

Efficacy and Safety of Ruxolitinib Cream for the Treatment of Vitiligo by Patient Demographics and Baseline Clinical Characteristics: Week 52 Pooled Subgroup Analysis From Two Randomized Phase 3 Studies

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Background

- Vitiligo is a chronic autoimmune disease that targets melanocytes, resulting in patches of skin depigmentation¹
- Factors including skin phototype and disease duration may affect treatment efficacy in patients with vitiligo^{2,3}
- Disease pathogenesis is largely regulated by interferon-γ activation of the Janus kinase (JAK) signaling pathway⁴
- A cream formulation of ruxolitinib, a JAK1/JAK2 inhibitor, was recently approved by the US Food and Drug Administration for the topical treatment of nonsegmental vitiligo in adult and pediatric patients 12 years of age and older⁵
- In 2 randomized, double-blind, vehicle-controlled phase 3 studies of adults and adolescents with vitiligo (TRuE-V1 [NCT04052425]/TRuE-V2 [NCT04057573]), ruxolitinib cream was statistically superior to vehicle at Week 24 in the primary and all key secondary efficacy endpoints⁶

Objective

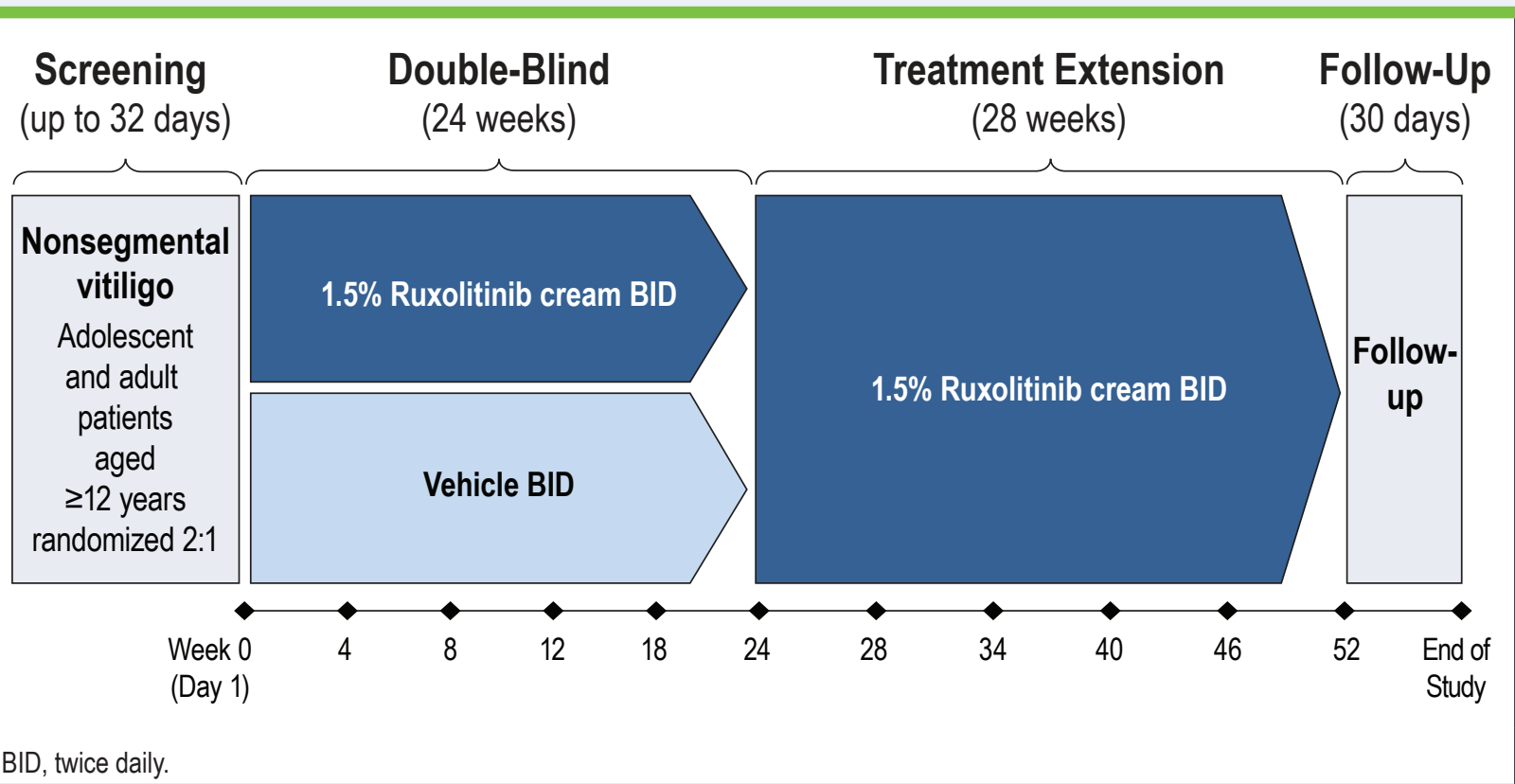
- To evaluate the efficacy and safety of ruxolitinib cream in adolescent and adult patients, based on baseline demographics and clinical characteristics, following 52 weeks of treatment using pooled data from the TRuE-V1/TRuE-V2 phase 3 studies of patients with nonsegmental vitiligo

