Adherence to Disease-Modifying Anti-Rheumatic Drugs In Patients in an Integrated Clinic and Specialty Pharmacy

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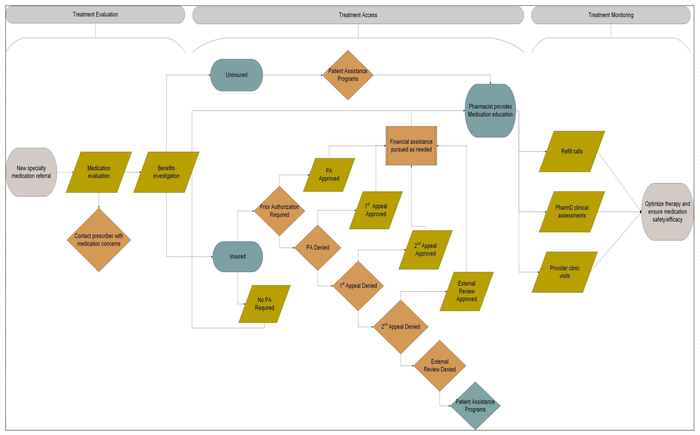
BACKGROUND

- Adherence to disease-modifying anti-rheumatic drugs (DMARDs) is associated with reduced rheumatoid arthritis (RA) disease activity and better radiological outcomes[1]
- Adherence to DMARDs is low, ranging from 30 to 85%[2]
- Older age, male gender, treatment non-naivete, and lower out-of-pocket costs have been associated with higher adherence[2]
- Health-systems integrated specialty pharmacy models have been shown to improve medication adherence in other specialty diseases[3]

Objective: Evaluate rates and predictors of adherence to DMARDs within a health-system integrated specialty pharmacy

Figure 1: Vanderbilt Integrated Specialty Pharmacy Model



METHODS

DESIGN: Single center, retrospective cohort

SAMPLE: Adults with RA treated at Vanderbilt Rheumatoid Arthritis Clinic who filled 3+ DMARD prescriptions from Vanderbilt Specialty Pharmacy between July 2016 and June 2017

OUTCOME: Medication adherence, measured as proportion of days covered (PDC)

ANALYSIS: Descriptive statistics to summarize data and proportional odds logistic regression to assess associations between patient characteristics and PDC

RESULTS

- Median PDC was 0.94 (IQR=0.82-0.99, mean ± SD = 0.87 ± 0.17)
- In multiple regression analyses, PDC was significantly higher in male and treatment naïve patients (table 2)

RESULTS

STUDY SAMPLE

Table 1: Sample Characteristics (*n*=231)

Characteristic	% (*n*)
Gender (% female)	78% (179)
Race (% White)	90% (207)
Treatment naivete* (% naïve)	24% (55)
Financial assistance use	71% (163)
Insurance category	
Commercial	64% (148)
Government	36% (83)
Prescribed DMARD**	
Etanercept	41% (100)
Adalimumab	38% (93)
Abatacept	11% (26)
Tofacitinib	6% (15)
Certolizumab	4% (9)
Tocilizumab	<1% (1)

*Naivety: no pharmacy claim for a DMARD within the previous 6 months
**DMARD=disease modifying anti-rheumatic drug

