Real-world economic outcomes associated with switching between biologics and biosimilars in immune-mediated inflammatory diseases

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Background

- Immune-mediated inflammatory diseases (IMIDs) represent a heterogeneous group of disorders characterized by acute or chronic inflammation with potentially disabling characteristics.[1] Biologics have transformed the management of IMIDs.
- As of March 2026, FDA has approved 14 biosimilars for adalimumab and infliximab.[2] Biosimilars offer the potential for reduced costs and expanded patients access to biologics; however, real-world evidence related to switching between biologics and biosimilars remains limited.

Objective

- The objective of this study is to evaluate real-world healthcare costs, healthcare resource utilization (HCRU), and treatment persistence associated with switching between biologics and biosimilars among patients with IMIDs.

Methodology

Study Design: Retrospective cohort study

Data source: Optum® Market Clarity Clinical and Claims database

Study Participants

- Adults (≥18 years) with ≥1 diagnosis claim for IMID between January 01, 2016 and June 30, 2025. IMIDs included rheumatoid arthritis (RA), Crohn's disease (CD), ulcerative colitis (UC), psoriatic arthritis (PsA), and ankylosing spondylitis (AS).
- Patients with ≥1 claim for adalimumab or infliximab biologic or biosimilar after the diagnosis between January 01, 2017 and June 30, 2024
  - **Switchers**: Patients who switched between biologic and biosimilar therapies; index date was defined as the date of first switch.
  - **Non-switchers**: Patients who remained on initial therapy; index date was defined as the date of first biologic/biosimilar prescription.
- Continuous enrollment with medical and pharmacy benefits for 12-month baseline and 12-month follow-up, with complete demographic information

Study Measures

- **Baseline characteristics:** Demographics and clinical characteristics, including Charlson comorbidity index (CCI), type of IMID, and prior medication use (NSAIDs, DMARDs, and corticosteroids)
- **HCRU and costs:** All-cause and IMID-related HCRU and healthcare costs
- **Treatment persistence:** Persistence at 3, 6, 9, and 12 months following index date

Statistical Methods

- Descriptive analyses summarized baseline characteristics, HCRU, costs, and persistence
- Per-patient-per-month (PPPM) all-cause and IMID-related HCRU and costs were assessed pre- and post-index
- Two sample t-test was used for significance testing.

FDA: Food and Drug Administration; NSAIDs: Nonsteroidal anti-inflammatory drugs; DMARDs: Disease-modifying antirheumatic drugs

Results

Figure 1: Patient attrition

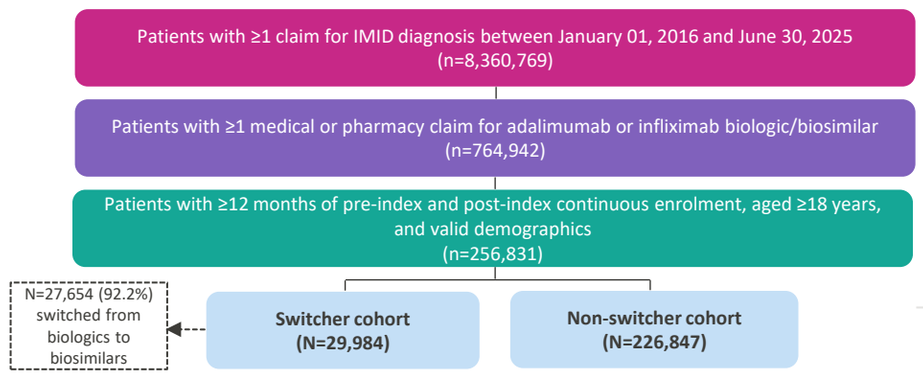
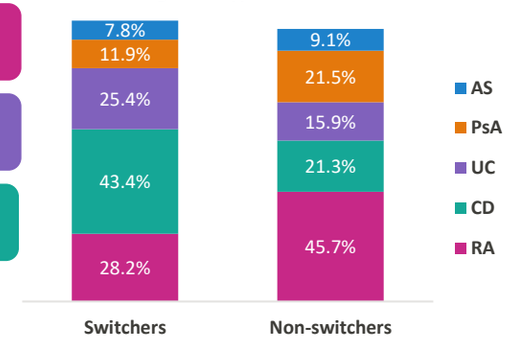


Figure 2: Type of IMID*



*Patients may have >1 IMID; p < 0.001 for all comparisons

Table 1: Baseline demographics and clinical characteristics

Demographics and Clinical Characteristics	Switcher cohort	Non-switcher cohort
Age, mean (SD)	46.5 (13.3)	49.6 (14.6)
Females (%)	57.5%	63.8%
CCI, mean (SD)	0.9 (1.3)	1.2 (1.4)
Obesity (%)	34.4%	35.9%
Dyslipidemia (%)	29.1%	34.2%
Type 2 Diabetes (%)	12.9%	16.5%
NSAIDs (%)	11.5%	13.1%
DMARDs (%)	37.5%	50.1%
Corticosteroids (%)	59.6%	68.1%
Time to switch, mean (SD)	26.2 (21.0)	-

p < 0.001 for all comparisons

Figure 3: Persistence rate in follow-up period

p < 0.001 for all comparisons

Figure 4: All-cause HCRU during follow-up period

*p < 0.05

Figure 5: All-cause healthcare costs during follow-up period

p < 0.001 for all comparisons

Conclusions

- Switching between biologics and biosimilars in IMID patients was associated with significantly lower healthcare costs, primarily driven by reduced pharmacy spending.
- Treatment persistence was higher among switchers, indicating that switching does not compromise treatment continuity.
- Overall, these findings suggest that biosimilar switching is a cost-efficient strategy while maintaining treatment continuity in IMID patients.

Limitations

- This study is limited by use of claims data, which may include coding inaccuracies, lack of clinical details, and limited generalizability beyond the insured U.S. population.

References: [1] Zhu, Xueping, MengliYue, XuZhang, et al. 2025. "Global Disease Burden of Immune-Mediated Inflammatory Diseases (IMIDs), 1990–2021."Med Research: 285–296; [2] United Stated Food and Drug Administration. Biosimilar Product Information. Accessed May 10 2026 from https://www.fda.gov/drugs/biosimilars/biosimilar-product-information