Comparative Effectiveness of Biologics Across Subgroups of Patients With Moderate-to-Severe Plaque Psoriasis: Results at Months 6 and 12 from the PSoHO Study in Real-world Settings

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OBJECTIVE

- To evaluate the effectiveness of Anti–IL-17A Biologics vs. Other Biologics across clinically relevant subgroups at Months 6 and 12 in PSoHO

CONCLUSIONS

- Previous subgroup analysis of PSoHO data reported higher odds of achieving PASI 100 in the Anti–IL-17A Cohort vs. the Other Biologics Cohort across most subgroups at Week 12[2]
- In this current subgroup analysis of PSoHO data:
  - At Month 6, patients in the Anti–IL-17A Cohort vs. the Other Biologics Cohort continued to have statistically significant higher odds of achieving PASI 100 in the presented key subgroups, except for those with Asian ethnicity
  - At Month 12, the odds of achieving PASI 100 were similar between the cohorts except in the biologic-naïve subgroup, in which the odds continued to be higher for the Anti–IL-17A Cohort vs. the Other Biologics Cohort

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BACKGROUND

- The Psoriasis Study of Health Outcomes (PSoHO) is an ongoing, international, prospective, observational study investigating the effectiveness of different biologic drug classes in individuals with moderate-to-severe psoriasis (PsO) in a real-world setting[1]
- At Week 12 in the PSoHO, the odds of achieving complete resolution of PsO (PASI 100) were higher in the Anti–IL-17A Cohort vs. the Other Biologics Cohort across pre-specified, clinically relevant demographic and clinical subgroups, except the Asian subgroup, which did not reach statistical significance[2]

METHODS

Key Eligibility Criteria: PSoHO

Inclusion

- Patients (age 18-80 years) with moderate-to-severe plaque PsO for ≥6 months before baseline
- Initiating or switching biologic (or biosimilar) treatment during routine medical care

Exclusion

- Treatment initiation contraindicated due to country-specific approved indication
- Modifications to the dosing regimen of an existing biologic treatment
- Restart of biologic treatment previously received at any point
- Completion of/withdrawal from PSoHO
- Ongoing participation in another PsO study with any investigational product

Statistical Analysis

- Effectiveness outcome evaluated: proportions of patients achieving PASI 100 at Month 6 and Month 12
- Patients were grouped *a priori* according to clinically relevant demographic and disease variables

Demographic Variable	Subgroups
Age, years	<65, ≥65
Sex	Male, Female
BMI, kg/m²	≤30, >30
Ethnicity	White, Asian[a]

Disease Variable	Subgroups
Disease duration, years	<15, ≥15
PsA	Yes, No
Prior biologic use	Never, ≥1

- Across these subgroups, effectiveness was compared for the Anti–IL-17A Cohort vs. the Other Biologics Cohort

Anti–IL-17A Cohort
Ixekizumab
Secukinumab

vs.

Other Biologics Cohort
Anti–IL-17RA (brodalumab)
Anti–IL-23 p19 (guselkumab, risankizumab, tildrakizumab)
Anti–IL-12/23 p40 (ustekinumab)
Anti–TNFα (adalimumab, certolizumab, etanercept, infliximab)

- Baseline demographics and disease characteristics
  - Presented for each subgroup as n (%)
  - Pairwise comparisons between cohorts were performed using Fisher exact test or chi-square test
- Comparative effectiveness
  - Adjusted comparative analysis was conducted using FMA, presented as ORs with 95% CIs[1]
  - 95% CI was estimated using Bootstrap method[1]
  - Missing data were imputed using NRI
  - Statistical significance is indicated when the CIs of OR do not cross 1

[a] Subgroup analyses across other ethnicities were not viable due to the small numbers of patients in other ethnicity subgroups

