

Can Rheumatoid Arthritis Patients Self-Monitor Their Disease Activity?

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Disclosures

- No relevant disclosures



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Background

- In rheumatoid arthritis (RA) the 'Treat to Target' approach¹ emphasizes the importance of regular assessment, and modifying therapy until the target (remission or low disease activity) is reached.
- Active involvement of patients in monitoring their own disease activity could enhance treatment by providing an early warning when targets are not met, indicating the need for a rheumatologist visit to evaluate treatment.



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¹ Smolen 2010

Objective

- To determine if patients can self-monitor their RA disease activity and accurately identify whether they have reached the target of low disease activity or remission.



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Methods

➤ Cross sectional study:

- All RA patients presenting for a follow-up visit to 7 participating rheumatology practices were invited to participate in the study.

➤ Inclusion criteria:

- 18 years of age or older.
- Have a diagnosis of rheumatoid arthritis.
- Under the ongoing care of a rheumatologist.
- Able to read and write English to fill out questionnaire without needing a translator.



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Methods

- Participants filled out a questionnaire and performed a self-assessment of tender and/or swollen joints before seeing the rheumatologist.
- Rheumatologist joint counts and lab values (CRP) were obtained from rheumatologists' charts on the same visit.
- Rheumatologists and patients were blinded to each other's assessments
- RA disease activity states from patient self-reported data and rheumatologist evaluation were compared.
- RA disease activity indices were chosen based on their psychometric properties and because they have been endorsed by ACR as valid measure to monitor disease activity²

Methods

CDAI*: Clinical Disease Activity Index

- Tender Joint Count, Swollen Joint Count, Rheumatologist global assessment, patient global assessment

SDAI*: Simplified Disease Activity Index

- Tender Joint Count, Swollen Joint Count, Rheumatologist global assessment, patient global assessment, C-Reactive Protein (CRP)

RAPID-4: Routine Assessment of Patient Index Data with 4 measures

- Multi-Dimensional Health Assessment Questionnaire (MDHAQ), Pain Visual Analogue Scale, Patient global assessment, Rheumatoid Arthritis Disease Activity Index (RADAI) joint count.

DAS-28: Disease Activity Scale with 28 joint count

- Tender Joint Count, Swollen Joint Count, C-Reactive Protein (CRP), Patient global assessment



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*In patient versions of the CDAI and SDAI, physician global scores were replaced with patient global scores.

Methods

- Disease activity states were categorized into remission, low, moderate and high disease activity, according to published cut points.
- Because change in treatment is recommended with moderate or high disease activity, we also created two categories: remission or low vs. moderate or high.
- We compared agreement across two categories and across four categories
- Patient-derived and rheumatologist-derived activity states were compared using:
 - Percent perfect agreement
 - Cohen's kappa for two category comparisons, which measures observed agreement beyond that expected by chance
 - Weighted kappa for four category comparisons, which weighs how close the agreement is to perfect agreement.

Results – Sample (N=49)

Table 1: Demographic characteristics of study sample

Demographic characteristic	
Gender, % females	75.5%
Ethnicity, % Caucasian	67.3%
Education	
Less than high school	8.1%
High school	20.4%
Post-secondary	71.5%
Mean (SD) age , years	57.7 (15.4)
Mean (SD) RA duration	10 (12)
Mean (SD) MDHAQ score	0.68 (0.69)
Disease activity state (MD CDAI)	
Remission	10.2%
Low	36.7%
Moderate	38.7%
High	14.9%

Results – two disease activity categories

Comparison	Percent perfect agreement	Cohen's Kappa (95% CI)
Patient vs. rheumatologist CDAI	75.5%	0.51* (0.27;0.75)
Patient vs. rheumatologist SDAI	79.6%	0.59* (0.36;0.82)
RAPID4 vs. rheumatologist CDAI	79.6%	0.59* (0.36;0.82)
RAPID4 vs. rheumatologist SDAI	79.6%	0.59* (0.36;0.82)
Patient DAS-28 vs. rheumatologist DAS-28	77.6%	0.54* (0.32;0.77)

*values in 0.4-0.6 interval represent moderate agreement; all $p < 0.001$ (Landis 1977)



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Results – four disease activity categories

Comparison	Percent perfect agreement	Weighted Kappa (95% CI)
Patient vs. rheumatologist CDAI	51%	0.66* (0.51;0.81)
Patient vs. rheumatologist SDAI	61%	0.75* (0.64;0.87)
RAPID4 vs. rheumatologist CDAI	47%	0.69* (0.56;0.81)
RAPID4 vs. rheumatologist SDAI	49%	0.69* (0.56;0.82)
Patient DAS-28 vs. rheumatologist DAS-28	61%	0.66* (0.49;0.83)

*values in 0.6-0.8 interval represent good agreement; all $p < 0.001$ (Landis 1977)



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Study Limitations

- Small sample size (49)
- Sample may not be representative of all RA patients
 - Mostly Caucasians;
 - Highly educated;
 - Only seven rheumatology practices included in the study.
- We evaluated patients' ability to classify their disease activity at one point in time, but not their ability to detect changes over time or response to treatment.



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Conclusion

- In our study sample, there was moderate to good agreement between patient self-assessment and rheumatologist assessment of disease activity state, with little difference between instruments used.
- These results suggest that patients are able to assess their own disease activity, which may be helpful in guiding the need for physician visits and medication adjustments.



