ASSESSMENT OF PAIN BY RHEUMATOID ARTHRITIS PAIN SCALE AND ITS CORRELATION WITH DISEASE ACTIVITY IN RA PATIENTS

Dr. Harshil Shah, PG resident, ABVIMS & Dr. RML Hospital, New Delhi.

Dr. Rajnish Singh, Professor, ABVIMS & Dr. RML Hospital, New Delhi.

INTRODUCTION

- Rheumatoid Arthritis : a chronic systemic disease with articular and extra-articular manifestations.

- Management of RA is based on treat to target approach.

- Periodic assessment of disease activity is essential.

- Pain is the most common symptom for which medical attention is sought.

- Rheumatoid Arthritis Pain Scale (RAPS) : a single, 24-item, quantitative score encompassing multiple dimensions of pain.

- Paucity of data on its utility as disease activity assessment tool.

MATERIAL AND METHODS

STUDY DESIGN

- Cross sectional observational study conducted at Dr. RML hospital

AIMS AND OBJECTIVES

- To find correlation between RAPS and established disease activity measures such as DAS 28 ESR and CDAI.

INCLUSION CRITERIA

- Patients of RA as defined by ACR-EULAR criteria
- Age > 18 years

EXCLUSION CRITERIA

- Any condition interfering with patient's ability to read/write/understand RAPS Questionnaire

No	Pain items	Possible range	No	Pain items	Possible range
1	I would describe my pain as gnawing.	0-6	13	I would describe my pain as burning.	0-6
2	I would describe my pain as aching.	0-6	14	I find that I guard my joints to reduce pain.	0-6
3	I would use the word exhausting to describe my pain	0-6	15	I brace myself because of the pain.	0-6
4	I would describe my pain as annoying.	0-6	16	My pain is throbbing in nature.	0-6
5	I am in constant pain	0-6	17	I would describe my pain as sharp.	0-6
6	I would describe my pain as rhythmic	0-6	18	I would say my pain is severe.	0-6
7	I have swelling of at least one joint.	0-6	19	I feel stiffness in my joints after rest.	0-6
8	I have morning stiffness of one hour or more.	0-6	20	My joints feel hot.	0-6
9	I have pain on motion of at least one joint.	0-6	21	I feel anxious because of pain.	0-6
10	I cannot perform all the everyday tasks I normally would because of pain.	0-6	22	I would describe my pain as tingling.	0-6
11	Pain interferes with my sleep.	0-6	23	I feel my pain is uncontrollable.	0-6
12	I cannot decrease my pain by using methods other than taking extra medication.	0-6	24	I feel helpless to control my pain.	0-6

DISEASE ACTIVITY ASSESSMENT TOOLS

DAS 28 ESR =

- $0.56\ (\sqrt{\text{Tender Joint Count}})\ +$
- $0.28\ (\sqrt{\text{Swollen Joint Count}})\ +$
- $0.70\ [\ln(ESR)]\ +$
- 0.014 (Subjective assessment of disease activity by patient 0-100)

CDAI =

- Tender Joint Count +
- Swollen Joint Count +
- Patient's global assessment (PGA) +
- Evaluator's global assessment (EGA)

DAS 28 ESR	Disease activity
< 2.6	Remission
2.6 to 3.2	Low disease activity
> 3.2 to 5.1	Moderate disease activity
> 5.1	High disease activity

CDAI	Disease activity
0.0-2.8	Remission
2.9-10.0	Low disease activity
10.1-22.0	Moderate disease activity
22.1-76.0	High disease activity

METHODOLOGY

- 40 consecutive patients fulfilling the inclusion criteria were recruited for the study after an informed consent.

- All patients were asked to complete RAPS questionnaire independently and to score each question from 0 (never) to 6 (always). Total RAPS score was calculated by simple summation of individual item's score.

- All patients were assessed for both patient and physician derived parameters.

- Patient derived parameters :
  - Pain Visual Analogue Scale (Pain VAS) & Patient's Global Assessment (PGA)

- Physician derived parameters :
  - Tender Joint Count (TJC) and Swollen Joint Count (SJC)
  - Evaluator's Global Assessment (EGA)
  - Composite disease activity measures such as DAS 28 and CDAI

Investigations to aid in diagnosis and estimation of disease activity

INVESTIGATIONS
Rheumatoid Factor (RF)
Anti CCP
ESR
C reactive protein (CRP)
X rays as needed

RESULTS AND OBSERVATIONS

- Mean age of patients was 46.2 ± 12.6 years with range of 20 to 69 years.
- 33 patients were females and 7 were males.
- Mean value of disease duration of study subjects was 3.93 ± 3.79 years with range of 0.5 to 20 years.
- 39 patients were positive for Rheumatoid Factor.
- 36 patients were positive for anti-CCP antibody.