SUMMARY OF KEY FINDINGS

Odds of Achieving PASI 100		At Month 6	At Month 12
Age, years	**<65**	✓	⇔
	≥65	✓	⇔
Sex	**Male**	✓	⇔
	Female	✓	⇔
BMI, kg/m²	**≤30**	✓	⇔
	>30	✓	⇔
Ethnicity	**White**	✓	⇔
	Asian	⇔	⇔
Disease duration, years	**<15**	✓	⇔
	≥15	✓	⇔
PsA	**Yes**	✓	⇔
	No	✓	⇔
Prior biologic use	**Never**	✓	✓
	≥1	✓	⇔

Adjusted OR (95% CI)
✓ Favors Anti–IL-17A Cohort
⇔ No statistically significant difference between cohorts

LIMITATIONS

- Real-world data may be biased due to unmeasured confounding
- Grouping of biologics into cohorts may not reflect variabilities within each cohort

RESULTS

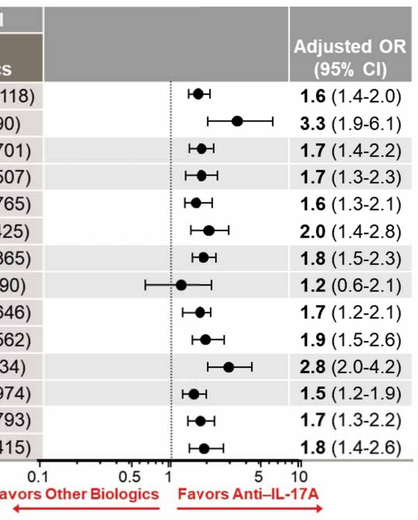
Baseline Demographics and Disease Characteristics

Cohort		Overall (N=1981)	Anti–IL-17A (n=773)	Other Biologics (n=1208)
Age, years	**<65**	1802 (91.0)	684 (88.5)*	1118 (92.5)
	≥65	179 (9.0)	89 (11.5)*	90 (7.5)
Sex	**Male**	1143 (57.7)	442 (57.2)	701 (58.0)
	Female	838 (42.3)	331 (42.8)	507 (42.0)
BMI, kg/m²	**≤30**	1233 (63.3)	468 (61.7)	765 (64.3)
	>30	716 (36.7)	291 (38.3)	425 (35.7)
Ethnicity	**White**	1441 (83.2)	576 (85.0)	865 (82.0)
	Asian	292 (16.8)	102 (15.0)	190 (18.0)
Disease duration, years	**<15**	1047 (52.9)	401 (51.9)	646 (53.5)
	≥15	934 (47.1)	372 (48.1)	562 (46.5)
PsA	**Yes**	461 (23.3)	227 (29.4)*	234 (19.4)
	No	1520 (76.7)	546 (70.6)*	974 (80.6)
Prior biologic use	**Never**	1274 (64.3)	481 (62.3)	793 (65.6)
	≥1	706 (35.7)	291 (37.7)	415 (34.4)

* p<0.001 vs. Other Biologics Cohort
Note: Values are n (%) of all available data for each measure

At Month 6, the Anti–IL-17A Cohort Had Significantly Greater Odds of Achieving PASI 100 Compared With the Other Biologics Cohort, Except for Those With Asian Ethnicity

