Routine Assessment of Patient Index Data (RAPID)

General Description

Purpose. The RAPID3 is a brief self-administered questionnaire of disease symptoms for patients with RA. RAPID4-Patient Joint Count (RAPID4PTJC) adds a self-reported joint count to RAPID3. RAPID4-Provider Joint Count (RAPID4MDJC) and RAPID5 combine self-administered questionnaires of disease symptoms with a provider derived joint count or PrGA, respectively.

Content. The RAPID scores include combinations of the following 3 to 5 items: the MDHAQ, a pain VAS, PtGA on a 10 cm VAS, PrGA on a 10 cm VAS, swollen joint count, and tender joint count.

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Versions. There are 4 RAPID score versions. RAPID3 includes physical function as measured by the MDHAQ, a pain VAS, and the PtGA. RAPID4TJC includes physical function as measured by the MDHAQ, a pain VAS, PtGA, and the RADAI self-reported tender joint count. RAPID4MDJC includes physical function as measured by the MDHAQ, a pain VAS, PtGA, and provider derived 28 tender joint and 26 swollen joint counts (excludes shoulders). RAPID5 includes physical function as measured by the MDHAQ, a pain VAS, PtGA, PrGA, and the RADAI self-reported tender joint count.(16, 16, 17)

Number of items in scale. The RAPID scores have 3-5 items, corresponding to the number after RAPID (i.e., RAPID3 has 3 items).

Subscales. None.

Populations. *Developmental/target.* Patients with RA.

Other uses. RAPID3 has been used in systemic lupus erythematosus, spondyloarthropahies, vasculitis, psoriatic arthritis, gout, scleroderma, osteoarthritis, fibromyalgia, familial Mediterranean fever, and Bechet's disease.(18)

ACR Components. RAPID3: Patient assessment of pain, PtGA, patient assessment of physical function. RAPID4MDJC: Patient assessment of pain, PtGA, patient assessment of physical function, tender joint count, swollen joint count. RAPID4TJC: Patient assessment of pain, PtGA, patient assessment of physical function, tender joint count. RAPID5: Patient assessment of pain, PtGA, patient assessment of physical function, tender joint count, PrGA.

Administration

Method. For RAPID score versions requiring a joint count, either provider joint counts or patient self-reported RADAI joint counts may be used to calculate RAPID scores.(16)

Training. Training is necessary for reliable assessment of joint counts.

Time to complete. RAPID3: Patient: approximately 1.5 minutes; Provider: < 30 seconds; Laboratory: N/A. RAPID4PTJC: Patient: 5-10 minutes; Provider: < 1 minute; Laboratory: N/A. RAPID4MDJC: Patient: <1.5 minutes; Provider approximately 2 minutes; Laboratory: N/A. RAPID5: Patient: 5-10 minutes if

patient joint count and <5 minutes if provider joint count; Provider: < 1 minute if patient joint count and < 2.5 minutes if provider joint count; Laboratory: N/A.(19, 20)

Equipment needed. **N**one.

Availability/cost. The RAPID scores are all available free of charge. The RAPID3 is available online at http://www3.interscience.wiley.com/journal/77005015/home.

Scoring

Responses.

Scale. The RADAI self-report joint count ranges from 0-48. Provider tender joint scores range from 0-28. Provider swollen joint scores range from 0-26. The MDHAQ ranges from 0-3. Pain, PtGA and PrGA are scored from 0-10, each on a separate 10 cm horizontal VAS, which may be substituted for a 21-circle VAS.

Score. The range of each of the RAPID scores is 0-10. Scores can be calculated by hand, calculator, or by use of a scoring template.