Methods

Patients and Study Design

- For both studies, eligible patients were aged ≥12 years with a diagnosis of nonsegmental vitiligo and depigmented areas covering ≤10% total body surface area (BSA; facial and nonfacial), including ≥0.5% BSA on the face and ≥3% BSA on nonfacial areas, with scores ≥0.5 on facial Vitiligo Area Scoring Index (F-VASI), and scores ≥3 on total VASI (T-VASI)
- Key exclusion criteria were the presence of complete leukotrichia within any facial lesions, dermatologic disease confounding vitiligo assessment, previous use of JAK inhibitor therapy, and use of the following therapies for vitiligo before baseline: any biologic or experimental therapy within 12 weeks (or 5 half-lives), phototherapy within 8 weeks, immunomodulating treatments within 4 weeks, or topical treatments within 1 week
- Patients were stratified by geographic region (North America and Europe) and Fitzpatrick skin type (types I–III or IV–VI) and were randomized 2:1 to apply 1.5% ruxolitinib cream twice daily (BID) or vehicle BID for 24 weeks (**Figure 1**)
 - After completion of the Week 24 visit, all patients could apply 1.5% ruxolitinib cream BID for an additional 28 weeks in the open-label treatment extension
- All patients who were randomized, except 13 patients from one site, were included in efficacy analyses

Figure 1. Study Design



Endpoints and Assessments

- At Week 52, patients who achieved ≥75% improvement from baseline in F-VASI (F-VASI75) were evaluated by age group (12–17, 18–64, ≥65 years), sex (male, female), geographic region (North America, Europe), race (White, Black, Asian, other, not reported), Fitzpatrick skin type (I–III, IV–VI), facial BSA (F-BSA; <1.5%, ≥1.5%), investigator-assessed disease stability (stable, progressive), other autoimmune disorders (yes, no), disease duration (<10, 10–20, >20 years), and previous therapy (yes, no; topical corticosteroid, topical calcineurin inhibitor, phototherapy)
- The safety and tolerability of ruxolitinib cream were also assessed

Statistical Analyses

- Data at Week 52 are reported as observed, and subgroup analyses were summarized using descriptive statistics
- All patients who applied ≥1 dose of study drug were included in the safety analysis

Results

Patients

- In total, 674 patients were randomized in the TRuE-V studies (ruxolitinib cream, n=450; vehicle, n=224)
 - 673 and 661 patients were included in the safety and efficacy analyses, respectively
- Mean (SD) age at baseline was 39.5 (15.1) years (**Table 1**)
- 27.9% of patients had Fitzpatrick skin types IV–VI
- Baseline mean F-VASI and T-VASI scores were 0.92 and 6.69, respectively