- Cronbach alpha for entire RAPS was 0.952.
- It was > 0.7 for all 4 subscales.
- Questionnaire was internally consistent.

Component	Cronbach alpha
Physiological	0.810
Affective	0.723
Sensory-discriminative	0.883
Cognitive	0.865

CORRELATION OF RAPS SCORE WITH DAS 28 ESR
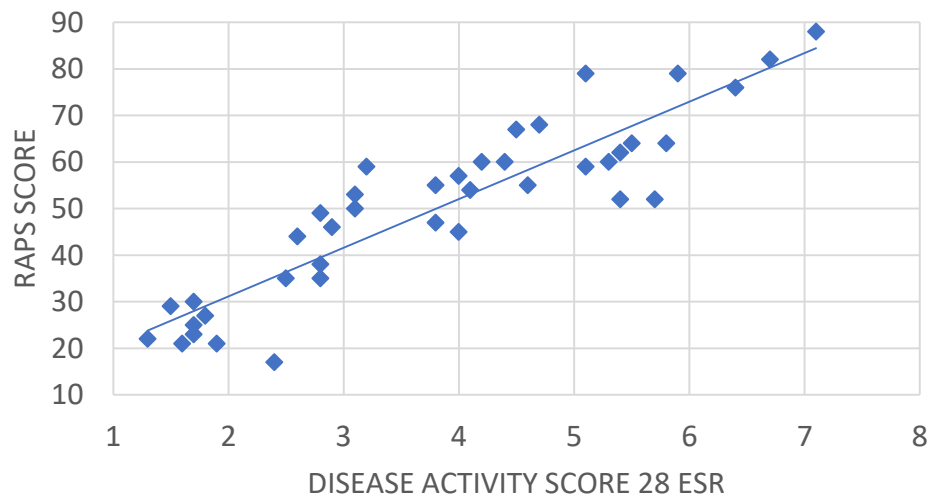
Correlation coefficient 0.901
P < 0.0001

CORRELATION OF RAPS SCORE WITH CDAI
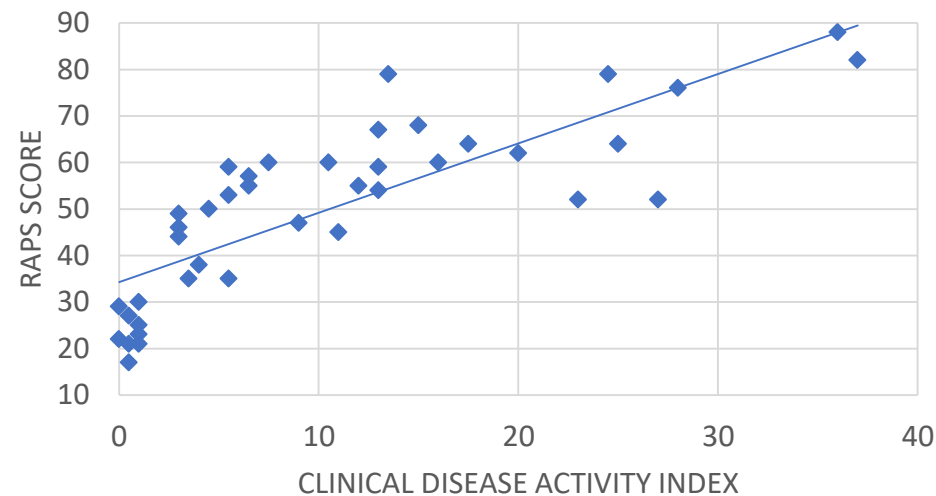
Correlation coefficient 0.875
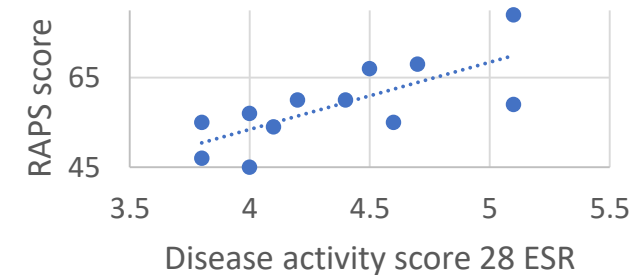P < 0.0001

