Impact of Disease Factors of Patients with Psoriasis and Psoriatic Arthritis on Biologic Therapy Switching: Real-World Evidence from the CorEvitas Psoriasis Registry

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SUPPLEMENTARY DATA

Supplementary Table 1 Eligible Medications for Enrollment[a]

|	Class	Treatment
Biologic Treatments	TNFi	• Adalimumab • Adalimumab Biosimilar • Certolizumab • Etanercept • Etanercept Biosimilar • Infliximab • Infliximab Biosimilar
	IL-12/23i	• Ustekinumab
	IL-23i	• Guselkumab • Risankizumab • Tildrakizumab
	IL-17i	• Bimekizumab • Brodalumab • Ixekizumab • Secukinumab

[a]Eligible medications for enrollment included FDA-approved biologic and biosimilar treatments for PSO. FDA: Food and Drug Administration; i: inhibitor; IL: interleukin; PSO: psoriasis; TNF: tumor necrosis factor.

Supplementary Table 2 HRs Estimating the Association Between Disease Factors at Follow-Up, Baseline Covariates, and Biologic Switch Over 30 Months Following Biologic Therapy Initiation

|	Unadjusted		Adjusted[a]	
	HR (95% CI)	p value	HR (95% CI)	p value
Disease Factors at Follow-Up[b]				
PASI ≤10 (DLQI >5 vs. DLQI ≤5)	5.07 (4.17, 6.16)	<0.001	5.25 (4.23, 6.51)	<0.001
PASI >10 (DLQI >5 vs. DLQI ≤5)	1.52 (0.96, 2.41)	0.076	1.70 (1.06, 2.71)	0.027
DLQI ≤5 (PASI >10 vs. PASI ≤10)	9.10 (5.97, 13.87)	<0.001	8.37 (5.42, 12.92)	<0.001
DLQI >5 (PASI >10 vs. PASI ≤10)	2.73 (2.08, 3.57)	<0.001	2.71 (2.04, 3.60)	<0.001
Baseline Covariates				
Baseline Age (10-Year Increase)	0.86 (0.81, 0.92)	<0.001	0.89 (0.82, 0.96)	0.002
Sex (Female vs. Male)	1.62 (1.35, 1.93)	<0.001	1.49 (1.23, 1.81)	<0.001
Race (white vs. Non-white)	1.67 (1.27, 2.18)	<0.001	2.00 (1.51, 2.64)	<0.001
Ethnicity (Hispanic vs. Non-Hispanic)	1.50 (1.01, 2.23)	0.043	1.25 (0.84, 1.87)	0.275
Employment Status (Full-Time vs. Not Full-Time)	0.79 (0.66, 0.94)	0.007	0.98 (0.81, 1.19)	0.863
PSO Duration (10-Year Increase)	0.84 (0.78, 0.90)	<0.001	0.91 (0.84, 0.99)	0.025
Disease Factors at Baseline				
PASI ≤10 (DLQI >5 vs. DLQI ≤5)	1.36 (1.11, 1.66)	0.003	0.76 (0.61, 0.94)	0.013
PASI >10 (DLQI >5 vs. DLQI ≤5)	1.30 (0.84, 2.03)	0.242	0.74 (0.47, 1.16)	0.193
DLQI ≤5 (PASI >10 vs. PASI ≤10)	0.80 (0.52, 1.23)	0.308	0.77 (0.50, 1.19)	0.243
DLQI >5 (PASI >10 vs. PASI ≤10)	0.77 (0.61, 0.97)	0.029	0.75 (0.59, 0.97)	0.026
BMI				
Overweight vs. Underweight/Normal	0.90 (0.67, 1.20)	0.462	1.18 (0.87, 1.59)	0.292
≥Class 1 Obese vs. Underweight/Normal	1.14 (0.88, 1.48)	0.321	1.20 (0.92, 1.58)	0.183
Concomitant Diseases (Any vs. None)	1.10 (0.90, 1.33)	0.307	1.08 (0.88, 1.32)	0.477
Study Period Indicator[c]				
Period 1–Period 2	1.85 (1.35, 2.55)	<0.001	1.65 (1.20, 2.29)	0.002
Period 1–Period 2	3.96 (2.86, 5.48)	<0.001	3.16 (2.26, 4.41)	<0.001
Period 2–Period 3	2.13 (1.77, 2.57)	<0.001	1.91 (1.58, 2.31)	<0.001
Biologic History (Experienced vs. Naïve)	0.97 (0.80, 1.19)	0.787	1.42 (1.15, 1.76)	0.001
Non-Biologic History (Experienced vs. Naïve)	0.66 (0.54, 0.80)	<0.001	0.73 (0.60, 0.90)	0.003
Topical Therapy History (Experienced vs. Naïve)	0.74 (0.40, 1.34)	0.315	0.70 (0.38, 1.30)	0.261
Phototherapy History (Experienced vs. Naïve)	1.58 (1.27, 1.96)	<0.001	1.60 (1.28, 2.00)	<0.001

