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A proposed continuous quality improvement approach to assessment and management of patients with rheumatoid arthritis without formal joint counts, based on quantitative Routine Assessment of Patient Index Data (RAPID) scores on a Multidimensional Health Assessment Questionnaire (MDHAQ)

Theodore Pincus* MD
Director of Outcomes Research
NYU Hospital for Joint Diseases, 301 East 17 Street, New York, NY 10003, USA

Yusuf Yazici MD
Assistant Professor of Medicine
NYU Hospital for Joint Diseases, New York, USA

Martin Bergman MD
Chief of Rheumatology
Taylor Hospital, Ridley Park, Pennsylvania, USA

Ross Maclean MD
Bristol-Myers Squibb, Princeton, New Jersey, USA

Timothy Harrington MD
The University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA

* Corresponding author. Tel.: +1 212 598 6518; Fax: +1 212 598 6582.
E-mail address: tedpincus@gmail.com (T. Pincus).

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A continuous quality improvement approach is proposed for the assessment and management of patients with rheumatoid arthritis (RA) based on scores on a one-page patient self-report multidimensional health assessment questionnaire (MDHAQ), without formal joint counts. The approach includes five simple steps before the patient is seen by the physician: (1) an MDHAQ is completed by every patient at every visit; (2) scores are calculated for patient function, pain, and global estimate, with options for a self-report joint count and other scales; (3) scores are entered on flow sheets with data from prior visits, which might also include laboratory and medication information; (4) scores are compiled into an index termed Routine Assessment of Patient Index Data (RAPID), analogous to a Disease Activity Score (DAS); (5) RAPID scores are classified to guide treatment decisions. RAPID 3 includes the three patient-reported outcome (PRO) measures in the RA Core Data Set – physical function, pain, and global estimate. RAPID 4 adds a self-report joint count, and RAPID 5, a physician global estimate. RAPID 3 can be calculated in about 10 seconds, RAPID 4 in about 19 seconds, and RAPID 5 in about 20 seconds. RAPID 3, RAPID 4, and RAPID 5 give similar results to distinguish active from control treatments in RA clinical trials, at levels similar to American College of Rheumatology or DAS improvement criteria, and are all correlated significantly with DAS28 (rho = 0.62–0.64, $P < 0.001$). A proposed classification of RAPID scores, analogous to four DAS28 categories, includes: 'near remission' (0–1), 'low severity' (1.01–2), 'moderate severity' (2.01–4), and 'high severity' (>4). RAPID scoring is feasible in standard clinical care to support continuous quality improvement.

Key words: continuous quality improvement; MDHAQ; RAPID; Plan-Do-Study-Act.

RATIONALE FOR QUANTITATIVE ASSESSMENT OF PATIENTS WITH RHEUMATOID ARTHRITIS WITHOUT FORMAL JOINT COUNTS

The quantitation of patient status in rheumatic diseases is complicated by the absence of a single measure that can serve as a 'gold standard' to assess and monitor all individual patients in clinical trials and clinical care, analogous to blood pressure or serum cholesterol. Pooled indices[1] therefore have been developed to assess patients with rheumatoid arthritis (RA), and other rheumatic diseases. In RA, indices include the American College of Rheumatology (ACR) criteria[2], the Disease Activity Score (DAS)[3,4], the Simplified Disease Activity Index (SDAI)[5], and the Clinical Disease Activity Index (CDAI).[6]

All widely used RA indices include a formal count of tender and swollen joints performed by a physician or assessor. A swollen and tender joint count is the most specific measure of inflammatory activity in RA[7], and is regarded by most rheumatologists as the most valuable measure for patient assessment.[8] Nonetheless, while most visits by most RA patients to rheumatologists include a careful *qualitative* joint assessment, most visits do *not* include a formal *quantitative* joint count.[9] Therefore, most standard care of patients with RA is conducted without quantitative measures, other than laboratory tests, which often give false-positive and false-negative results.[10]

A practical, quantitative index to assess and monitor clinical status without formal quantitative joint counts by a rheumatologist or assessor could be of considerable value in a busy clinical setting. An index of the three patient-reported outcome (PRO) measures among the seven in the Core Data Set – physical function, pain, and global estimate – distinguishes active from control treatments in clinical trials of leflunomide[11,12], methotrexate[11,12], adalimumab[13], and abatacept[14] at levels similar to ACR or DAS28 criteria, and is correlated significantly with DAS28 in these trials. A PRO index reported as a patient activity score (PAS) is correlated significantly with DAS28 in patients seen in standard clinical care.[15]