On-Label Persistence in Psoriasis After Switching to Guselkumab or Tumor Necrosis Factor Inhibitors from Other Advanced Therapies

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Background

Switching between psoriasis therapies is part of a management strategy to improve clinical outcomes, especially when a prior therapy has limited effectiveness or leads to an adverse reaction[1]

Evidence of guselkumab's (GUS) superior benefits compared to a commonly used subcutaneous tumor necrosis factor inhibitor (SC TNFi) adalimumab has been established; however, little is known about the relative performance of GUS versus SC TNFi in the subset of patients (pts) who switch to these therapies[2]

Persistence while receiving labeled dosing is a useful proxy for real-life drug performance, as poor performance may reflect either discontinuation or dose escalation[3]

Objectives

To compare real-world persistence among pts with psoriasis switching to treatment with US labeled dosing for GUS versus any SC TNFi

Methods

- Data from the IQVIA PharMetrics® Plus database were used (01/01/2016 - 12/31/2023)
- Index date was the first observed claim for GUS or SC TNFi after switching from another systemic advanced therapy
- Baseline period included the 12 months before the index date; follow-up period spanned the start of the maintenance phase until the earliest of end of data availability or end of continuous health plan eligibility
- The maintenance phase commenced, based on product label, at the time of a specific dose following initiation:
  - GUS: the 3rd dose
  - Adalimumab: the 2nd dose
  - Certolizumab pegol: the 4th dose
  - Etanercept: the 7th dose
  - Infliximab: the 4th dose

Study sample

Pts eligible for inclusion were/had:

- adults switching to GUS or SC TNFi during the intake period (i.e., 07/13/2017 - 06/30/2023) from another psoriasis-indicated advanced therapy
- naïve to both GUS and SC TNFi before the switch
- ≥12 months of continuous health plan eligibility before the index date
- ≥2 claims with a diagnosis of psoriasis vulgaris on separate dates during the baseline period or on the index date
- persistent on the index biologic (as defined below) between the index date and start of the maintenance phase
- no claims for rheumatoid or psoriatic arthritis, inflammatory bowel disease, or other autoimmune disorders during the baseline period

Outcomes and statistical analyses

- Overlap propensity score weights were used to balance baseline characteristics between the GUS and SC TNFi cohorts; balance was assessed using standardized differences (std. diff.; <10% considered well-balanced)[4]
- Persistence while receiving on-label US maintenance dosing was assessed from the start of the maintenance phase by weighted Kaplan-Meier (KM) analysis and Cox proportional hazard models
  - Persistence was defined as no gaps in treatment supply >120 days for GUS and infliximab (twice the 8-week maintenance dosing interval) or >60 days for adalimumab, certolizumab pegol, and etanercept (twice the typical dispensing interval of 4 weeks). A sensitivity analysis was conducted using a gap >120 days for all agents; the last day of index agent supply before the gap defined the discontinuation date
  - Continuing on labeled US maintenance dosing was defined as maintaining the following fixed doses: 100 mg/8 weeks for GUS, 40 mg/2 weeks for adalimumab, 50 mg/week for etanercept.
    For agents with weight-dependent dosing (i.e., certolizumab pegol and infliximab), the first maintenance dose was used as the reference dose; pts were censored at the first instance of any dose change
  - Pts who did not change dose or discontinue treatment during the follow-up period were censored on the last day of index treatment supply before the end of the follow-up period

Key Takeaways

- **Among pts with psoriasis who switched advanced treatments, those switching to GUS displayed higher persistence while receiving on-label dosing compared to those who switched to SC TNFi**
- **Findings were consistent across multiple gap length definitions and time points**
- **GUS may provide better long-term disease control than SC TNFi among pts who switch from other advanced therapies**

Results

1,037 pts were included in the GUS cohort and 345 pts in the SC TNFi cohort; characteristics at baseline were well-balanced

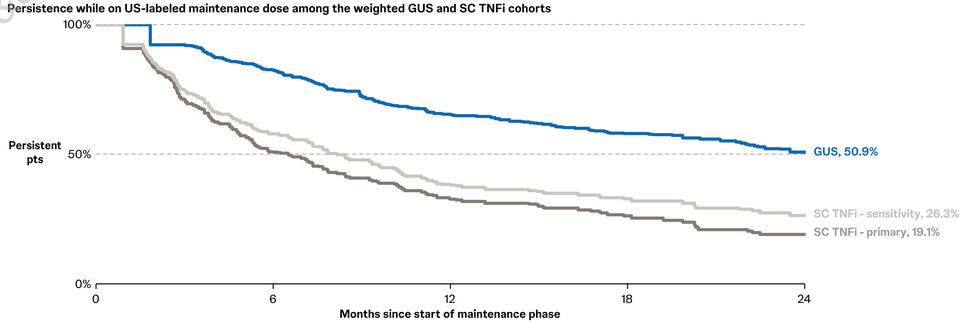
Weighted baseline characteristics	GUS[a] (N=1,037)	TNFi[a] (N=345)	Std. diff.[a] %
Demographics			
Age at index date (years), mean ± SD [median]	47.2 ± 11.9 [48.6]	47.2 ± 11.6 [48.7]	0.1
Female	54.7	54.7	0.0
Region of residence at index date			
South	47.0	47.0	0.0
Midwest	29.0	29.0	0.0
Northeast	16.7	16.7	0.0
West	7.3	7.3	0.0
Unknown	0.0	0.0	0.0
Payer			
Commercial	66.4	65.4	2.2
Self-insured	31.4	32.3	1.9
Medicare, Medicaid, or unknown	2.1	2.3	1.4
Index year			
2017	9.6	9.6	0.0
2018	19.1	19.1	0.0
2019	16.8	16.8	0.0
2020	14.7	14.7	0.0
2021	19.8	19.8	0.0
2022	13.3	13.3	0.0
2023	6.6	6.6	0.0

