



Advancing High Performance Health

AMGA Foundation

A photograph showing a healthcare professional in blue scrubs holding the hand of an elderly patient. The professional's hand is on top, and the patient's hand is on the bottom. A stethoscope is visible around the professional's neck. The background is a blurred hospital setting with white curtains and a green chair.

Best Practices in Managing Patients with Rheumatoid Arthritis

University of Rochester

Adding Patient Reported Outcome Measures



Organizational Profile

Strong Memorial Hospital is a large tertiary care center located in Rochester, New York. The hospital was established in 1925 and is the main teaching hospital and patient care facility at the University of Rochester. The medical center has 781 beds and employs more than 1,200 physicians. The Division of Allergy, Immunology and Rheumatology has eight physicians, five fellows (physicians in training to become specialists), and one nurse practitioner. It also has two clinic sites in addition to the main hospital. It is the largest rheumatology group in western New York and services more than 12,000 patients a year.

Project Summary

The Division of Allergy, Immunology and Rheumatology established an early arthritis clinic (EAC) for patients with inflammatory arthritis in 2005, one of the first nationally recognized early RA clinics in the country. This clinic was established with the purpose of developing state-of-the-art methods and utilizing them to make early diagnoses of RA and other inflammatory arthritides, thereby providing early treatment for patients with RA. In addition to routine blood tests and x-rays, musculoskeletal ultrasound was used to help make an early diagnosis of RA. Over the next few years, outcome measures such as the DAS-28, the CDAI, and the SDAI were incorporated into the EHRs to consistently capture and assess the benefits of early treatment.

The Collaborative with the AMGA Foundation was initiated with the goal of adding patient reported outcome measures (PROMs), specifically the RAPID 3. Helping to make this decision was the increased evidence that the systematic use of information from PROMs leads to better communication and decision-making between doctors and patients, improving patient satisfaction with care.¹⁻⁶ The division of Allergy, Immunology and Rheumatology also aimed to develop a dashboard/report card that in addition to patient outcome

measures would include standardized protocols for monitoring patients on DMARDs and biologic therapies: purified protein derivative (PPD) reports, hepatitis panel, and immunization records all on one page.

Program Goals and Measures of Success

The goals of the EAC were to facilitate early access for patients with inflammatory arthritis, thereby helping to make an early diagnosis of RA and start DMARD therapy early. The Collaborative allowed the division of Allergy, Immunology and Rheumatology to add to the above scope of the EAC. The division aimed to develop the means to utilize and capture outcomes measures in the EHR. Additionally it planned to develop safety measures and a checklist on EHR for patients on DMARDs and biologic therapies

Population Identification

The Division of Allergy, Immunology and Rheumatology has eight physicians, five fellows, and a nurse practitioner accounting for 6.0 clinical FTEs. In addition to the two hospitals that care for in-patient needs, the Division has two clinical sites. As the largest rheumatology group—and given that it is a University-based tertiary practice—the Rheumatology Division at the University of Rochester has a large catchment area extending across western New York, as well as eastern and northern Pennsylvania with a population of over 2.5 million people. Patients are referred to the clinic by primary care physicians, family care physicians, several medical and surgical specialties, and other healthcare providers.

The EHR is used to facilitate all referrals from within the university. Flowsheets were developed to capture the multiple outcome measures and ultrasound scores within our EMR.

These outcome measures and ultrasound scores are currently used to assess and help manage all patients attending the early RA and the established RA clinic.

Intervention

Primary care offices have been made aware of the EAC and can refer patients directly to the clinic. Primary care providers meanwhile have been educated on appropriate referrals to this clinic based on the following criteria:

1. Patients with pain and/or swelling of small joints of hands and/or feet
2. Positive rheumatoid factor (RF) and/or anti-citrullinated peptide (CCP)
3. A positive squeeze test- hands or feet

Additionally, there is another clinic dedicated to seeing patients with RA. This second clinic is mainly for patients with an established diagnosis of RA but does include new RA patients when required. These clinics have developed protocols for the assessment and comparison of various remission measures: DAS 28, CDAI, and SDAI. Patients with RA on biologic therapies are offered, and urged, to get PPD tests every two years. The EHR is then used to monitor compliance. Similarly, vaccinations are monitored on a yearly basis and recommendations are made accordingly. The program was modified to incorporate the use of RAPID 3 and a flowsheet was developed in the EHR to record and view all of the above outcome measures as well as ultrasound scores. The staff was educated on the need to collect the patient reported outcomes in these specialized clinics. Necessary modifications were made to the workflow to accommodate the added time and personnel required for these changes.

Leadership Involvement & Support

The project was discussed with and received the support of the faculty Division Chief. The Nurse Manager was recruited to help train the medical assistants and help make necessary changes to the workflow.