ADHERENCE RATES AND PREDICTORS

Figure 2: Adherence Distribution

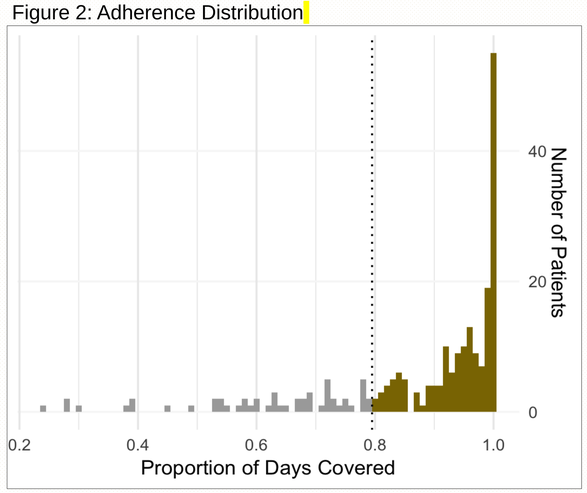


Figure 3: Median and Interquartile Range of PDC by Patient Characteristics

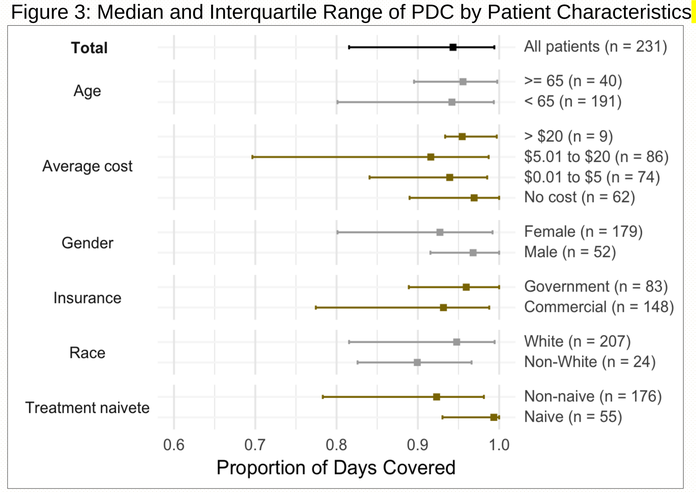
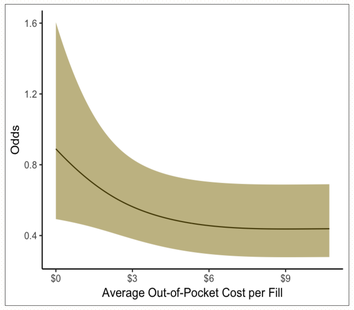


Table 2: Predictors of Higher Adherence (as Measured by PDC)

Variable	Odds Ratio	95% CI	p-value
Age (per 1 year)	1.01	0.98, 1.03	0.672
Female Gender (ref=Male)	0.47	0.27, 0.83	***0.009***
White Race (ref=non-White)	1.48	0.70, 3.15	0.312
Government Insurance (ref=Commercial)	1.20	0.66, 2.18	0.558
Non-naïve to Treatment (ref=naïve)	0.28	0.16, 0.50	***<0.001***
Average Costs	See Figure 4		

- Males were 2.13 times more likely than females to achieve higher PDC
- Treatment naïve patients were 3.56 times more likely than non-naïve patients to achieve higher PDC

Figure 4: Association Between Adherence and Cost



- Higher out-of-pocket costs associated with lower PDC, controlling for other variables
- Odds of having high PDC vs. low PDC nonlinearly decrease as out-of-pocket costs increase (e.g., 0.89 at $0, 0.48 at $5, 0.44 at $10)

FINANCIAL OUTCOMES

Figure 5: Frequencies of Financial Assistance Use and Average Out-of-Pocket Costs per Fill

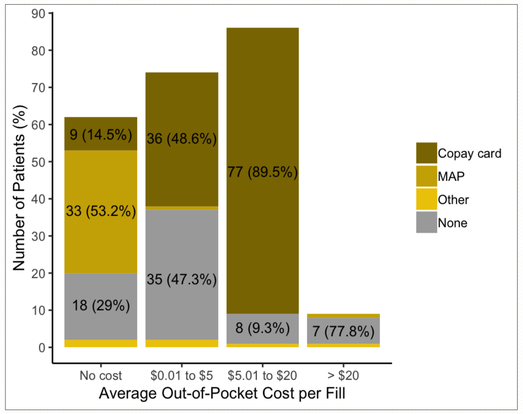
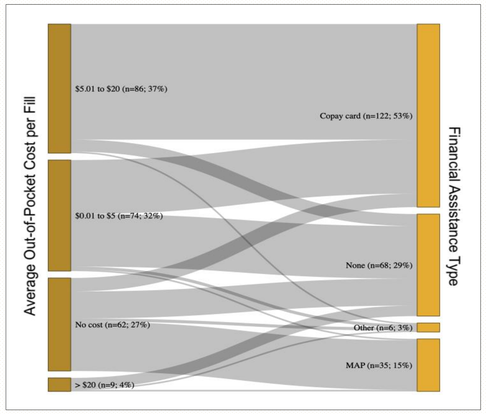


Figure 6: Average Out-of-Pocket Cost per Fill and Financial Assistance Distribution



- Average patient out-of-pocket cost was $19.50 (SD=$96.00) and 27% paid $0.00, while only 4% paid more than $20
- 71% of the sample received financial assistance (54% received copay card, 16% received medication assistance program, 1% received other type of assistance)

CONCLUSIONS

- High rates of adherence to DMARDs were seen in a health-system integrated specialty pharmacy model
- Most patients received financial assistance to reduce out-of-pocket costs, which might contribute to high adherence
- Female patients and treatment non-naïve patients may be at higher risk for treatment non-adherence
- Further research is needed to quantify associations between specialty pharmacy interventions, DMARD adherence, and favorable clinical outcomes in patients with RA

REFERENCES

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DISCLOSURES

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