Specialty Medication Adherence Rates in Patients with Rheumatoid Arthritis across Health-System Specialty Pharmacies

Autumn D. Zuckerman, Josh DeClercq, Nicole Cowgill, Kate McCarthy, Brian Lounsbery, Rushabh Shah, Amanuel Kehasse, Karen Thomas, Louis Sokos, Martha Stutsky, Jennifer Young, Jennifer Carter, Monika Lach, Kelly Wise, Toby T. Thomas, Melissa Ortega, Jinkyu Lee, Kate Lewis, Jill Dura, Nick Gazda, Lana Gerzenshtein, Scott Canfield – *Health-Systems Specialty Pharmacy Outcomes Research Consortium*

Quick Facts

Evaluated

3,528
Patients who had ≥3 fills for bDMARDs

20
Health systems

Results

94% Median proportion of days covered (PDC) (adherence) for all sites

80% of patients had PDC >80% (PQA measure)

62% of patients with low PDC (<50%) had an appropriate reason for treatment gaps

Health-system specialty pharmacists enable high bDMARD adherence rates

bDMARD therapy gaps are often due to clinically appropriate holds

VANDERBILT HEALTH

Specialty Medication Adherence Rates in Patients with Rheumatoid Arthritis across Health-System Specialty Pharmacies

Autumn D. Zuckerman[1], Josh DeClercq[1], Nicole Cowgill[2], Kate McCarthy[3], Brian Lounsbery[4], Rushabh Shah[5], Amanuel Kehasse[6], Karen Thomas[7], Louis Sokos[8], Martha Stutsky[9], Jennifer Young[10], Jennifer Carter[11], Monika Lach[12], Kelly Wise[13], Toby T. Thomas[14], Melissa Ortega[15], Jinkyu Lee[16], Kate Lewis[17], Jill Dura[18], Nick Gazda[19], Lana Gerzenshtein[20], Scott Canfield[21] – *Health-Systems Specialty Pharmacy Outcomes Research Consortium*

VANDERBILT HEALTH

Background

- Adherence to disease-modifying antirheumatic drugs (DMARDs) is necessary to achieve reduced rheumatoid arthritis (RA) activity and improve radiologic outcomes.
- Quality and accreditation bodies have endorsed an adherence threshold of 80%, as measured by proportion of days covered (PDC), for non-infused biologics used for RA.
- Several studies have demonstrated variable real-world adherence rates ranging from 30% to 85%.[1]

Objective

Evaluate rates of adherence to biologic DMARDS and tofacitinib, measured by PDC, across multiple health-system specialty pharmacies.

Methods

Setting	• Integrated health-system pharmacies
Study Design	• Multisite retrospective cohort study • January 1, 2018 to December 31, 2018
Sample	• ≥3 fills for eligible biologic DMARDs written by a provider at one of the 20 participating health-systems • International classification of diseases code M05, M06, or M08 • Patients were excluded if there were multiple appropriate extended gaps where dates of gaps could not be quantified.
Data Collection	• Fill data was collected by each site using pharmacy records • Each site imported into a centralized, password-protected, HIPAA compliant data entry system. • Patients with an initial PDC ≤50% were reviewed for appropriate extended gaps in therapy including pregnancy, non-included biologic DMARD medication filled, allergic reaction, discordant administration directions and prescribed days' supply, and >3 months of any of the following: infections, drug holiday, use of samples, intravenous therapy, or external fills.
Analysis	• All fills for an included drug were combined to calculate a single PDC at the patient level. • Used a variable interval study time period in which PDC = days covered from index date to first day of last fill / total days between index date to the first day of the last fil or end of study time period. • The index date was defined as the first sold date that occurred within the study time period. • When an appropriate gap in therapy was identified, fill dates were adjusted to remove the appropriate gap in the denominator of PDC calculation so that the PDC would not be underestimated.