Project Accomplishments/ Success Stories

The addition of a flowsheet to include RAPID 3 and ultrasound scores was successfully implemented earlier this year. The material gathered was analyzed and submitted as an abstract to the Annual National Rheumatology Conference. This was accepted and presented as a poster at the American College of Rheumatology meeting in San Francisco held in November 2015.

Lessons Learned and Ongoing Activities

There were several challenges to project's implementation. While a lack of IT support was the largest impediment, another major difficulty was getting physician buy-in. Despite the agreement of the faculty to support the project, most physicians blamed the absence of time and the lack of an incentive to add PROMs to their daily workload. It was noted that the physicians in the Collaborative were major users of the new tools on the EHR for outcome measures.

The important lessons learned were to align the project with that of the parent institution, in this case the university's mission and projects. Ensuring buy-in from all those involved would be another lesson. Education of those involved with ongoing updates on the project and regular feedback may have helped get additional involvement from other physicians.

Based on these lessons, the University of Rochester Medical Center plans on implementing a new tool to gather patient related outcomes. The institution has adopted the Patient Reported Outcomes Measurement Information System (PROMIS), a computer tablet-based patient questionnaire. The use of this tool not only aligns us with the hospital projects but also takes away physician effort and time as the data can be gathered on a mobile device from the patient and transferred directly to the EHR.

Acronym Legend

CDAI: Clinical Disease Activity Index

DMARD: Disease-Modifying Anti-Rheumatic Drug

HAQ: Health Assessment Questionnaire

MDHAQ: Multi-Dimensional Health Assessment Questionnaire

PQRS: Physician Quality Reporting System

RAPID 3: Routine Assessment of Patient Index Data 3

SDAI: Simple Disease Activity Index

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Ultrasound Score of Dominant Hand in Patients with Rheumatoid Arthritis Correlates with DAS-28CRP, CDAI and SDAI but not RAPID-3

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Background: Musculoskeletal ultrasound (MUS) allows for direct visualization of diverse pathologic features such as cortical bone erosions, synovial thickening, and synovial vascularity in the joints affected by rheumatoid arthritis (RA) with high sensitivity, specificity, and accuracy. Additionally, MUS is a useful and highly sensitive tool for the evaluation of joint involvement in RA. However, disease activity in RA is currently measured using traditional clinical measures such as disease activity scores (DAS-28), Clinical Disease Activity Index (CDAI), Simplified Disease Activity Index (SDAI) and Routine Assessment of Patient Index Data (RAPID-3). The correlation between the measures of clinical disease activity and ultrasound scores is not well studied.

Objective: The aim of this study was to assess the correlation of different clinical scoring systems with standardized semi-quantitative US scoring.

Methods: This was a single center study of patients from the RA clinic at the University of Rochester. The DAS-28CRP, CDAI and SDAI are collected as a standard of care in an established RA clinic. As part of a new initiative, RAPID 3 and MUS were recently offered to all RA patients seen in this clinic. Clinical measures were done by AA and LGM and MUS by RT and BM. MUS was done using a GE Logiq (2014 model) and the following joints were assessed for activity on gray scale and power Doppler: dorsal wrist, 2nd, 3rd, 4th and 5th MCPs and the 2nd, 3rd, 4th and 5th PIP. MCP joints 2-5 were scanned from a dorsal aspect, and PIP joints 2-5 were scanned from a volar aspect. The scans were retrospectively scored for presence of synovitis on gray scale and Power Doppler (PD) (0=none; 1=mild; 2=moderate and 3=severe) with a total score ranging from 0-54.

Results: A total of 20 patients volunteered to date for both the clinical and ultrasound assessments. This cohort comprised 11 females and 9 males, of which 17 were sero-positive patients, 11 had erosive disease and a median age of 62. Scores for all parameters were available for 18 subjects. A total of 11 patients were in remission based on DAS28, 3 had LDA, 3 had moderate disease activity and 1 was with severe disease activity. Similarly 6 patients were in remission based on CDAI, 7 were with LDA, 4 had moderate and 1 severe disease activity scores. By SDAI criteria, we recorded 7 in remission, 7 with LDA, 3 with moderate and 1 with severe disease activity. Based on RAPID-3, only 4 were in remission, 4 had LDA, 3 moderate and 7 had severe disease activity. The median MUS scores for those with remission, LDA, moderate and severe disease activity by the various clinical criteria are shown in Table 1.

Conclusion: MUS of the dominant hand of patients with RA can provide an easy, inexpensive and accurate measure of disease activity in RA patients. MUS will additionally provide the ability to visualize joint damage.

Table 1: Median MUS scores for each level of clinical disease activity

	Remission	LDA	Moderate	Severe
DAS-28CRP	1	5	7	24
CDAI	2	4	9	24
SDAI	0.5	4.5	11	24
RAPID-3	0	3	9	6

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