Remission in Rheumatoid Arthritis: Physician and Patient Perspectives

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ABSTRACT. ***Objective.*** To examine the prevalence of remission in rheumatoid arthritis (RA) as determined by physicians and patients independently, and to determine the degree of agreement among methods, the strength of predictor variables of remission, and the length of remission.

Methods. Eight hundred patients with RA completed a remission questionnaire on the day of their rheumatologist visit and their rheumatologists completed a separate questionnaire the same day. The question(s) were: "Given all your experience with disease activity in RA, are you [is your patient] currently in remission?". Patients also completed 0–10 visual analog scales for RA activity, pain, and functional limitation.

Results. The percentage of patients in remission by physician and patient assessment was 34.8% [95% confidence interval (CI) 31.4–38.2] and 30.9% (95% CI 27.7–34.20), respectively. The percentage of patients classified concordantly (full agreement) was 78.6%, and the associated kappa statistic was 0.54 (95% CI 0.45–0.58). The median duration of remission was 2.0 years. The median RA activity, pain, and functional scores were 1.0, 1.5, and 1.25 for patient-determined remission and 1.5, 1.5, and 1.5 for physician-determined remission.

Conclusion. Physician and patient estimates of remission in RA are similar (34.8% to 30.9%), and agreement was 78.6% (kappa 0.53). Based on previous data and the observed presence of disease activity, this definition of remission appears to be a measure of minimal disease activity rather than true remission. The problem of remission rates will not be solved until a consensus definition that has relevance in research and the clinic is developed. (First Release April 1 2009; J Rheumatol 2009;36:930–3; doi:10.3899/jrheum.080947)

Key Indexing Terms:
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After cure, remission is the most desirable outcome of rheumatoid arthritis (RA). However, there is no agreed-upon definition of remission[1-8]. Remission includes assessments of clinical activity, but also usually has a minimum time component, and might come to include factors such as radiographic progression in future definitions. Currently, an international group of RA experts under the auspices of the American College of Rheumatology (ACR) is reviewing remission with plans to propose new criteria[1].

In the clinical care setting, the physician usually determines remission based on apparent clinical activity. Compared with research criteria that may seem Procrustean, physicians may be able to determine when pain, fatigue, and laboratory test abnormalities are unrelated to RA activity. Still, there are a number of problems with physician criteria. Physicians do not use a uniform set of criteria, something that would be needed for research studies. In addition, RA activity exists as a continuum, and physicians must pick a point on that continuum that they define as remission, a point that still might include residual activity. There are few data on remission prevalence as defined by practicing physicians. But knowledge of this prevalence can inform the current remaking of the remission criteria.

It also might be useful to ask patients if they are in remission. Patients with RA are knowledgeable about RA activity. However, patients may not know about laboratory results, might inappropriately identify swelling, or misattribute non-RA pain as being related to RA. Patients' assessments of remission could be valuable in clinical care and research, but only if they agree with other methods of determining remission.

In our study, we examined the prevalence of remission as determined by physicians and patients independently, and determined the degree of agreement between methods, the strength of predictor variables of remission, and the length of remission.

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MATERIALS AND METHODS

We surveyed 800 unselected participants in the National Data Bank for Rheumatic Diseases (NDB) longterm outcome study of RA who completed a remission questionnaire on the day of their rheumatologist visit[9], and we asked the rheumatologist to complete a separate questionnaire that same day. The question(s) were: "Given all your experience with disease activity in RA, are you [is your patient] currently in remission?". Patients also completed 0–10 visual analog scales for RA activity, pain, and functional limitation[10]. The RA activity scale was a component of the RA Disease Activity Index (RADAI)[11]. Patients reported the length of remission. The median age and RA duration of NDB participants were 65.2 and 15.4 years, respectively. Men constituted 20.5% of the study population.

The NDB is a research data bank that surveys patients by mail and Internet at 6-month intervals. Patients are diagnosed by rheumatologists and referred to the data bank from their practices. To protect patient confidentiality in our study, the data were deidentified; we did not have access to any data on these patients beyond the study questionnaire and their RA diagnosis.

RESULTS

The percentage of patients in remission by physician and patient assessment was 34.8% [95% confidence interval (CI) 31.4–38.2] and 30.9% (95% CI 27.7–34.20), respectively (Table 1). The percentage of patients classified concordantly (full agreement) was 78.6%, and the associated kappa statistic was 0.54 (95% CI 0.45–0.58). Using the physicians and the patients as the "gold standard," the area under the receiver-operating characteristic (ROC) curve was, respectively, 0.75 (95% CI 0.72–0.78) and 0.77 (95% CI 0.73–0.78); and specificity was high in both groups [86.6% (95% CI 83.4–89.4) and 81.7% (95% CI 78.3–84.9)]. The median duration of remission reported by patients was 2.0 years.

