Efficacy and safety by body weight decile in patients treated with tildrakizumab 100 mg for 28 weeks: Pooled data analysis of reSURFACE 1 and reSURFACE 2

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INTRODUCTION

- Higher body weight is associated with reduced efficacy of some biological therapies in patients with psoriasis[1]
- Tildrakizumab is an anti–interleukin-23 p19 monoclonal antibody approved for the treatment of patients with moderate-to-severe plaque psoriasis who are candidates for systemic therapy or phototherapy[2]
- To provide clarity regarding the efficacy and safety of tildrakizumab in relation to body weight, we analyzed efficacy and safety at the decile level

OBJECTIVE

- To evaluate the efficacy and safety of tildrakizumab across weight deciles up to Week 28 using pooled data from the two randomized, placebo-controlled, Phase 3 trials (reSURFACE 1 [NCT01722331] and reSURFACE 2 [NCT01729754])[3]

METHODS

Study design and population

- Data were pooled from the Phase 3 reSURFACE 1 (NCT01722331) and reSURFACE 2 (NCT01729754) trials and stratified by body weight decile (**Table 1**)
- Patients with moderate-to-severe plaque psoriasis received tildrakizumab 100 mg at Week 0, 4, and every 12 weeks thereafter through Week 28 (n = 616) or placebo through Week 12 (n = 309)

Assessments

- Efficacy was assessed from proportions of patients with Psoriasis Area and Severity Index (PASI) 75/90/100 response, absolute PASI score <5/<4/<3/<2/<1, Physician Global Assessment (PGA) score of 0 or 1 (0/1), and Dermatology Life Quality Index (DLQI) 0/1
- Safety was assessed from treatment-emergent adverse events (TEAEs) and severe AEs (SAEs)

Statistical analysis

- Efficacy was analyzed in the Full Analysis Set population (all patients remaining on the same treatment from baseline through Week 28, or the end of their participation if they discontinued prior to Week 28)
- Safety was assessed in all patients, as treated
- Missing data were handled using nonresponder imputation

RESULTS

Patient demographics

- Across weight deciles, 80.6%–96.8% of patients completed the study
- Baseline weight, body mass index, and disease characteristics were consistent between tildrakizumab- and placebo-treated patients within each weight decile (**Table 1**)