[a]Model also included age, sex, race, ethnicity, duration of PSO, biologic experience, baseline PASI/DLQI category, BMI, employment status, and number of concomitant diseases, as well as biologic, non-biologic, topical, and phototherapy history (separately); [b]PASI/DLQI was measured at all eligible follow-up registry visits; all other characteristics were measured at biologic initiation (time-dependent measures such as BMI were available at follow-up, but were not considered as time-varying measures in this study); [c]The model adjusted for PASI/DLQI at baseline at the temporal period of initiation, which included Period 1 (April 15, 2015–June 13, 2017), Period 2 (June 14, 2017–February 28, 2020), and Period 3 (March 1, 2020–August 4, 2022). BMI: body mass index; CI: confidence interval; DLQI: Dermatology Life Quality Index; HR: hazard ratio; PASI: Psoriasis Area Severity Index; PSO: psoriasis.

Supplementary Figure 1 Patient Eligibility Flow Chart
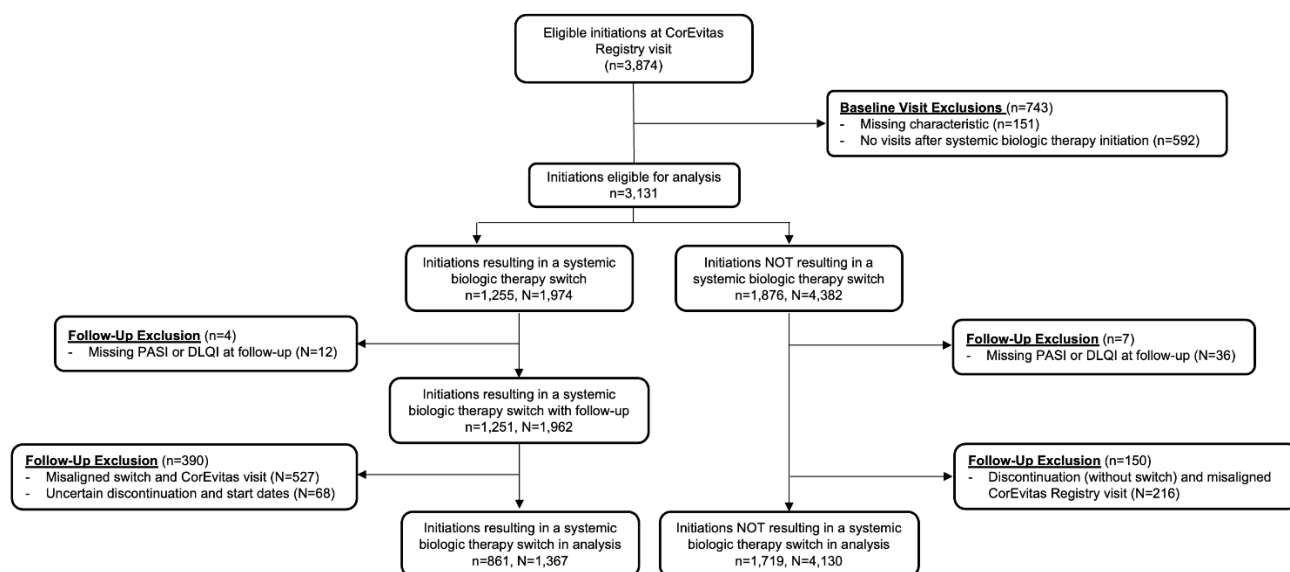
DLQI: Dermatology Life Quality Index; n: initiations; N: corresponding CorEvitas Registry visits; PASI: Psoriasis Area Severity Index.