Table 1. Patient Demographics and Disease Characteristics

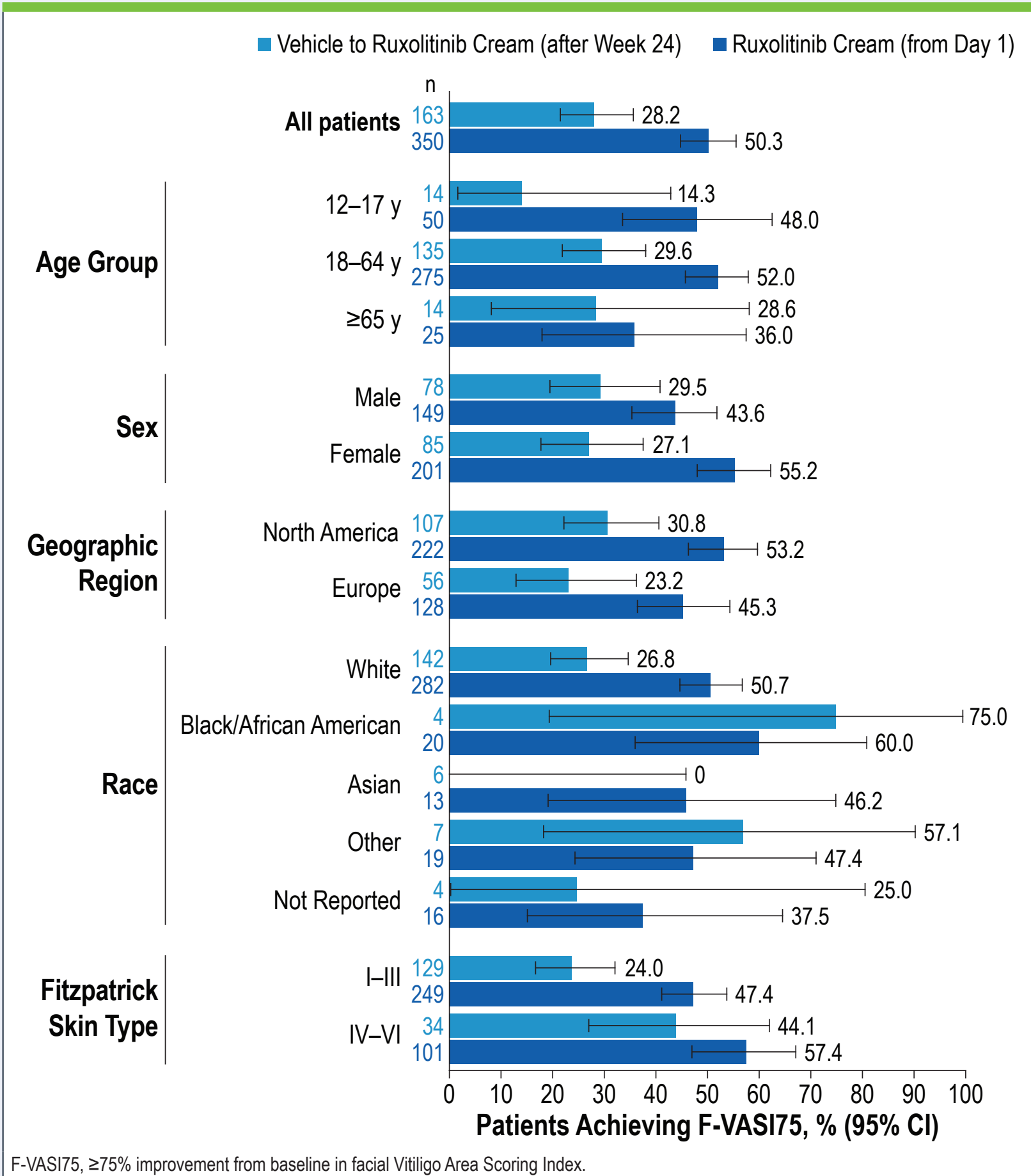
Characteristic	Vehicle (n=224)	Ruxolitinib Cream (n=449)	Total (N=673)
Age, mean (SD), y	39.7 (14.5)	39.4 (15.4)	39.5 (15.1)
Age group, n (%), y			
12–17	17 (7.6)	55 (12.2)	72 (10.7)
18–64	191 (85.3)	366 (81.5)	557 (82.8)
≥65	16 (7.1)	28 (6.2)	44 (6.5)
Sex, n (%)			
Male	114 (50.9)	201 (44.8)	315 (46.8)
Female	110 (49.1)	248 (55.2)	358 (53.2)
Geographic region, n (%)			
North America	156 (69.6)	307 (68.4)	463 (68.8)
Europe	68 (30.4)	142 (31.6)	210 (31.2)
Race, n (%)			
White	189 (84.4)	362 (80.6)	551 (81.9)
Black/African American	9 (4.0)	23 (5.1)	32 (4.8)
Asian	11 (4.9)	17 (3.8)	28 (4.2)
Other*	9 (4.0)	28 (6.2)	37 (5.5)
Not reported	6 (2.7)	19 (4.2)	25 (3.7)
Fitzpatrick skin type, n (%)			
I–III	164 (73.2)	321 (71.5)	485 (72.1)
IV–VI	60 (26.8)	128 (28.5)	188 (27.9)
F-BSA, [†] mean (SD), %	1.03 (0.65)	1.02 (0.63)	1.02 (0.64)