Correlation of RAPS score with DAS 28 ESR in patients with remission
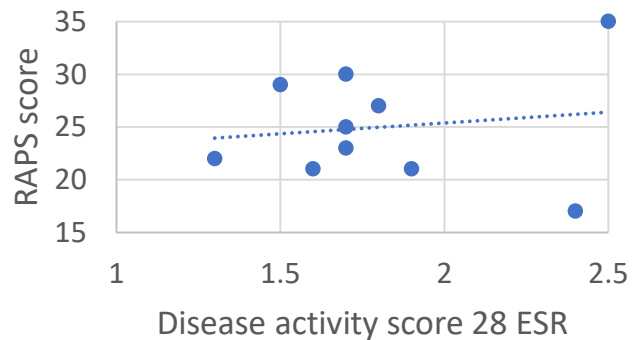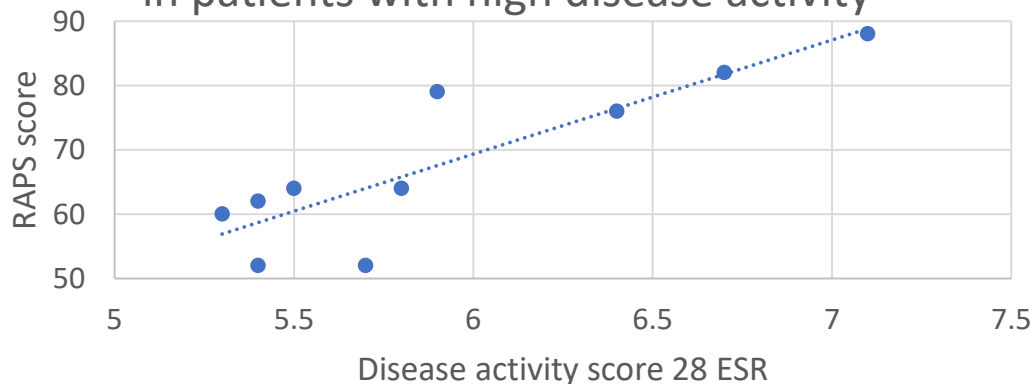

Correlation of RAPS score with DAS 28 ESR in patients with low disease activity
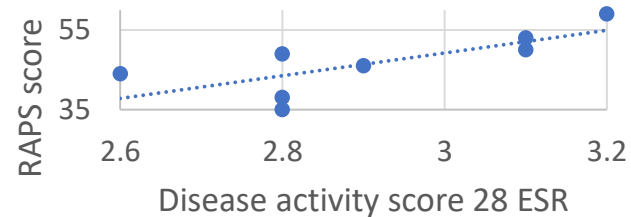
Correlation of RAPS score with DAS 28 ESR in patients with moderate disease activity

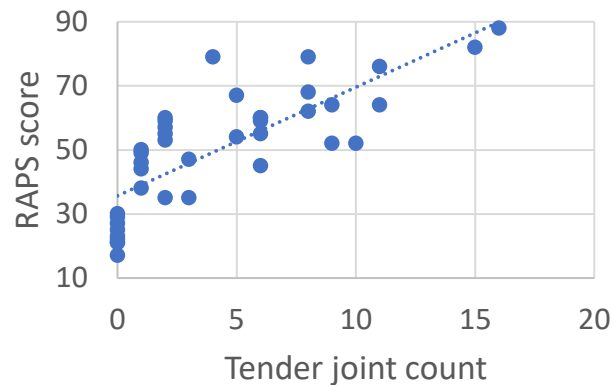Correlation of RAPS score with DAS 28 ESR in patients with high disease activity