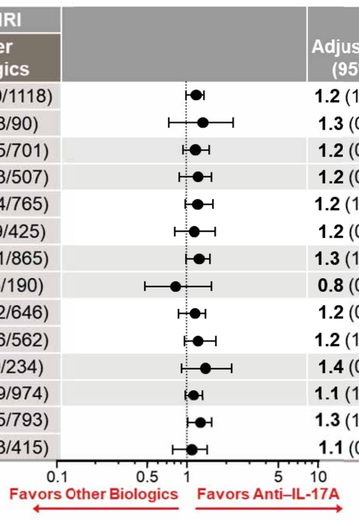
Cohort		Response, % (n/N) NRI: Anti–IL-17A	Response, % (n/N) NRI: Other Biologics	Adjusted OR (95% CI)
Age, years	**<65**	42.7 (292/684)	32.2 (360/1118)	**1.6** (1.4-2.0)
	≥65	48.3 (43/89)	23.3 (21/90)	**3.3** (1.9-6.1)
Sex	**Male**	43.7 (193/442)	31.2 (219/701)	**1.7** (1.4-2.2)
	Female	42.9 (142/331)	32.0 (162/507)	**1.7** (1.3-2.3)
BMI, kg/m²	**≤30**	45.3 (212/468)	35.0 (268/765)	**1.6** (1.3-2.1)
	>30	40.9 (119/291)	26.1 (111/425)	**2.0** (1.4-2.8)
Ethnicity	**White**	47.9 (276/576)	34.8 (301/865)	**1.8** (1.5-2.3)
	Asian	25.5 (26/102)	23.2 (44/190)	**1.2** (0.6-2.1)
Disease duration, years	**<15**	42.6 (171/401)	32.8 (212/646)	**1.7** (1.2-2.1)
	≥15	44.1 (164/372)	30.1 (169/562)	**1.9** (1.5-2.6)
PsA	**Yes**	44.5 (101/227)	23.1 (54/234)	**2.8** (2.0-4.2)
	No	42.9 (234/546)	33.6 (327/974)	**1.5** (1.2-1.9)
Prior biologic use	**Never**	45.9 (221/481)	34.3 (272/793)	**1.7** (1.3-2.2)
	≥1	39.2 (114/291)	26.3 (109/415)	**1.8** (1.4-2.6)



At Month 12, the Odds Of Achieving PASI 100 Were Similar Between the 2 Cohorts, but Continued to be Significantly Higher With Anti–IL-17A in the Biologic-Naïve Cohort

Cohort		Response, % (n/N) NRI: Anti–IL-17A	Response, % (n/N) NRI: Other Biologics	Adjusted OR (95% CI)
Age, years	**<65**	39.3 (269/684)	36.7 (410/1118)	**1.2** (1.0-1.4)[a]
	≥65	49.4 (44/89)	42.2 (38/90)	**1.3** (0.7-2.3)
Sex	**Male**	41.0 (181/442)	37.8 (265/701)	**1.2** (0.9-1.5)
	Female	39.9 (132/331)	36.1 (183/507)	**1.2** (0.9-1.6)
BMI, kg/m²	**≤30**	44.2 (207/468)	39.7 (304/765)	**1.2** (1.0-1.6)[b]
	>30	35.7 (104/291)	32.7 (139/425)	**1.2** (0.8-1.7)
Ethnicity	**White**	45.5 (262/576)	40.6 (351/865)	**1.3** (1.0-1.5)[a]
	Asian	24.5 (25/102)	28.9 (55/190)	**0.8** (0.5-1.6)
Disease duration, years	**<15**	40.9 (164/401)	39.0 (252/646)	**1.2** (0.9-1.4)
	≥15	40.1 (149/372)	34.9 (196/562)	**1.2** (1.0-1.7)[c]
PsA	**Yes**	37.9 (86/227)	29.5 (69/234)	**1.4** (0.9-2.2)
	No	41.6 (227/546)	38.9 (379/974)	**1.1** (1.0-1.3)[d]
Prior biologic use	**Never**	43.2 (208/481)	38.5 (305/793)	**1.3** (1.0-1.6)[e]
	≥1	36.1 (105/291)	34.5 (143/415)	**1.1** (0.8-1.4)

[a] Lower CI is 0.995; [b] Lower CI is 0.978; [c] Lower CI is 0.969; [d] Lower CI is 0.978; [e] Lower CI is 1.020



References:
1. Pinter A, et al. *J Eur Acad Dermatol Venereol*. 2022;36:2087-2100.
2. Lynde C, et al. *Adv Ther*. 2023;40:869-886.

Abbreviations: *BMI=body mass index; CI=confidence interval; FMA=frequentist model averaging; IL=interleukin; NRI=non-responder imputation; OR=odds ratio; PASI 100=100% improvement from baseline Psoriasis Area and Severity Index (complete resolution of PsO); PsA=psoriatic arthritis; PsO=psoriasis; PSoHO=Psoriasis Study of Health Outcomes; TNF=tumor necrosis factor*

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