Interpretation of scores. RAPID3, RAPID4TJC, and RAPID4MD, and RAPID5 scores ranging from 0-1.0 indicate near remission; 1.1-2.0 low severity; 2.1-4.0 moderate severity; and 4.1-10 high severity.(21) Alternatively, if the RAPID3 is scored on a 0-30 scale the following cutoffs for disease activity may be used: remission: 0-3.0; low severity: 3.1-6.0; moderate severity: 6.1-12.0; and high severity: 12.1-30.(22)

Method of scoring. All raw scores may be converted to range of 0-10. The MDHAQ score (0-3) is multiplied by 3.33. Pain, PtGA and PrGA are scored from 0-10, each on a separate 10 cm VAS. Tender and swollen joint scores are converted to a 0-10 scale based on simple division (i.e., for 28 joint count divide by 2.8). After the component scores are standardization to 0-10 scales, the individual items in the desired composite are added together and then divided by the number of items in the composite to give an adjusted final score (i.e., RAPID3 raw score of 0-30 is divided by 3 to give the final adjusted score ranging 0-10).(16)

Training to interpret. None.

Norms available. See interpretation of scores.

Psychometric Information

Reliability. *Test-retest.* Test-retest reliability has not been proven.

Validity.

Content. The RAPID scores are all composed of ACR "core set" measures used to assess the efficacy of disease-modifying antirheumatic drugs. None of the RAPID scores include acute phase reactant values.

Criterion. The RAPID3, RAPID4MDJC, RAPID4TJC, and RAPID5 scores demonstrate Spearman correlation coefficients as compared to DAS28 between 0.692-0.731, with the RAPID4MDJC demonstrating the highest value. Spearman correlation coefficients for each of the RAPID scores (excluding RAPID2) as compared to CDAI ranged from 0.742 - 0.828, with the RAPID4MDJC again demonstrating the highest value.

Correlation coefficients between each of the RAPID scores (excluding RAPID2) was between 0.981-0.989. An additional study demonstrated Spearman correlation coefficients between 0.36-0.61 for RAPID3 as compared to DAS28 and between 0.54-0.77 as compared to CDAI.(22)

Concurrent. When comparing RAPID3 to ACR20 and DAS in a randomized controlled trial, kappa ranged between 0.616-0.644, indicating similar sensitivity in identification of active treatment from placebo.(23) In another study, kappa values ranged from 0.22-0.37 for CDAI vs. RAPID3 and from 0.12-0.20 for DAS28 vs. CDAI, indicating a fair agreement of RAPID 3 to both of the indices.(22)

Construct. Addition of tender or swollen joint counts and/or physician estimate of global status do not add to the capacity of RAPID3 to distinguish active from control treatments and all RAPID scores perform similarly in this function.(16)

Responsiveness to change. Studies to evaluate for responsiveness to change have not been done for the RAPID scores. Each of the RAPID scores is comprised of combinations of core set measures which have well established responsiveness to change, however pain scores have been shown to be relatively stable over time in established RA.(13)

Comments and Critique

The RAPID scores are feasible in the clinical setting and are based on ACR criteria. The flexibility to choose which of the RAPID scores used is adventitious. The RAPID3 score is the most frequently used and best validated measure among

the various RAPID scores. RAPID4 scores have been presented in 2 different forms with use of tender or both tender and swollen joint counts and as such standardization is lacking. Additionally, RAPID4 and RAPID5 scores have been reported in the literature using provider or patient derived joint counts ranging from 28-78 joints. This lack of standardization makes these scores more difficult to compare between users. Furthermore, both provider and patient joint counts are poorly reproducible.(24-26) More recently Pincus has advocated using the RADAI self-reported joint count(20) which would eliminate the above issues of variability among joint assessment. Patient derived measures without acute phase reactant values have been shown to be reliable and sensitive,(27) however are influenced by patient education level.(28) While the use of MDHAQ is shorter and easier to administer than the original HAQ it has a greater floor effect(15) and less even spacing of questions than the newer HAQII.(14) Additionally, despite concerns that patient questionnaires may reflect irreversible joint damage RAPID scores have demonstrated similar efficiency to joint counts in differentiating active from inactive disease.(22)