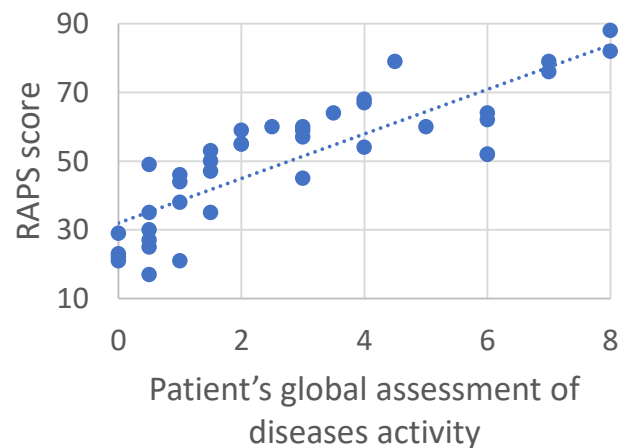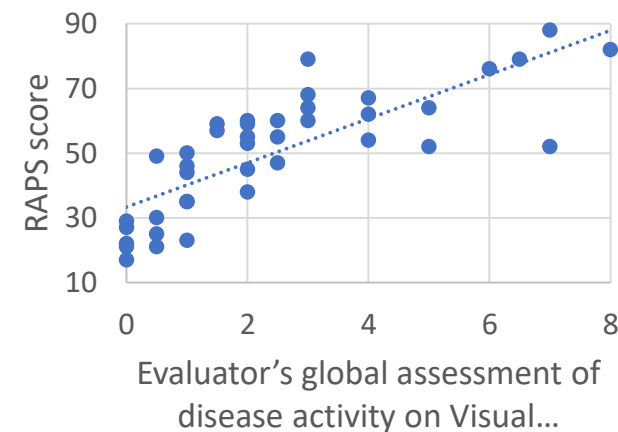| Severity	Remission	Low activity	Moderate activity	High activity
Correlation coefficient	0.037	0.822	0.718	0.853
P value	0.931	0.022	0.011	0.004

Correlation of RAPS score with TJC

Correlation of RAPS score with SJC
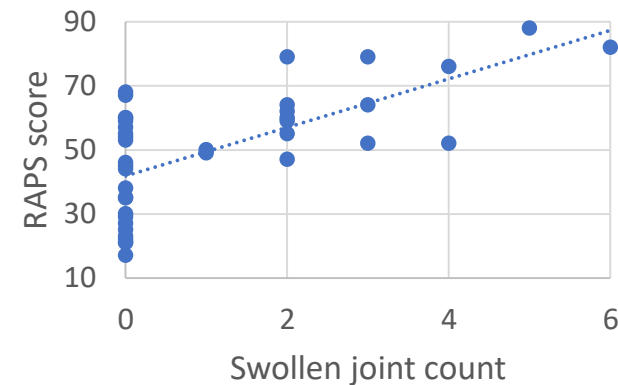
Correlation of RAPS score with PGA
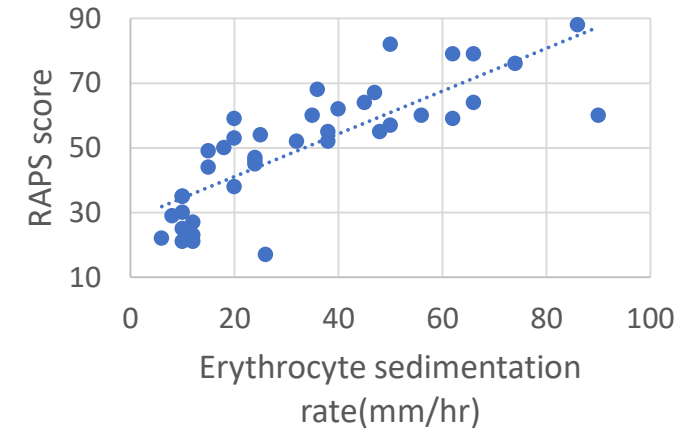
Correlation of RAPS score with EGA

Correlation of RAPS score with Pain VAS
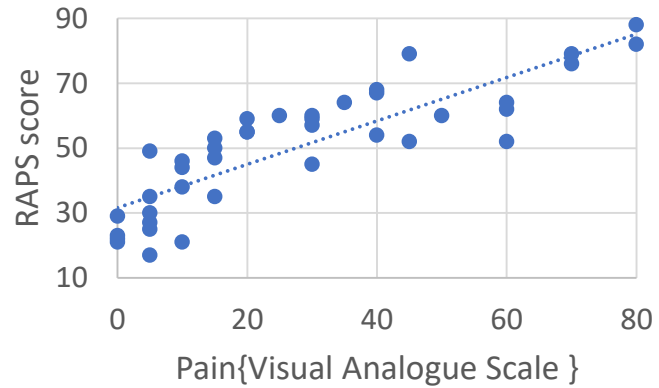
Correlation of RAPS score with ESR

Parameters	TJC	SJC	PGA	EGA	Pain VAS	ESR	DAS 28 ESR	CDAI
Correlation coefficient	0.835	0.608	0.881	0.848	0.887	0.859	0.901	0.875
P value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

CONCLUSION

- RAPS has strong positive correlation with established disease activity measurement tools such as DAS 28 and CDAI.
- RAPS has strong positive correlation with other disease activity parameters such as TJC, SJC, PGA, EGA, Pain VAS and ESR.
- RAPS is a reliable and clinically valuable measure to assess pain and disease activity in RA patients.