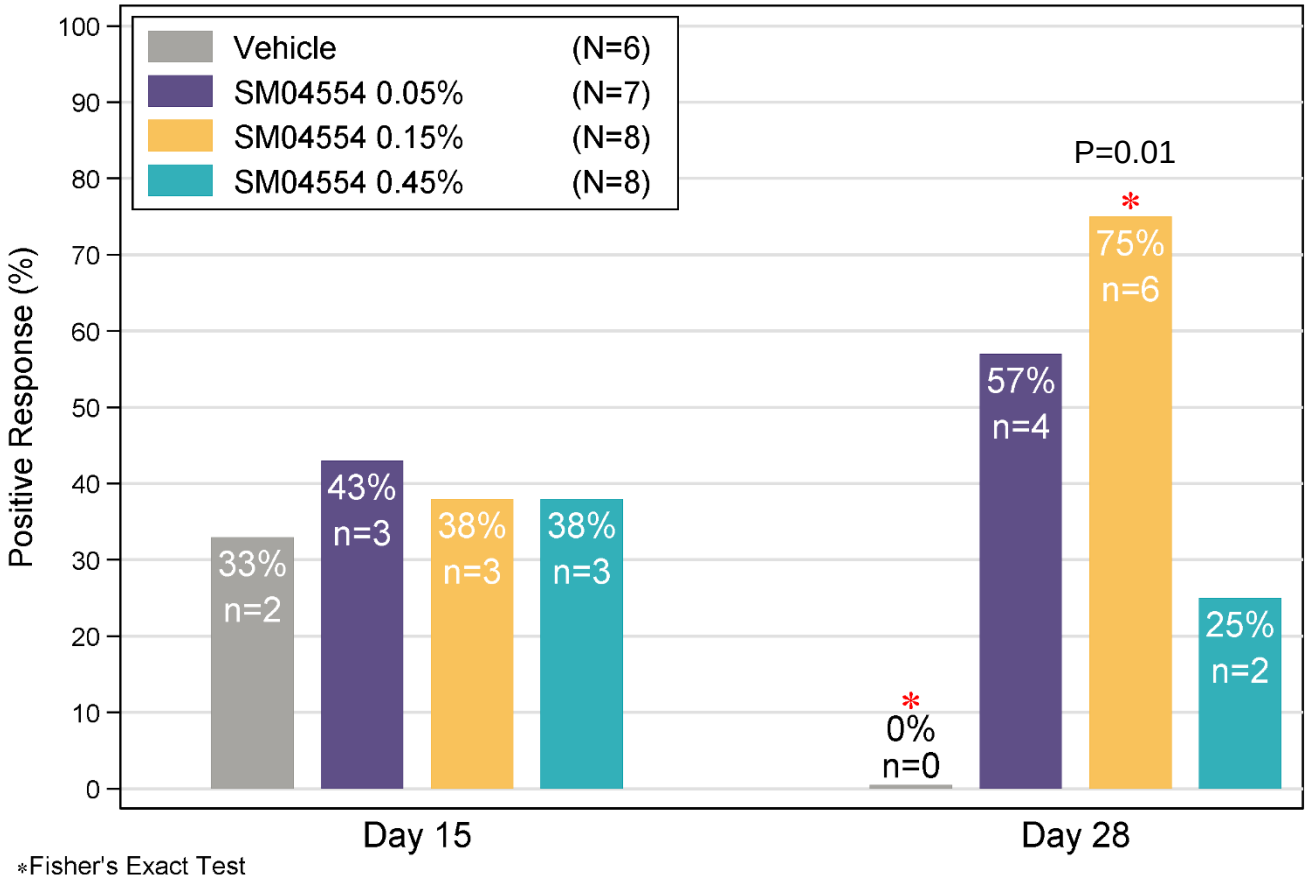
Men's Hair Growth Questionnaire #Q4 – Positive Responders

"Since start of study, how effective do you think this treatment has been in slowing down your hair loss?"



*Fisher's Exact Test

Response is defined as Effective/Somewhat effective (positive response) vs Not very effective/Not effective at all (negative response)
Negative responders are not displayed

