

Quantitative Clinical Assessment in Busy Rheumatology Settings: The Value of Short Patient Questionnaires



No single measure such as blood pressure or serum glucose can serve as a “gold standard” in diagnosis and assessment of every individual patient with most rheumatic diseases. Therefore, quantitative clinical assessment requires an index of several measures. Indices have been developed for many rheumatic diseases, including the rheumatoid arthritis (RA) Core Data Set¹, Disease Activity Score (DAS)², and Clinical Disease Activity Index (CDAI)³; the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI)⁴; Bath Ankylosing Spondylitis Disease Activity Index (BASDAI)⁵; Birmingham Vasculitis Activity Score (BVAS)⁶; Western Ontario McMaster Universities Osteoarthritis Index (WOMAC)⁷; Fibromyalgia Impact Questionnaire (FIQ)⁸; and many others.

At this time, however, only a small minority of patients with RA, OA, fibromyalgia, SLE, AS, vasculitis, or any rheumatic diseases gain any possible benefit of advances in clinical measurement, generally only in clinical trials and other clinical research studies. Care of most rheumatology patients is guided largely by nonquantitative *gestalt* impressions rather than quantitative measures. The only quantitative data available for care of most patients with rheumatic diseases are laboratory tests, which often give false-positive and false-negative results and/or usually are not available at the time of a visit^{3,9,10}.

Publication of the Health Assessment Questionnaire (HAQ)¹¹ in 1980 introduced to rheumatology a new type of quantitative clinical measure, a patient self-report questionnaire. Initially, “subjective” patient self-report quantitative measures were regarded as poor surrogates for traditional “objective” joint count, laboratory test, and radiographic measures, a view held by many physicians even today. However, a substantial body of evidence now indicates that patient questionnaires may be as informative as or more informative than these traditional measures in many situations.

Patient questionnaire scores for physical function are the most significant predictors of work disability and premature

mortality, somewhat greater than joint count measures, and far more significant than radiographic and any laboratory data (see reference¹²). Further, the 3 patient self-report scores among the 7 RA Core Data Set measures — physical function, pain, and global estimate of status — have relative efficiencies to distinguish active from control treatment in clinical trials comparable to or greater than the other 4 Core Data Set measures derived from a laboratory or physician assessment¹³. Therefore, an index of only these 3 patient questionnaire measures distinguishes active from control treatment in clinical trials at levels comparable to DAS or CDAI, which include joint counts¹⁴.

Despite their value in RA and other rheumatic diseases¹⁵, patient questionnaires are not used at this time in most rheumatology care. Some reported reasons for non-use include “takes too much staff time,” “difficult to administer,” and “difficult to score and/or interpret,”^{16,17}. These comments may apply to lengthy research questionnaires, which are often the only types of questionnaires known to most clinicians from clinical trials and other research studies. Research questionnaires may be long, tedious, and may interfere with the flow of patient visits rather than contributing information to clinical care. Indeed, a clinician who collects a patient questionnaire in a clinical trial is expected not to examine it before forwarding it to a data center.

A second type of questionnaire has been designed specifically for busy clinical settings, with attention not only to validity and reliability, primary criteria for any questionnaire, but also to feasibility and acceptability in busy clinical settings. An elegant example is reported in this issue of *The Journal* by Leeb and colleagues as a simplified version of the Rheumatoid Arthritis Disease Activity Index (RADAI) questionnaire¹⁸, RADAI5. These investigators have retained the 5 RADAI patient assessment queries concerning disease activity over 6 months and at this time, pain, general health and morning stiffness, while deleting the detailed RADAI self-report specific joint count. They docu-

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ment in rigorous analyses that RADAI5 is as informative as the longer RADAI for groups of patients, which also had been shown in the original RADAI report¹⁹. RADAI5 is correlated significantly with DAS and CDAI, and does not require a formal joint count to convey information to nonrheumatologists concerning patient status in primary care settings.

