Abstract # 0601

The “Why” of Drug Discontinuation; Clinical Review of EMR Notes for 2,545 Patients with Rheumatic Diseases

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1. Background

Persistence on therapy is an important consideration in rheumatic diseases, where multiple treatment options exist and the placement of treatment in the patient care plan may influence long term disease management. While possible reasons for discontinuation may be inferred from fielded data, when present, in EMR, claims, or specialty pharmacy records, the actual reasons may be different. Here, we reviewed open text notes within the EMR to understand the context of care, focusing initially on why drugs are discontinued for patients with different rheumatic diseases.

2. Methods

The ARN-TRIO Rheumatology registry contains EMR (fielded and open text), lab, procedure, infusion, medical claims, and specialty pharmacy data generated in care of >75,000 patients by ARN, a network of independent practices with >200 rheumatologists across the US. Data present in open text notes are extracted by clinically trained scribes who review the full patient histories for each patient and collect supplemental information into customized data forms. The collected data undergo a two-level audit process. Open text notes assessed were those specific to patients who discontinued csDMARD and/or targeted immune modulating drugs (TIM) between 2015 to 2019. Only the last discontinuation event per patient drug was considered for this study. Comparisons were made using chi-square with column proportions compared by z-test.

3. Results

Open text notes were reviewed for 2,545 patients receiving 3,616 distinct regimens for which 4,027 drugs were discontinued. Study population characteristics are provided in TABLE 1 and discontinuations by drug class/target are provided in FIGURE 1. Reasons for discontinuation differed by drug type. [FIGURE 2] Lack or loss of efficacy was listed as the predominant reason for TIM discontinuation (53%) while perceived association with 1 or more medical conditions (symptom) was most commonly indicated for csDMARDs (44%). Systems indicated when discontinuation was associated with a symptom were numerous though gastrointestinal, dermatologic, and constitution were most common. [FIGURE 3] To assess alignment of fielded data with recorded discontinuation reasons within the notes, we examined disease activity scores (RAPID3 or CDAI [DAS]) closest but preceding drug discontinuation for the subset of patients with RA. Of 2780 drug discontinuations, DAS were recorded for 73% (2042); 68% (1891) within 6 months prior to discontinuation. For TIM but not for csDMARD discontinuations, DAS scores were significantly different for those indicated as “lack of loss of efficacy” v. not. [FIGURES 4, 5] Approximately 15% (TIM) or 16% (csDMARD) of discontinuations listed as “lack/loss of efficacy” had near remission or low DAS.

4. Summary

Data derived from open text notes offer important insights into care for rheumatic diseases that often is not available in defined fields. While actual reasons for discontinuation may be directly aligned with recorded data in the EMR, the lack of fielded data for 30% of evaluated discontinued drugs limits understanding of what drives drug discontinuation. In addition, reported data that would on the surface appear at odds with the discontinuation reason suggests that other measures or input may contribute to how physicians or patients define efficacy. This combination of ongoing chart review along with full data extraction are necessary to understand care.

TABLE 1: Study Population Characteristics

No. (%) unless indicated	Drug discontinuations (n=4027)	Distinct Patients (n=2545)
Female	3053 (76%)	1918 (75%)
Age - mean (range)	56 (18-89)	57 (18-89)
Race		
Black	452 (11%)	347 (14%)
White	2324 (58%)	1325 (52%)
Other	50 (1%)	41 (2%)
Not provided	1201 (30%)	832 (33%)
Payer		
Commercial	2414 (60%)	1493 (59%)
Medicaid	193 (5%)	142 (6%)
Medicare	1262 (31%)	863 (34%)
Other	78 (2%)	51 (2%)
Unspecified	80 (2%)	63 (2%)
Diagnosis		
Ankylosing spondylitis	154 (4%)	106 (4%)
Systemic lupus erythematosus	133 (3%)	92 (4%)
Psoriatic Arthritis	773 (19%)	474 (19%)
Rheumatoid Arthritis	2780 (69%)	1706 (67%)
Sjogren's syndrome	268 (7%)	177 (7%)

FIGURE 1: Discontinuations (n) by Drug Class/Target

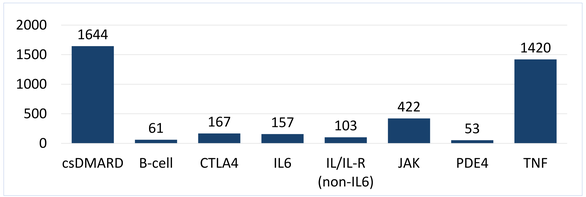


FIGURE 2: Reasons for Discontinuations (Overlapping)