Patient-reported RA activity and pain were similar in their strength of predictive ability for physician- and patient-determined remission, and were stronger than functional status (Figure 1). Associations were also stronger for patient-reported remission than physician-reported remission. For example, the area under the ROC curve for RA activity was 0.798 compared with 0.730.

Of interest, the median RA activity, pain, and functional scores were 1.0, 1.5, and 1.25 for patient-determined remission and 1.5, 1.5, and 1.5 for physician-determined remission (Figure 2).

DISCUSSION

The prevalence of remission in our study (30.9% to 34.8%) is similar to what we have noted previously for the Disease Activity Score 28-joint count (DAS-28), 28.5%[8]. In that study we also found the Clinical Disease Activity Index (CDAI) remission prevalence to be 6.5% to 8.1%; and we used a physician's global that was specifically designed for RA activity and was marked 0 for no activity and 1–3 as mild activity[8]. To be inclusive, we then accepted scores of 0 or 1 as remission, and found that 12.5% of patients were in remission using that definition. In addition, minimal disease activity was 34.7% by DAS-28 criteria and 26.9 by the ACR core set criteria. Based on data from that study[8], it seems likely that the physician and patient remission prevalences reported in this study overestimate remission, and instead represent low disease activity rather than remission. Additional support for the idea that the study "remission" really represents minimal disease activity comes from Figure 2, where it can be seen that there are many > 1 or > 2 scores for RA activity and pain in patients classified as being in remission. The problem of remission rates will not be solved until a consensus definition that has relevance in research and the clinic is developed.

We found that agreement between patients and physicians was moderate, with an overall agreement of 78.6%. Therefore, we think that the patients' self-reported remission can be used in observational research studies. However, it should be understood that it is measuring low disease activity, not remission.

Recently, in a preliminary separate study, we asked clinic physicians to note whether the patient is in remission and to complete the physician's global severity-RA activity scale. Therefore, physicians were aware of the level of their global at the time they indicated remission. We found no global scores > 1 for patients in remission. This suggests that the global scale adds an implicit remission definition when both are used together.

Physician and patient estimates of remission in RA were 34.8% and 30.9%, respectively. Agreement between observers was moderate, 78.6%, kappa 0.53. Based on previous data and the observed presence of disease activity, this

Table 1. Agreement measures using physicians' and then patients' remission as the "gold standard."

	Physician (95% CI)	Patient (95% CI)
Remission (+), %	34.8 (31.4, 38.2)	30.9 (27.7, 34.2)
Sensitivity, %	63.7 (57.7, 69.3)	71.7 (65.6, 77.2)
Specificity, %	86.6 (83.4, 89.4)	81.7 (78.3, 84.9)
Percentage correct	78.6	78.6
ROC area	0.75 (0.72, 0.78)	0.77 (0.73, 0.80)
Positive predictive value, %	71.7 (65.6, 77.2)	63.7 (57.7, 69.3)
Negative predictive value, %	81.7 (78.3, 84.9)	86.6 (83.4, 89.4)
Kappa	0.52 (0.45, 0.58)	0.52 (0.45, 0.58)

ROC: receiver-operating characteristic.