Another simplified index without formal joint counts for RA is a “routine assessment of patient index data” (RAPID3) score of the 3 patient questionnaire RA Core Data Set measures — physical function measures, pain visual analog scale (VAS), and global estimate VAS — on a Multidimensional Health Assessment Questionnaire (MDHAQ)²⁰. The MDHAQ evolved from experience in using the original HAQ¹¹ in routine care, with inclusion of only 8 of the 20 activities on the HAQ, one from each of the 8 HAQ categories, in order to review quickly (“eyeball”) relevant patient information. Activities such as “shampoo your hair” and “run errands and shop” that pertained only to certain, but not all, individuals were excluded, as well as “aids, devices, and help from another person.” Scoring templates and 2 complex activities — “walk 2 miles or 3 kilometers” and “participate in sports and recreation as you would like” — were added, as the status of patients with RA improved substantially in the 1990s²¹. RAPID scores can be calculated in fewer than 10 seconds, compared to 42 seconds to score a HAQ and 90 seconds to perform a formal joint count²², meaningful differences in most busy clinical settings.

We would anticipate that the RADAI5 would perform similarly to RAPID3 or another index derived from the HAQ, the HAQII²³, in time to score, longterm prognosis of RA, distinguishing active from control treatments in clinical trials, and monitoring patients in clinical care. However, we are somewhat puzzled that Leeb and colleagues have not chosen to include a HAQ or a HAQ-derivative physical function score in their assessment, in view of its inclusion in the RA Core Data Set and documented value in clinical research and care. The current MDHAQ includes 10 specific activities that appear pertinent to every patient on every day, as well as the specific joint queries from the RADAI, which provide information that we find contributes to patient care²².

RADAI5 and MDHAQ-RAPID3 illustrate that patient questionnaires for busy clinical settings differ from research questionnaires. Patient questionnaires for busy clinical settings are designed for completion in the waiting room by the patient and quick review (“eyeball”) by the clinician. We have used a version of the MDHAQ at all visits of all patients for more than 25 years in the infrastructure of medical care, and suggested that all rheumatologists adopt this practice²⁴. Collecting and scoring an MDHAQ-RAPID3 or RADAI5 does not preclude collection of more elaborate indices, such as SLEDAI, BASDAI, etc., in clinical and research settings. An MDHAQ-RAPID3 score has been found

useful in all rheumatic diseases, including SLE, AS, vasculitis, psoriatic arthritis, gout, osteoarthritis, fibromyalgia, and Behçet’s disease (illustrated examples in reference¹⁵).

It appears that any 3 or 4 of the RA Core Data Set measures, whether from joint counts, a laboratory test, patient self-report scores, or global estimates, can be compiled into a pooled index that functions equally well to one another and to the DAS, CDAI, or RAPID3. Any such index, and likely RADAI5, could distinguish active from control treatment responses in clinical trials and monitor clinical care. The engineering maxim, “keep it simple, stupid” (KISS), suggests that an optimal index for busy care settings would include the most inexpensively-obtained and easily-scored valid and reliable measures. Further, patient self-report RA Core Data Set measures appear more reliable (reproducible) than joint count measures²⁵, and more likely to be abnormal in patients with RA than an erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP) in RA⁹. Further studies of simple indices such as RADAI5 or RAPID3 to monitor patient status in busy clinical settings versus elaborate research indices could result in improved “universal” clinical rheumatology indices.

Of course, there will always be a place for research patient questionnaires and indices, as well as new patient questionnaires. Further improvements in the MDHAQ are anticipated over time, just as methods to assess anti-cyclic citrullinated proteins (CCP) and CRP are being advanced in recent years. A deeper understanding of many matters, such as mechanisms of different types of pain in different diseases, requires patient self-report. At the same time, if measures are feasible only in research studies, their value to improve patient care is limited. Most indices developed to date represent “hotel-based medicine”²⁶ rather than measures widely used in clinical settings.

A RAPID3 or RADAI5 score could serve the same function as ESR and CRP for rheumatologists as a common measure used in almost all rheumatic diseases — not necessarily informative in all patients, as is true for any “vital sign,” but sufficiently valuable in many patients for routine collection in clinical care. An MDHAQ or RADAI5 requires minimal cost and professional time. It is suggested that rheumatologists should include a patient questionnaire at each visit of each patient in their clinical care.

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