<1.5%, [‡] n (%)	179 (82.1)	355 (80.1)	534 (80.8)
≥1.5%, [‡] n (%)	39 (17.9)	88 (19.9)	127 (19.2)
Baseline F-VASI, mean (SD)	0.92 (0.56)	0.92 (0.55)	0.92 (0.56)
Baseline T-VASI, mean (SD)	6.73 (2.09)	6.67 (2.05)	6.69 (2.06)
Duration of disease, median (range), y	12.1 (0–59.5)	11.9 (0–60.5)	12.0 (0–60.5)
<10 y, [†] n (%)	88 (40.4)	197 (44.5)	285 (43.1)
10–20 y, [†] n (%)	74 (33.9)	123 (27.8)	197 (29.8)
>20 y, [†] n (%)	56 (25.7)	123 (27.8)	179 (27.1)
Disease stability, [§] n (%)			
Stable	168 (75.0)	331 (73.7)	499 (74.1)
Progressive	56 (25.0)	118 (26.3)	174 (25.9)
Other autoimmune disorders, n (%)			
Yes	36 (16.1)	90 (20.0)	126 (18.7)
No	188 (83.9)	359 (80.0)	547 (81.3)
Previous therapy, [¶] n (%)			
Any	137 (61.2)	274 (61.0)	411 (61.1)
Topical corticosteroid	56 (25.0)	133 (29.6)	189 (28.1)
Topical calcineurin inhibitor	68 (30.4)	146 (32.5)	214 (31.8)
Phototherapy	77 (34.4)	138 (30.7)	215 (31.9)
None	87 (38.8)	175 (39.0)	262 (38.9)