Results

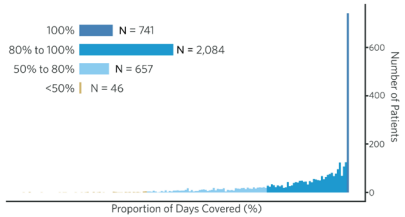
Table 1. Patient Characteristic (N=3,528)

Patient Characteristic	% (n)
Age (Mean ± SD)	51 ± 17
Gender	
Female	75% (2,647)
Male	25% (880)
Unknown	0% (1)
Indication	
Rheumatoid arthritis (RF +)	37% (1,306)
Rheumatoid arthritis (RF -)	66% (2,344)
Juvenile idiopathic arthritis	9.7% (343)

Table 2. Medications by Fill (N=29,900)

Fill Information	% (n)
Medication	
abatacept	10.3% (3,082)
adalimumab	33.3% (9,963)
certolizumab	3.5% (1,046)
etanercept	31.3% (9,354)
golimumab	2.0% (587)
tocilizumab	4.7% (1,408)
tofacitinib	14.9% (4,460)
Insurance type	
Commercial	53.5% (15,984)
Medicaid	18.8% (5,614)
Medicare	27.1% (8,102)
None	0.2%(60)
Other	0.4%(106)
Tricare	0.1%(34)
Switch during study period	14%(475)
Number of switches	
0	86.5% (3,053)
1	11.6% (408)
2	1.5% (54)
3	0.3% (11)
4	0.1% (2)

Figure 1. Adherence, Measured by PDC



Adherence rates are displayed after adjusting PDCs for patients with appropriate gaps in patients with a PDC <50% as documented in Figure 2.

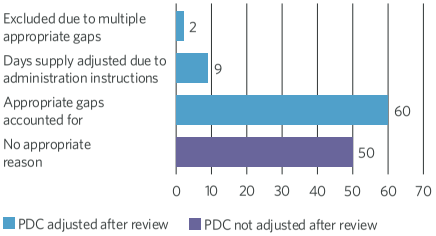
Median PDC for all sites was 94% (IQR 83, 99)

21% of patients had a PDC of 100% during the study period

80% of patients had a PDC >80%

0.2% of patients had a PDC <50%

Figure 2. Reasons for Initial PDC <50% (N=121)



62% of patients with a PDC <50% had an identifiable reason for gaps in therapy

Most appropriate gaps were due to clinically-appropriate holds in therapy (85%)

Less commonly, patient administration instructions differed from the pharmacy claims' days supply (13%)

Conclusions

- Higher rates of adherence to biologic DMARDs were seen across 20 health-systems specialty pharmacies than what has been reportedin previous literature, demonstrating the benefits of health-system specialty pharmacies in helping patients with RA remain on effective therapies.
- Patients with low PDC commonly had appropriate reasons or explanations for apparent gaps in therapy, which may limit the utilityof PDC alone to accurately represent true medication adherence.
- Few patients required a change in therapy during the study time period, potentially a result of high touch points from the integrated health-system model. Further research is needed to better understand this finding.

[1]Vanderbilt University Medical Center; [2]CHS Specialty Pharmacy Service at Atrium Health; [3]University of Rochester Medical Center; [4]Avera Specialty Pharmacy; [5]University of Kentucky; [6]Boston Medical Center Health System; [7]University of Utah Health; [8]West Virginia University Health System; [9]Yale New Haven Health System; [10]Wake Forest Baptist Health; [11]Medical University of South Carolina; [12]University of Chicago Medicine; [13]Nationwide Children's Hospital; [14]Hospital of The University of Pennsylvania; [15]Tufts Medical Center; [16]Beth Israel Deaconess Medical Center; [17]Froedtert & The Medical College of Wisconsin; [18]Cleveland Clinic; [19]Core Health; [20]Excellerx Corp; [21]Johns Hopkins Home Care Group

Zuckerman AD, DeClercq J, Choi L, Cowgill N, McCarthy K, Lounbery B, Shah R, Kehasse A, Thomas K, Sokos L, Stutsky M, Young J, Carter J, Lach M, Wise K, Thomas TT, Ortega M, Lee J, Lewis K, Dura J, Gazda NP, Gerzenshtein L, Canfield S. Adherence to self-administered biologic disease-modifying antirheumatic drugs across health-system specialty pharmacies. Am J Health Syst Pharm. 2021 Aug 18;zxab342. doi: 10.1093/ajhp/zxab342. Epub ahead of print. PMID: 34407179; PMCID: PMC8385960

REFERENCE: Murage, M. J, et al. (2018). "Medication adherence and persistence in patients with rheumatoid arthritis, psoriasis, and psoriatic arthritis: a systematic literature review." Patient Preference And Adherence 12: 1483-1503