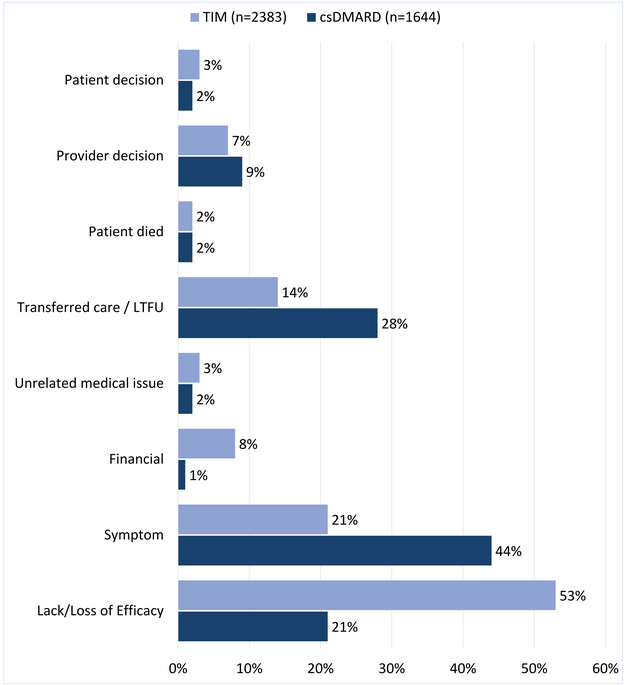


FIGURE 3: Subset of Discontinuations due to Symptoms

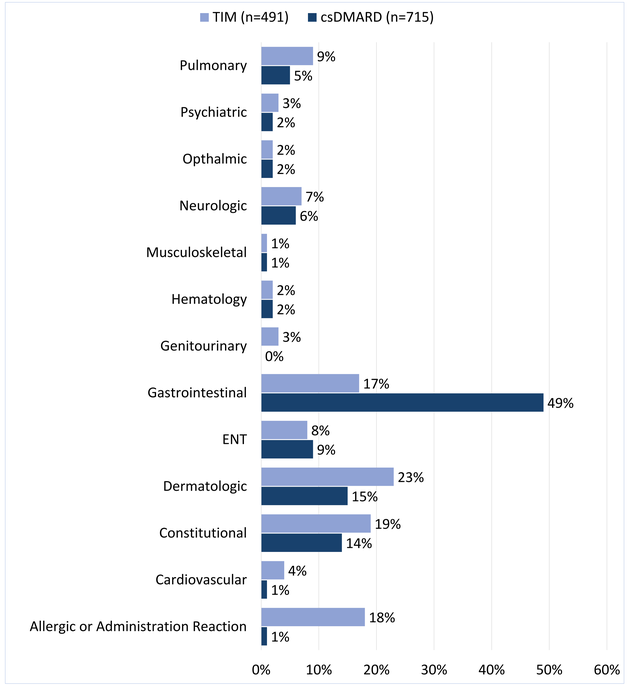


FIGURE 4: csDMARD Discontinues (RA); DAS Distribution

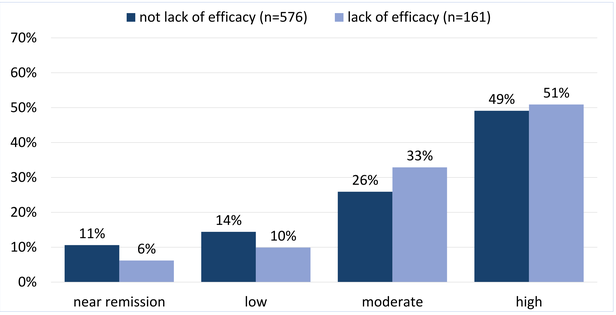
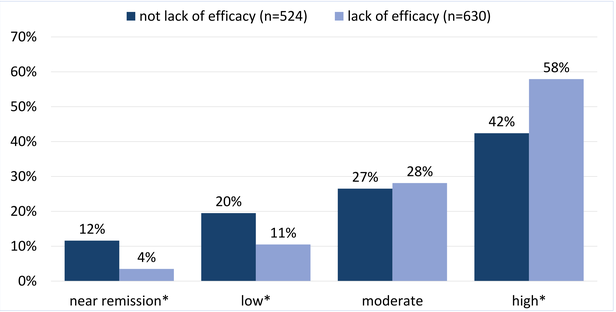


FIGURE 5: TIM Discontinues (RA); DAS Distribution



*proportions are significantly different (p<0.05)

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