BSA, body surface area; F-BSA, facial BSA; F-VASI, facial Vitiligo Area Scoring Index; NB-UVB, narrow-band ultraviolet-B; PUVA, psoralen ultraviolet A; T-VASI, total Vitiligo Area Scoring Index.
[†]Includes American Indian/Alaska Native, Native Hawaiian/Pacific Islander, and “Other.”
[‡]Percentage of total BSA.
[§]Among the intent-to-treat population (vehicle, n=218; ruxolitinib cream, n=443; total, N=661).
^{||}Determination of disease status was based on investigator judgment.
[¶]Patients could have used multiple previous lines of therapy.
^{||}Phototherapy includes NB-UVB phototherapy, excimer laser, and PUVA phototherapy.

Efficacy by Demographic and Clinical Characteristic Subgroups

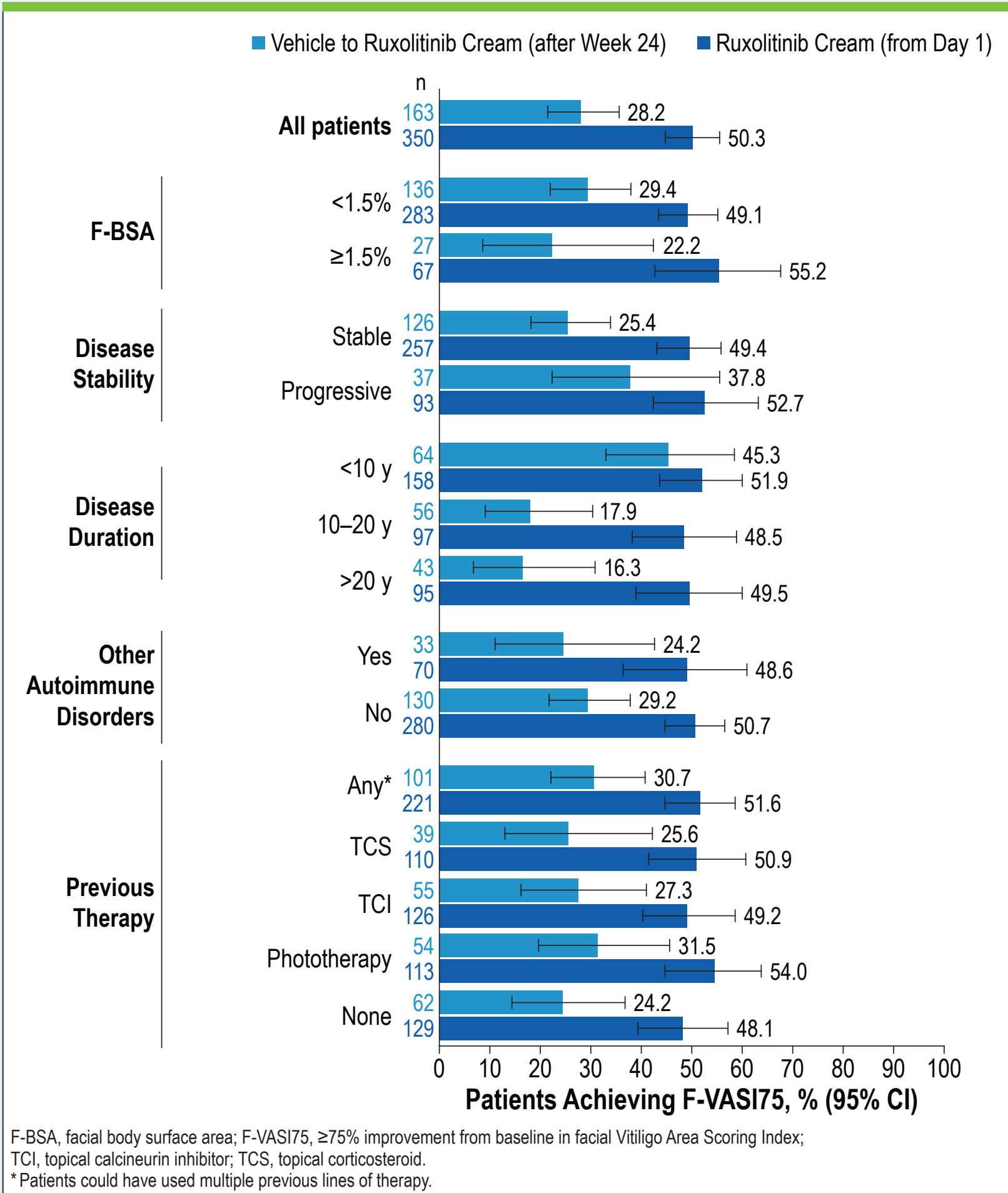
- At Week 52, 50.3% of patients who applied ruxolitinib cream from Day 1 achieved F-VASI75
- Efficacy by F-VASI75 response was identified in all demographic and clinical characteristic subgroups (**Figures 2–4**)
 - Substantive responses were seen for men and women, and all age groups
 - F-VASI75 responses were generally consistent based on skin type, F-BSA, investigator-assessed disease stability, disease duration, presence of other autoimmune disorders, and previous therapy

Figure 2. F-VASI75 Response at Week 52 by Age Group, Sex, Geographic Region, Race, and Fitzpatrick Skin Type