Table 1. Demographics and baseline characteristics by body weight decile

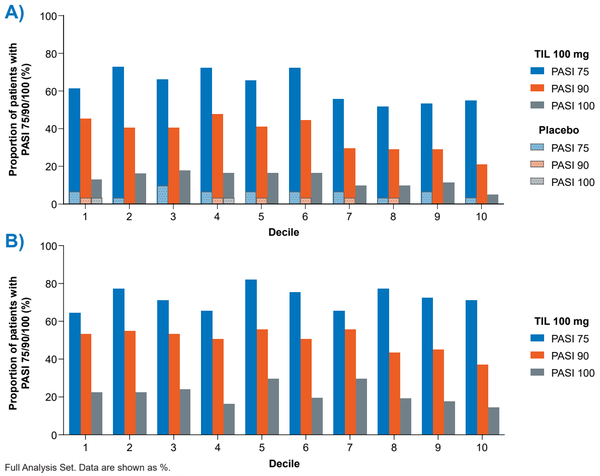
Tildrakizumab 100 mg (n = 616)								
Weight decile	n	Weight range, kg	Age, yr	Weight, kg	BMI, kg/m²	PASI	PGA	% BSA	DLQI
1	62	40.9–62.2	43.8 (14.5)	55.7 (4.60)	21.1 (2.30)	21.1 (8.39)	3.4 (0.55)	33.9 (20.2)	14.6 (6.53)
2	62	62.3–70.5	45.1 (14.2)	66.8 (2.37)	24.2 (2.41)	20.3 (8.41)	3.3 (0.51)	30.2 (16.7)	14.8 (7.23)
3	62	70.7–75.6	46.0 (14.3)	73.2 (1.53)	25.5 (2.33)	20.8 (9.37)	3.3 (0.54)	33.3 (20.9)	13.7 (6.45)
4	61	75.8–81.5	44.2 (14.7)	78.8 (1.62)	26.6 (2.68)	20.5 (8.16)	3.3 (0.57)	31.9 (18.0)	15.2 (7.68)
5	61	81.6–86.2	45.8 (12.1)	84.0 (1.46)	29.0 (3.09)	19.2 (5.83)	3.3 (0.60)	32.3 (16.4)	14.2 (7.09)
6	61	86.3–91.0	48.2 (12.9)	88.9 (1.33)	29.8 (3.22)	20.0 (7.80)	3.3 (0.54)	32.0 (18.7)	14.6 (7.16)
7	61	91.0–96.5	45.8 (13.2)	93.9 (1.51)	31.4 (3.49)	19.7 (6.53)	3.3 (0.61)	32.9 (18.2)	12.5 (6.43)
8	62	96.6–104.3	46.9 (12.7)	100.0 (2.28)	32.9 (3.52)	19.5 (6.77)	3.4 (0.64)	29.9 (17.0)	13.7 (7.30)
9	62	104.4–119.0	45.1 (12.7)	111.3 (4.41)	36.4 (3.74)	19.5 (6.45)	3.2 (0.47)	29.0 (15.7)	15.8 (7.20)
10	62	119.0–194.7	44.1 (12.6)	136.8 (17.1)	42.9 (7.05)	21.6 (9.04)	3.4 (0.55)	34.1 (18.9)	15.1 (7.22)
Placebo (n = 309)								
Weight decile	n	Weight range, kg	Age, yr	Weight, kg	BMI, kg/m²	PASI	PGA	% BSA	DLQI
1	31	44.0–61.0	48.7 (13.6)	54.5 (4.52)	21.6 (1.93)	22.5 (8.79)	3.2 (0.50)	35.8 (15.7)	14.3 (6.53)
2	31	61.8–69.2	46.4 (15.7)	66.4 (2.13)	24.5 (2.69)	18.3 (6.24)	3.3 (0.46)	30.7 (17.7)	13.0 (6.44)
3	31	69.5–73.0	44.6 (14.3)	71.3 (1.04)	25.2 (2.01)	20.4 (9.61)	3.4 (0.61)	33.6 (18.2)	12.6 (6.88)
4	31	73.6–80.0	43.0 (14.0)	76.5 (1.86)	26.1 (2.57)	19.6 (6.33)	3.3 (0.51)	32.0 (15.1)	15.2 (7.92)
5	31	80.0–85.7	49.1 (12.8)	82.6 (2.07)	27.8 (2.67)	19.6 (8.41)	3.3 (0.64)	27.9 (16.8)	11.6 (7.21)
6	31	85.8–90.7	47.3 (11.8)	88.3 (1.55)	31.3 (4.83)	20.9 (7.05)	3.2 (0.50)	33.3 (16.3)	12.6 (6.22)
7	31	91.0–96.4	47.9 (12.2)	93.6 (1.66)	31.0 (3.97)	19.1 (7.11)	3.5 (0.68)	28.0 (13.7)	14.6 (6.59)
8	31	96.5–103.3	50.4 (11.5)	99.4 (2.09)	32.4 (3.61)	18.9 (5.78)	3.4 (0.50)	28.9 (16.9)	13.4 (6.57)
9	31	104.0–117.3	46.5 (11.6)	109.3 (4.48)	36.4 (4.59)	17.7 (6.02)	3.2 (0.37)	24.0 (11.5)	13.6 (7.56)
10	30	117.7–180.2	47.6 (11.0)	142.3 (19.3)	45.4 (8.22)	19.5 (6.72)	3.6 (0.68)	29.8 (16.5)	14.7 (9.24)

Data are presented as mean (SD) unless otherwise indicated.
BMI, body mass index; BSA, body surface area; DLQI, Dermatology Life Quality Index; PASI, Psoriasis Area and Severity Index; PGA, Physician Global Assessment; SD, standard deviation; yr, year.