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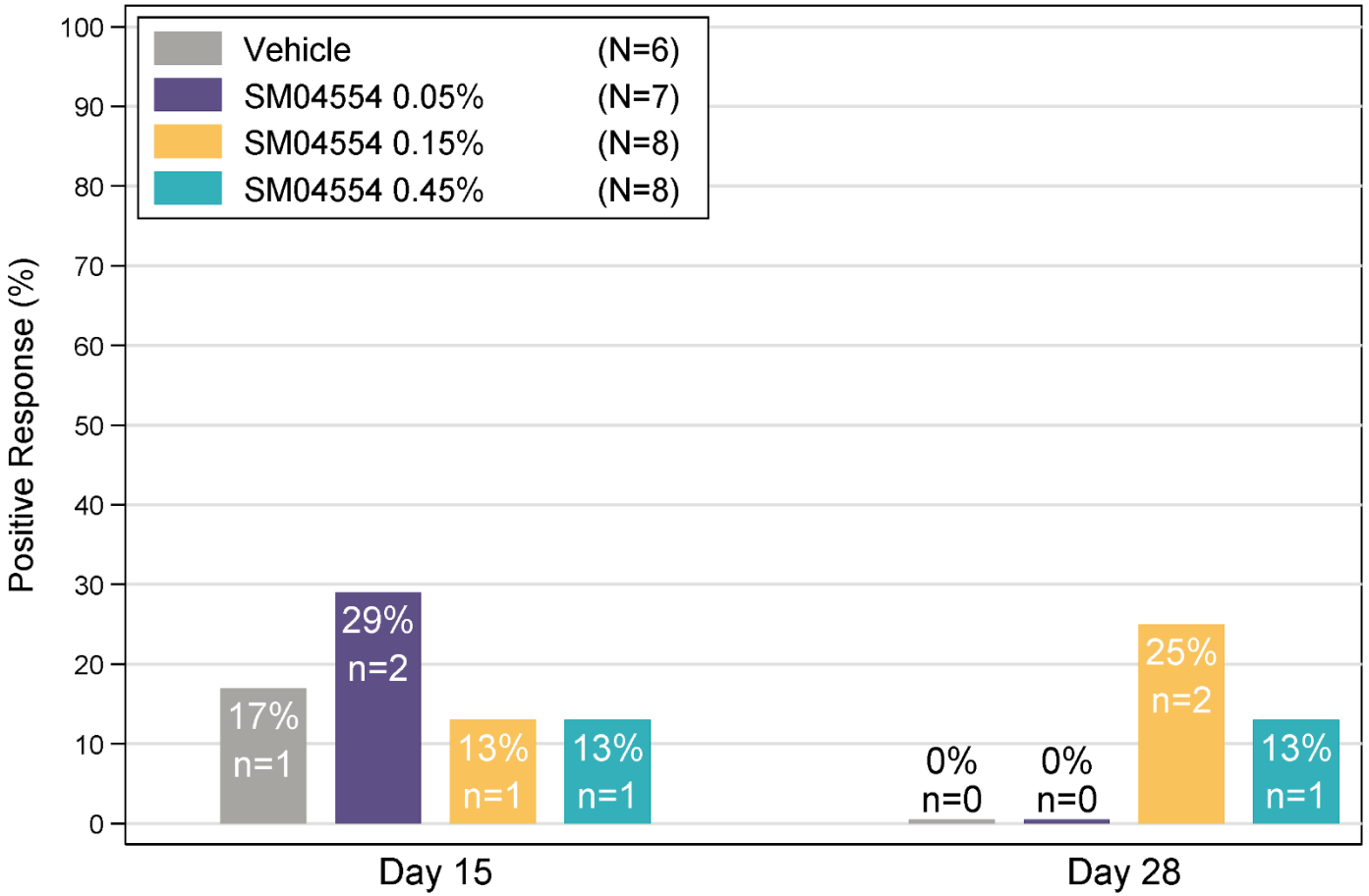
Men's Hair Growth Questionnaire #Q5 – Positive Responders

"Compared to the beginning of the study, which statement best describes your satisfaction with the appearance of the hair on top of your head?"



Response is defined as Very satisfied/Satisfied (positive response) vs Neutral/Dissatisfied/Very dissatisfied (negative response)
Negative responders are not displayed

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This study was not powered for efficacy or comparison to vehicle

Phase I Study Summary

- SM04554 appears safe and well tolerated when dosed daily for 14 days and through 14 days post-treatment
  - No SAE / DLT reported
  - Total of 11/29 subjects reported 15 AEs during the study
  - No increased incidence of AEs as doses escalated
  - Majority of AEs were reported only once, were mild in intensity and not related to study medication
  - Systemic exposure was low and dose-dependent

- No change in investigator reported hair growth at day 15 or 28

- Exploratory endpoints at 28 days demonstrated a trend towards:
  - Increased hair growth in some treated subjects (#Q3)
  - Slowing of hair loss in some treated subjects (#Q4)
    - 6/8 subjects enrolled in Cohort 2 had a positive response (p=0.01)

Phase II Protocol Synopsis

TITLE	A Phase 2, Multi-Center, Randomized, Double-Blind, Vehicle Controlled Study of the Safety, Tolerability and Efficacy of 0.15% and 0.25% Concentrations of Topical SM04554 Solution in Male Subjects with Androgenetic Alopecia (AGA)
POPULATION	Males 18 to 55 years of age, inclusive, with AGA (Norwood-Hamilton Classification score of 4, 5, 5A, 5V, or 6)
COHORTS	Topical 0.15% and 0.25%, or Vehicle (PEG) N=300 (1:1:1 Randomization) Treated for 3 months with a 45-day Follow-up period
SAFETY	• Laboratory Panels • ECG • Scalp Assessment • Vital Signs • Adverse Events
CLINICAL OUTCOMES (45, 90 & 135 Days)	• Men's Hair Growth Questionnaire (MHGQ) • Kingsley Alopecia Profile (KAP) • Investigator Reported Hair Growth
IMAGING OUTCOMES	• Macro photographs of target area (45, 90, and 135 Days) for total non-vellus hair count

Phase II Study Demographics

	0.15%	0.25%	Vehicle
N	102	102	98
Age at Consent (Years) [Mean (SD)]	44.2 (8.2)	44.7 (8.8)	45.0 (8.6)
Race: White [N(%)]	89 (87%)	88 (86%)	90 (91%)
Norwood-Hamilton [N(%)]			
4	29 (28%)	36 (35%)	35 (36%)
5	9 (9%)	14 (14%)	17 (17%)
5A	18 (18%)	11 (11%)	22 (22%)
5V	26 (26%)	22 (22%)	14 (14%)
6	20 (20%)	19 (19%)	10 (10%)

Phase II Safety Summary

- 1 SAE (Small Bowel Obstruction) – Vehicle

- Related AEs
  - 0.15% - 26 in 21 subjects
  - 0.25% - 20 in 13 subjects
  - Vehicle - 31 in 21 subjects

- Most Common Related AEs – Erythema, Paraesthesia, Pruritis and Hypersensitivity at Administration Site
  - 0.15% - 17 in 15 subjects
  - 0.25% - 9 in 6 subjects
  - Vehicle - 14 in 11 subjects

Thank you

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