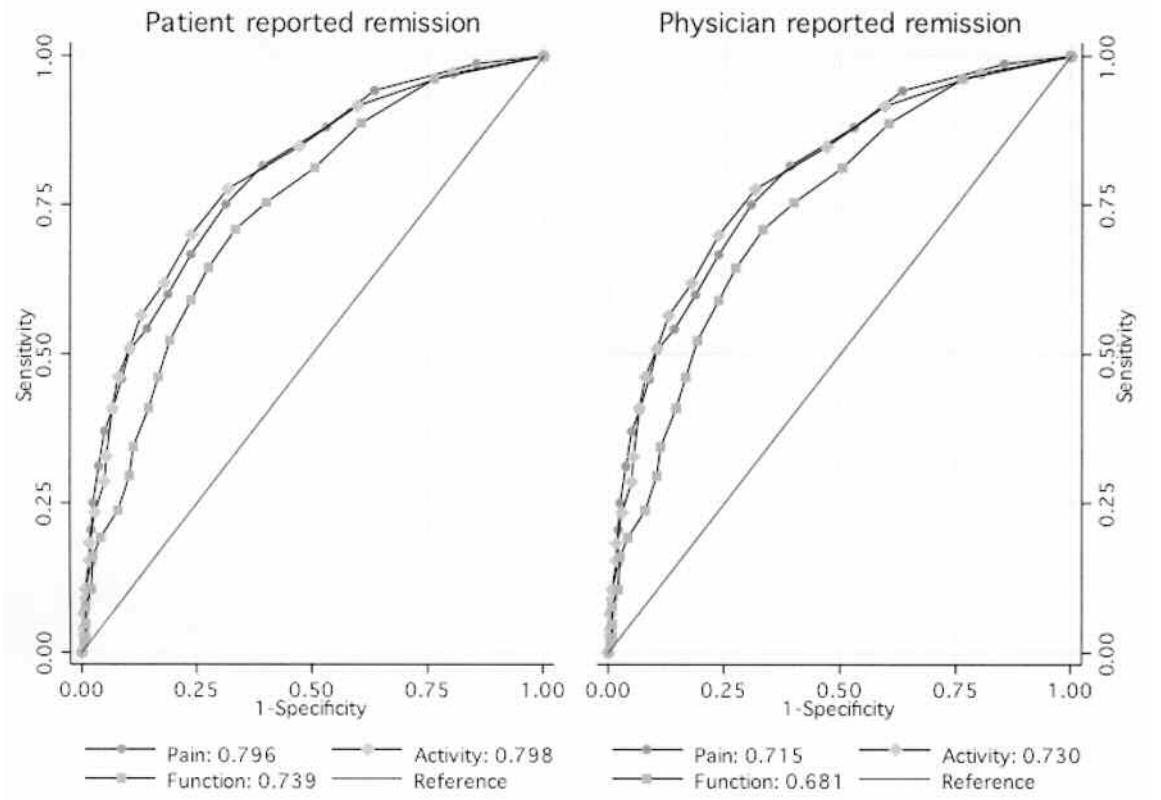

Figure 1. Areas under the receiver-operating characteristic curves for patient- and physician-reported rheumatoid arthritis (RA) remission for patient-reported pain, RA activity, and functional ability, using 0–10 visual analog scales.

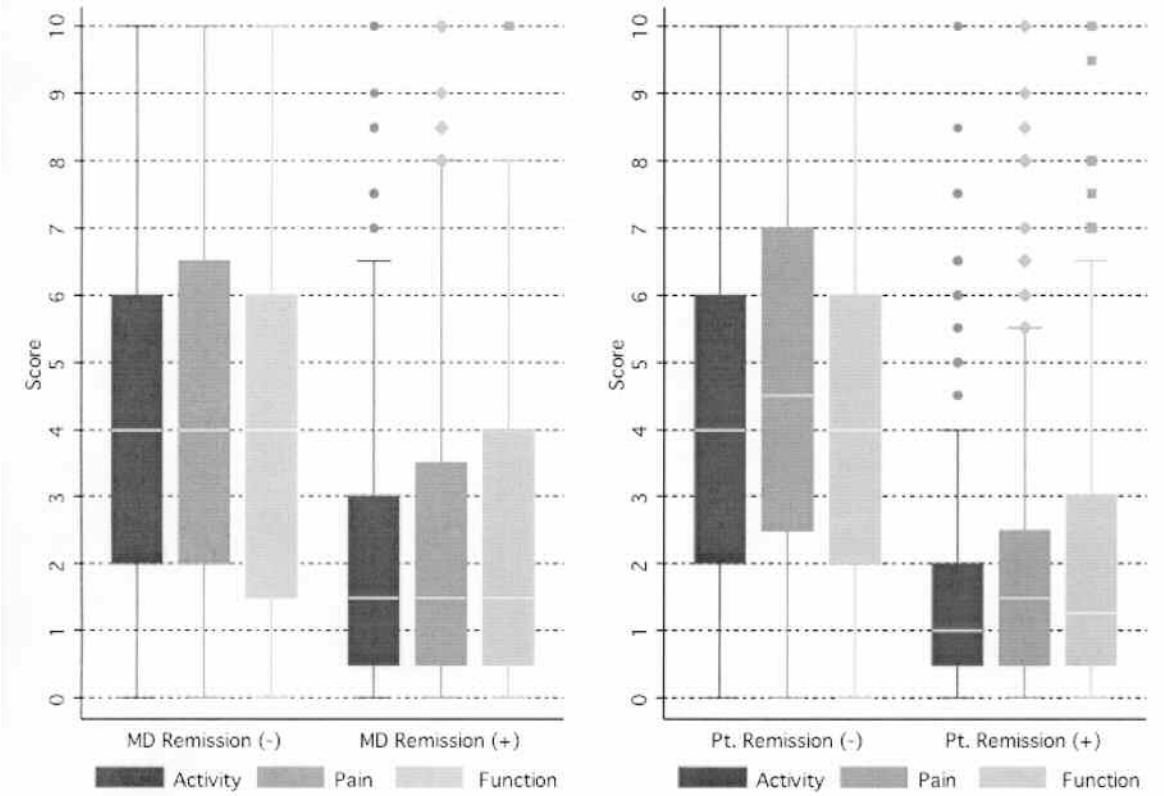

Figure 2. Box plots of visual analog scale (0–10) measures of RA activity, pain, and function for patients in remssion by physician definition (left panel) and patient definition (right). Horizontal white lines indicate median values; boxes define 25th and 75th percentiles; lines indicate 5th and 95th percentiles.

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