Efficacy

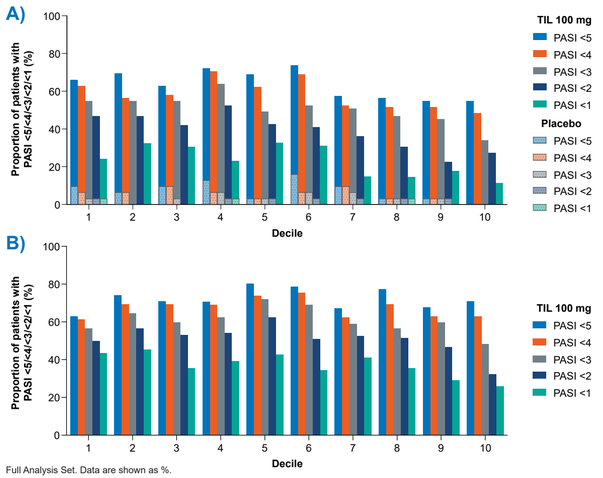
- Clinical improvement in patients treated with tildrakizumab vs placebo was observed at Week 12 and continued through Week 28 across all weight deciles
- A slightly greater proportion of patients with PASI 75/90/100 responses and PASI <5/<4/<3/<2/<1 scores was observed in the lower weight deciles at Week 12, but the difference among weight deciles decreased by Week 28 (**Figure 1** and **2**)

Figure 1. Proportion of patients with PASI 75/90/100 response at A) Week 12 and at B) Week 28 by body weight decile and treatment



Full Analysis Set. Data are shown as %.
PASI, Psoriasis Area and Severity Index; TIL, tildrakizumab.

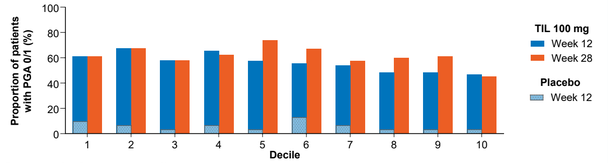
Figure 2. Proportion of patients with PASI <5/<4/<3/<2/<1 score at A) Week 12 and at B) Week 28 by body weight decile and treatment



Full Analysis Set. Data are shown as %.
PASI, Psoriasis Area and Severity Index; TIL, tildrakizumab.

- PGA 0/1 and DLQI 0/1 rates improved through Week 28 in all deciles and were lower only in the highest decile (**Figure 3** and **4**)
  - PGA 0/1 response rate range across weight deciles was 46%–67% at Week 12 and 55%–73% at Week 28 (**Figure 3**)

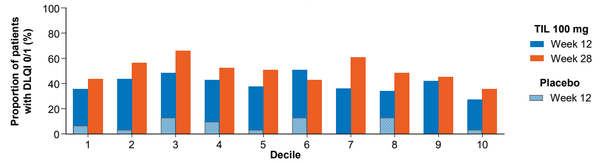
Figure 3. Proportion of patients with PGA score of 0 or 1 by body weight decile and treatment through Week 28



Full Analysis Set. Data are shown as %.
PGA, Physician Global Assessment; TIL, tildrakizumab.

  - DLQI 0/1 response rate range across weight deciles was 27%–50% at Week 12 and 35%–66% at Week 28 (**Figure 4**)

Figure 4. Proportion of patients with DLQI score of 0 or 1 by body weight decile and treatment through Week 28



Full Analysis Set. Data are shown as %.
DLQI, Dermatology Life Quality Index; TIL, tildrakizumab.

Safety

- Safety profiles were similar across all weight deciles
  - The most common TEAEs by body decile (>5% of patients receiving tildrakizumab 100 mg through Week 28) were nasopharyngitis, headache, and arthralgia

CONCLUSIONS

- Efficacy of tildrakizumab 100 mg at Week 12 was modestly associated with body weight, but differences in efficacy from the lightest to heaviest weight decile decreased by Week 28

REFERENCES

1) Pirro F, et al. *Clin Drug Investig.* 2021;41(10):917–25. **2)** ILUMYA® (tildrakizumab). Full prescribing information; April 2022. **3)** Reich K, et al. *Lancet.* 2017;390(10091):276–88.

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