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DES RESULTATS EN
SOINS RHUMATOLOGIQUES

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Thank you



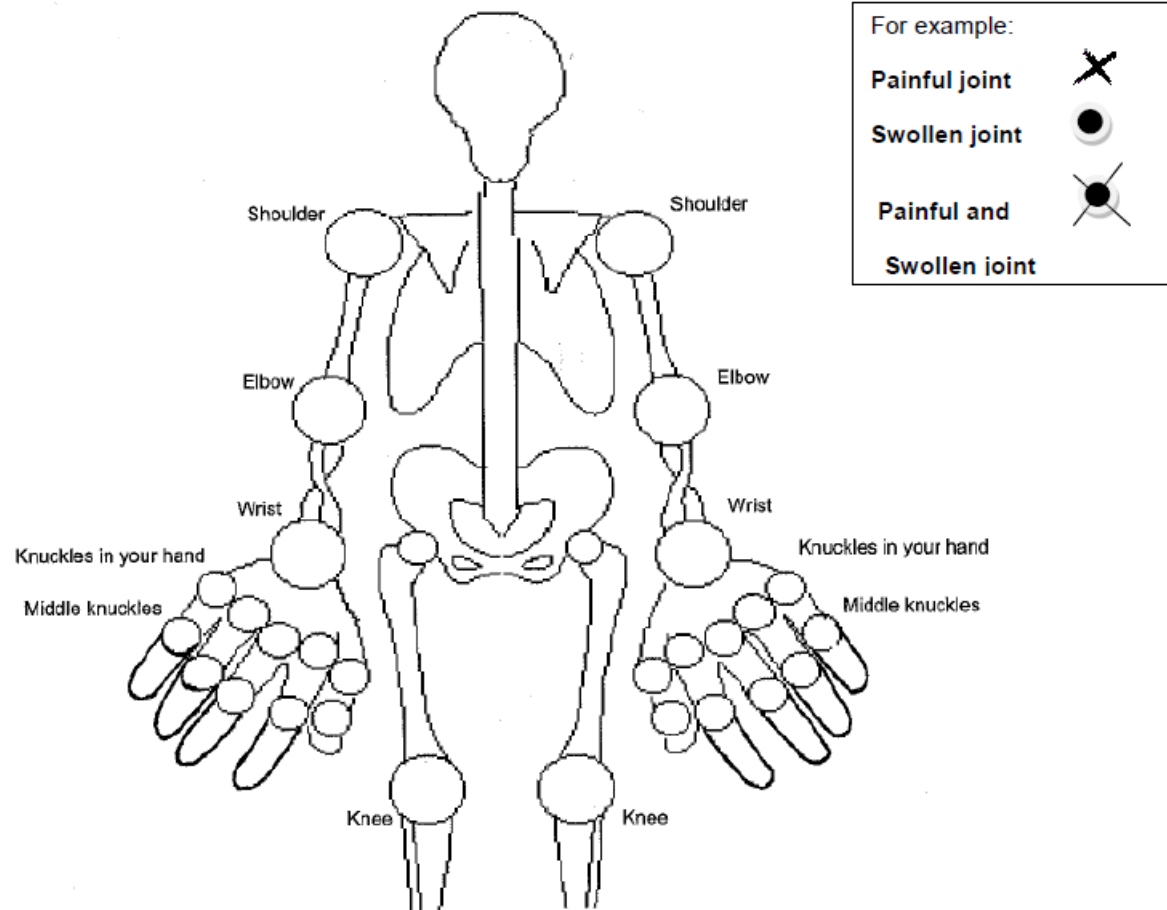
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9. We would like to know how your joints are feeling **TODAY**. For each joint **marked with a circle**, please indicate the following:
- If the joint is **tender** when you squeeze it or if it **hurts** when you move it, please place an **"X"** on the joint
 - If the joint appears **swollen**, please fill in the circle that represents the joint
 - If the joint is both **tender** and **swollen**, please do both (i.e. place an **"X"** on the joint and fill in the circle that represents the joint). Please ensure both marks are visible.

RIGHT SIDE

LEFT SIDE



10. We would like to know how your joints are feeling **TODAY**. For each joint marked with a square, please indicate the following:

- a. Please place an "X" on each joint that hurts you
- b. Please indicate whether the pain in each joint is "mild", "moderate", or "severe". (Circle one).

For example:



Knee

mild / mod / sev



The diagram shows a human figure with a smiley face head. The body is divided into a **Right** side and a **Left** side. Each side has joints marked with squares for assessment. The joints and their corresponding labels are:

- Right Side:**
 - Shoulder: mild / mod / sev
 - Elbow: mild / mod / sev
 - Wrist: mild / mod / sev
 - Hand / Fingers: mild / mod / sev
 - Hip: mild / mod / sev
 - Knee: mild / mod / sev
 - Ankle: mild / mod / sev
 - Foot / Toes: mild / mod / sev
- Left Side:**
 - Shoulder: mild / mod / sev
 - Elbow: mild / mod / sev
 - Wrist: mild / mod / sev
 - Hand / Fingers: mild / mod / sev
 - Hip: mild / mod / sev
 - Knee: mild / mod / sev
 - Ankle: mild / mod / sev
 - Foot / Toes: mild / mod / sev