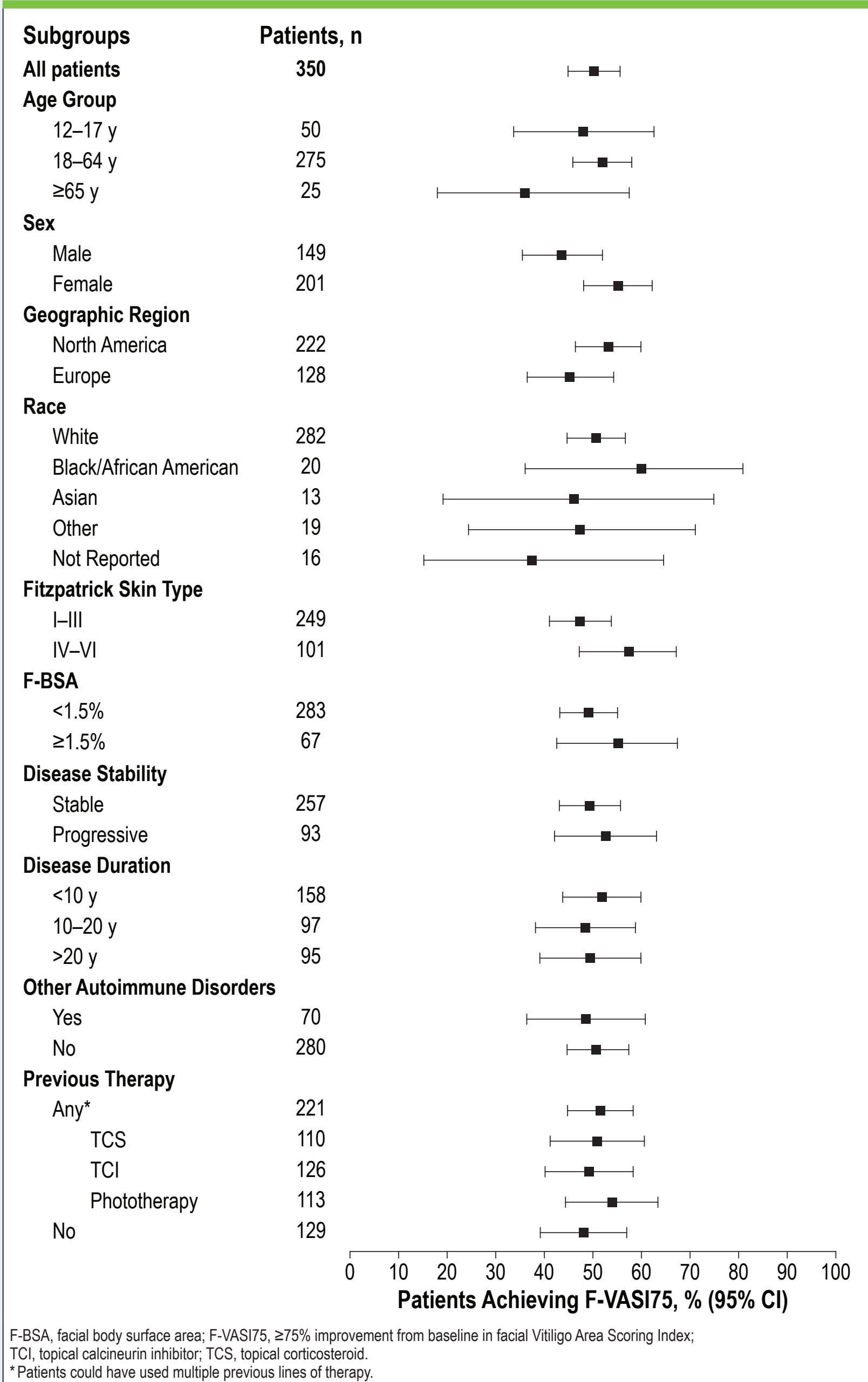
F-VASI75, ≥75% improvement from baseline in facial Vitiligo Area Scoring Index.

Figure 3. F-VASI75 Response at Week 52 by F-BSA, Disease Stability, Disease Duration, Presence of Other Autoimmune Disorder, and Previous Therapy



F-BSA, facial body surface area; F-VASI75, ≥75% improvement from baseline in facial Vitiligo Area Scoring Index; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid.
[†]Patients could have used multiple previous lines of therapy.

Figure 4. F-VASI75 Response at Week 52 by All Baseline and Clinical Characteristics for Patients Who Applied Ruxolitinib Cream From Day 1



F-BSA, facial body surface area; F-VASI75, ≥75% improvement from baseline in facial Vitiligo Area Scoring Index; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid.
^{*}Patients could have used multiple previous lines of therapy.

Safety by Demographic Subgroups

- Treatment-related adverse events (AEs) occurred in 13.7% of patients who applied ruxolitinib cream at any time during the study, with generally similar rates among demographic subgroups for patients who applied ruxolitinib cream (**Table 2**)

Table 2. Treatment-Emergent AEs by Demographic Subgroups

Subgroups, n (%)	Vehicle up to Week 24			Ruxolitinib Cream up to Week 52*		
	n	TEAE	Treatment-Related AE	n	TEAE	Treatment-Related AE
All patients	224	81 (36.2)	16 (7.1)	637	332 (52.1)	87 (13.7)
Age groups						
12–17 y	17	6 (35.3)	0	70	37 (52.9)	9 (12.9)
18–64 y	191	66 (34.6)	13 (6.8)	525	275 (52.4)	73 (13.9)
≥65 y	16	9 (56.3)	3 (18.8)	42	20 (47.6)	5 (11.9)
Sex						
Male	114	31 (27.2)	3 (2.6)	293	140 (47.8)	33 (11.3)
Female	110	50 (45.5)	13 (11.8)	344	192 (55.8)	54 (15.7)
Geographic region						
North America	156	48 (30.8)	12 (7.7)	432	199 (46.1)	55 (12.7)
Europe	68	33 (48.5)	4 (5.9)	205	133 (64.9)	32 (15.6)
Race						
White	189	69 (36.5)	13 (6.9)	526	276 (52.5)	68 (12.9)
Black/African American	9	1 (11.1)	0	28	10 (35.7)	2 (7.1)
Asian	11	0	0	23	7 (30.4)	3 (13.0)
Other [†]	9	6 (66.7)	2 (22.2)	35	18 (51.4)	3 (8.6)
Not reported	6	5 (83.3)	1 (16.7)	25	21 (84.0)	11 (44.0)