Weighted baseline characteristics	GUS[a] (N=1,037)	TNFi[a] (N=345)	Std. diff.[a] %
Characteristics			
Quan-Charlson comorbidity index, mean ± SD [median]	0.3 ± 0.8 [0.0]	0.3 ± 0.8 [0.0]	0.0
Common comorbidities			
Hypertension	33.1	31.9	2.6
Hyperlipidemia	31.1	30.1	2.2
Obesity	25.0	24.8	0.5
Index advanced therapy			
GUS	100.0	-	-
Adalimumab	-	79.9	-
Certolizumab Pegol	-	14.9	-
Etanercept	-	4.2	-
Infliximab	-	1.0	-
Advanced therapy being switched from			
Biologics	78.5	78.5	0.0
Ustekinumab	29.3	29.3	0.0
Secukinumab	23.1	26.0	6.6
Ixekizumab	13.3	10.7	7.8
Risankizumab	10.9	11.0	0.3
Tildrakizumab	1.6	1.5	0.7
Brodalumab	0.3	0.0	8.1
Small-molecule drugs	21.5	21.5	0.0
Apremilast	21.3	21.5	0.6
Deucravacitinib	0.2	0.0	6.8
All-cause pharmacy costs[b], mean ± SD [median]	45,947 ± 25,164 [45,202]	46,712 ± 27,491 [43,943]	2.9
All-cause medical costs[b], mean ± SD [median]	7,231 ± 13,969 [1,912]	6,465 ± 12,420 [1,635]	5.8

Data shown are % unless otherwise noted. [a]Cohorts were balanced using overlap propensity score weighting based on demographics, region, index year, prevalence of comorbidities, treatments, healthcare resource use and pharmacy and medical costs. [b]Healthcare costs are reported from a private payer's perspective in 2023 USD adjusted for inflation using the US Consumer Price Index. **SD**=standard deviation; **USD**=United States Dollar.

The GUS cohort demonstrated higher persistence than the SC TNFi cohort, specifically, while receiving on-label dosing; results were consistent in the sensitivity analysis

Persistence while on US-labeled maintenance dose among the weighted GUS and SC TNFi cohorts



	6 months	12 months	18 months	24 months
Pts at risk,[a] n (%)				
GUS	581 (56.0%)	327 (31.6%)	205 (19.8%)	135 (13.0%)
SC TNFi	133 (38.7%)	63 (18.3%)	42 (12.1%)	24 (6.8%)
SC TNFi: sensitivity	142 (41.0%)	66 (19.2%)	48 (13.8%)	29 (8.5%)
KM rate (95% CI)				
GUS	82.6 (77.1; 86.9)	65.4 (58.8; 71.3)	58.0 (50.2; 65.0)	50.9 (41.2; 59.7)
SC TNFi	51.0 (42.2; 59.2)	32.9 (23.4; 42.7)	26.2 (16.0; 37.4)	19.1 (8.5; 32.8)
SC TNFi: sensitivity	57.9 (49.0; 65.9)	38.4 (28.3; 48.3)	32.8 (22.2; 43.9)	26.3 (14.7; 39.5)
Hazard ratio (95% CI),[b] p-value				
SC TNFi	3.58 (2.84; 4.51), <0.001	2.90 (2.40; 3.51), <0.001	2.80 (2.33; 3.36), <0.001	2.79 (2.34; 3.33), <0.001
SC TNFi: sensitivity	2.96 (2.33; 3.77), <0.001	2.47 (2.02; 3.01), <0.001	2.35 (1.94; 2.84), <0.001	2.31 (1.92; 2.78), <0.001

[a]Pts who remained on-label persistent and had not been lost to follow-up at that point in time. [b]Hazard ratio >1 indicates that the GUS cohort was more persistent than the SC TNFi cohort. **CI**=confidence interval.

- Median time of persistence while receiving on-label dosing after switching was 24.9 months for the GUS cohort and 6.5 months for the SC TNFi cohort:
  - At 12 months after starting the maintenance phase, the GUS cohort displayed 190% greater persistence
  - At 18 months, the GUS cohort displayed 180% greater persistence
  - At 24 months, the GUS cohort displayed 179% greater persistence
- In a sensitivity analysis using the same exposure gap of >120 days to define persistence in both cohorts, median time to discontinuation while receiving on-label dosing remained the same for the GUS cohort and increased to 8.2 months for the SC TNFi cohort:
  - At 12 months after starting the maintenance phase, the GUS cohort displayed 147% greater persistence
  - At 18 months, the GUS cohort displayed 135% greater persistence
  - At 24 months, the GUS cohort displayed 131% greater persistence

Limitations

- Results may not be generalizable to uninsured pts, those with non-commercial or non-self-insured plans, or pts who do not continue treatment up to the maintenance phase
- Pharmacy prescription claims do not confirm actual administration of medication
- Unmeasured confounders may introduce bias to the results

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