Supplementary Figure 2 Study Design
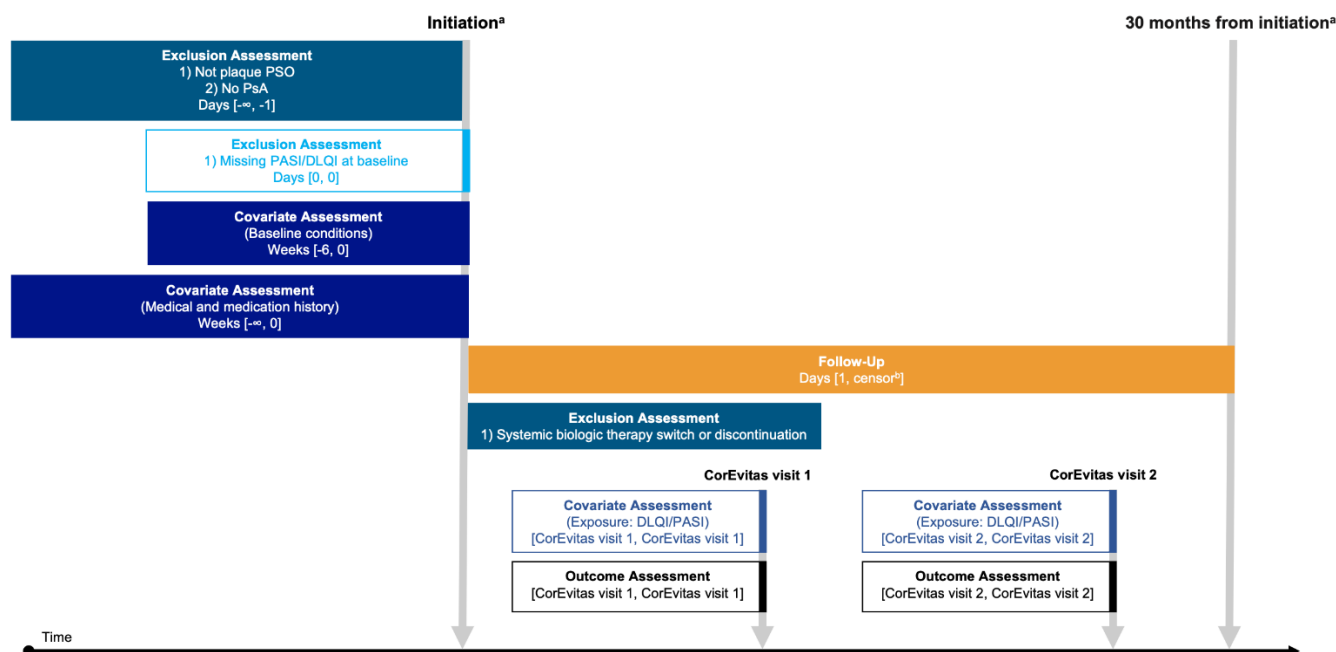
[a]Initiation is defined as the first use of any new biologic; [b]Each initiation was followed until there was a discontinuation/switch of the initial systemic biologic therapy, last registry follow-up, or 913 days (30 months) after initiation, whichever occurred first. DLQI: Dermatology Life Quality Index; PASI: Psoriasis Area Severity Index; PsA: psoriatic arthritis; PSO: psoriasis.