AE, adverse event; TEAE, treatment-emergent adverse event.
^{*}Including patients who crossed over from vehicle after Week 24.
[†]Includes American Indian/Alaska Native, Native Hawaiian/Pacific Islander, and “Other.”

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Conclusions

- Adolescent and adult patients with nonsegmental vitiligo applying ruxolitinib cream, including those who crossed over from vehicle to ruxolitinib cream for 28 weeks, achieved efficacy per F-VASI75 at Week 52 regardless of baseline demographics or clinical characteristics
- Ruxolitinib was well tolerated, and the incidence of treatment-related AEs was similar across demographic subgroups

Disclosures

JS has received grants and/or honoraria from AbbVie, Bristol Myers Squibb, Calypso Biotech, Eli Lilly, Incyte Corporation, LEO Pharma, Novartis, Pfizer, Pierre Fabre, Sanofi, Sun Pharmaceuticals, and Viela Bio; and has patents on MMP9 inhibitors and uses thereof in the prevention or treatment of a depigmenting disorder and three-dimensional model of depigmenting disorder. AW is a dermatologist at the Netherlands Institute for Pigment Disorders and the Department of Dermatology at the Amsterdam University Medical Center; has served as principal investigator for Avita Medical, Incyte, and Novartis; has served as an advisory board member for Incyte; has received research grants from Avita Medical and Lumenis; and has received devices from Humeca and PerfAction. SRD has received fees and/or honoraria as a consultant for Almirall, Avita, Bristol Myers Squibb, Cassiopea SpA, Dermavant Sciences, Dermira, Ferndale Laboratories, Foamix, Galderma Laboratories LP, Incyte, MC2 Therapeutics, Ortho Dermatologics, Pfizer, Scientis, Sente Labs, SkinCeuticals LLC, UCB, and Verrica Pharmaceuticals; has received stock options as a consultant for Gore Range Capital; has received honoraria as a speaker for Almirall and Ortho Dermatologics; has received grants/research funding as an investigator for AbbVie, AOBiome LLC, Atacama Therapeutics, Brickell Biotech, Dermavant Sciences, Incyte, Novan, and SkinMedica; has served as an advisory board member for the Foundation for Research & Education of Dermatology; is a stockholder of Gore Range Capital; and is a shareholder in PDP of Texas. PG has served as a consultant for Aclaris Therapeutics, Clarify Medical, DermaForce, Incyte, Proctor & Gamble, and Versicolor Technologies and a principal investigator for Aclaris Therapeutics, Allergan/SkinMedica, Clinevel Pharmaceuticals, Incyte, Johnson & Johnson, L'Oreal, Merz Pharma, Pfizer, Thync Global Inc., and VT Cosmetics. KE is a consultant for AbbVie, Incyte, La Roche-Posay, Pfizer, Pierre Fabre, Sanofi, and Viela Bio. DK, SW, and KB are employees and shareholders of Incyte. DR has received honoraria as a consultant for AbbVie, Abcurio, AltruBio, Boehringer Ingelheim, Bristol Myers Squibb, Celgene, Concert, Dermavant Sciences, Dermira, Incyte, Janssen, Kyowa Kirin, Lilly, Novartis, Pfizer, Regeneron Pharmaceuticals, Sanofi, Sun Pharmaceuticals, UCB, and VielaBio; has received research support from AbbVie, Amgen, Bristol Myers Squibb, Celgene, Dermira, Galderma, Incyte, Janssen, Lilly, Merck, Novartis, Pfizer, and Regeneron Pharmaceuticals; and has served as a paid speaker for AbbVie, Amgen, Celgene, Janssen, Lilly, Novartis, Pfizer, Regeneron Pharmaceuticals, and Sanofi.

Acknowledgments

This study was funded by Incyte Corporation (Wilmington, DE, USA). Writing assistance was provided by Vicky Kanta, PhD, an employee of ICON (Blue Bell, PA, USA) and was funded by Incyte.

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