Patient Reported Outcomes and Changes in DMARD Therapy for Rheumatoid Arthritis in Routine Clinical Practice

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Background

- The introduction of new disease-modifying antirheumatic drugs (DMARD) has resulted in dramatic improvements in the treatment of rheumatoid arthritis (RA), and made clinically meaningful improvements in physical function and quality of life, an achievable goal for many patients
- Several studies in RA demonstrate that treating to a target improves outcomes
- Patient reported outcomes (PRO) are increasingly used to assess progress from the patient's perspective and to facilitate clinical decision-making
- The RAPID3 includes a subset of core variables found in the Multi-dimensional HAQ (MD-HAQ) and includes an assessment of physical function and a patient global assessment for pain and global health **www.rheumatology.org/Portals/0/Files/RAPID3%20Form.pdf**
- RAPID3 is one of 6 RA disease activity measures endorsed by the *American College of Rheumatology* to facilitate clinical decision-making in practice

Objectives

To examine the role of patient reported outcomes as assessed by the RAPID3 in guiding therapy in RA in routine clinical practice.

Methods

- Analyses were conducted using the OM1 RA Data which included electronic medical record (EMR) data (from a specialized rheumatology EMR) on a large cohort of patients diagnosed with RA (defined as 1 occurrence of a RA diagnosis) from rheumatology practices across the US
- This analysis included 64,603 patients on DMARD seen between January 2013 and June 2016
- We chose RAPID3 as the PRO as it was the most commonly used measure
- Patients were categorized into those with 0 or 1 RAPID3 measures during the study period and those with 2 or more RAPID3 measures and changes in DMARD therapies were compared between the two groups
- We also compared pre-DMARD change (30 days prior to switch) RAPID3 scores to post-DMARD change (within 3 months after switch) scores using a general linear model
- Data were censored at 24 months after the first DMARD recorded in the database to adjust for differences in follow-up

Conclusions

Rheumatologists that routinely monitor PROs in clinical practice appear to use that information to guide DMARD therapy in patients with RA. PROs provide an efficient and effective measure of the impact of disease and treatment on functional status, pain, fatigue, and psychological status-outcomes that are most important and relevant from a patient's perspective. PROs facilitate continuous quality improvement in routine clinical practice.

Implications

Integrating PROs into routine clinical care can:

1. **Provide objective measures for monitoring progress e.g. trending of individual scores, detecting outliers, and identifying patients who will benefit from care plans**
2. **Be a tool for patient education and shared decision-making**
3. **Improve accountability of care**
4. **Focus that care on those who will benefit the most as part of a best practice plan**

Results

- The analysis population was geographically [Figure 1] and demographically representative with 76% female, 24% male, and mean (SD) age of 64 (14) years [Figure 2]
- During the study period, there were 32,595 changes in DMARD therapy among 24,021 patients
- 51% of physicians collected RAPID3s on at least 25% or more of their patients
- Patients with ≥2 RAPID3 measurements (n=4,846) were more likely to have a DMARD change than patients with ≤1 measurement (n=59,757; 50% vs. 36%, p<0.001 by Chi square test) [Figure 3]
- RAPID3 scores reported in the 30 days prior to a change in DMARD therapy (mean±SD=4.4±2.3) were worse than scores reported at Month 3 (3.8±2.3, p<0.001), Month 6 (3.8±2.3, p<0.001), and Month 12 (3.7±2.3, p<0.001) after therapy change [Table 1]
- The same trend was observed in median RAPID3 scores (4.6, 3.8, 3.8, 3.7 at baseline, Month 3, Month 6 and Month 12, respectively) [Figure 4]
- In a mixed model, with time in months as a fixed effect and patients as a random effect, patients with changes in DMARD therapy had worse RAPID3 scores than those who did not have change in DMARD (p<0.001)

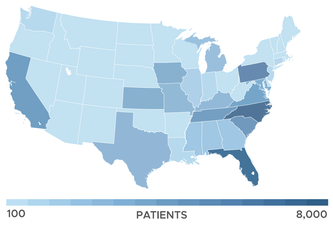

Figure 1. Representative Geographic Distribution

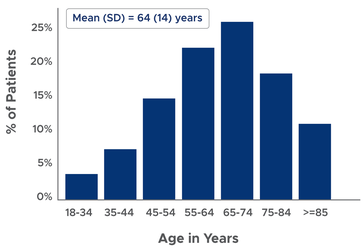

Figure 2. Representative Age Distribution

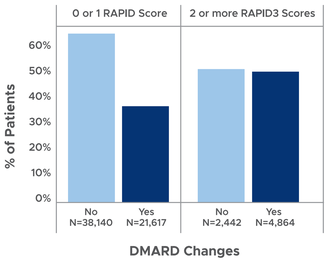

Figure 3. Correlation Between Frequency of PRO Assessments and Changes in DMARD Therapy

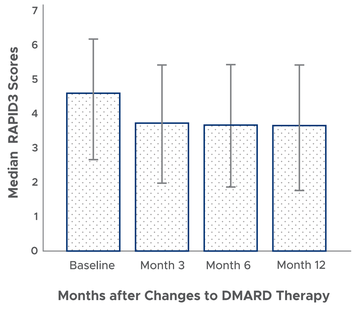

Figure 4. RAPID3 scores are lower at 1 year following change in DMARD compared to baseline *(Baseline is 30 days prior to change; vertical bars represent interquartile ranges)*

Time	N	Mean (SD)	95% CI	Q1	Median	Q3
Baseline	1,475	4.4 (2.3)	4.3-4.5	2.7	4.6	6.2
Month 3	3,089	3.8 (2.3)	3.7-3.9	2.0	3.8	5.5
Month 6	3,530	3.8 (2.3)	3.7-3.9	1.9	3.8	5.5
Month 12	3,380	3.7 (2.3)	3.6-3.8	1.8	3.7	5.5

Table 1. RAPID3 scores before and after DMARD changes