IMPLEMENTATION OF TREATING PATIENTS TO TARGET IN A LONG STANDING RHEUMATOID PATIENT POPULATION

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Conclusions

- It is feasible to perform diverse disease activity measurements (DAMs), including non-clinically based DAMs, within the time constraints of a twenty minute office visit.
- Performing these diverse DAMs, in addition to the standard DAMs, facilitates decision making and the implementation of a treat to target (T2T) strategy in patients with long standing rheumatoid arthritis.
- The patients in this clinic, though treated aggressively, demonstrate on average moderate to high-moderate disease activity by several DAMs.
- Patients on biologic therapies demonstrated disease activity that did not differ from patients on treatments without a biologic.
- A more practical and obtainable T2T strategy in such a clinic would be a goal of disease activity of a mid-moderate level.

Introduction

- Treating rheumatoid arthritis patients to target (T2T) with a goal of obtaining low disease activity (LDA) or no disease activity (NDA) is an attractive treatment approach and has been shown to result in better outcomes in patients with new onset or relatively recent onset rheumatoid arthritis (RA) [1].
- Implementing this strategy in a long standing rheumatology clinic is problematic with a preponderance of RA patients who have chronic diseases including deformities, severe osteoarthritis, and other comorbidities which can lead to confounding results when using traditional disease activity measures (DAMs) such as the DAS28 (see figure 1).
- The ultrasound power Doppler joint count (UPDJC) and multiple biomarker disease activity (MBDA) blood test are two new options that may provide additional insights in the assessment of patients with long standing RA.

Methods

- All patients with a diagnosis of rheumatoid arthritis in a long-standing rheumatology clinic underwent evaluation with DAMs including the DAS28, CDAI, and blood testing with a MBDA (Crescendo).
- Also, a method for preforming a truncated UPDJC was adopted [2] .

Demographics

Coeur d'Alene Arthritis Clinic & RA Patient Demographics	
Clinic Founded	1983
Male/Female Pt	22%/78%
SeroPos/SeroNeg	82%/18%
CCP Positive	41%
Pt Years in Clinic	9.5
New Pts per Month	1-2
N = 279	

Disease Activity Measures Severity Scales

Disease Activity Measures Severity Scales				
Severity	Normal	Mild	Mod.	Severe
DAS28	<2.60	2.60-3.20	3.20-5.20	>5.20
MBDA	<25	26-30	31-44	>44
USPDJC	<5	5-6	7-10	>10
CDAI	0-3	4-9	10-22	>22

Patients with Long Standing RA

- Figure 1. Patients with long standing RA and deformities are difficult to assess with standard DAMs, such as the DAS28 with both significant underestimating and over estimating the degree of disease activity in any given individual.
- The use of less subjective instruments, such as the USPDJC and MBDA aids in the assessment of these patients.

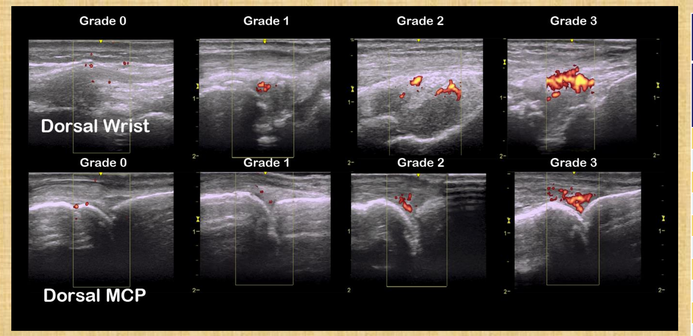
Treatment Modalities

All Rheumatoid Arthritis Patients Treatment Modalities	
Treatment Modality	Number (%)
No Arthritis Treatment	2 (1%)
Pred[1] Only	6 (6%)
Pred[3]	108 (39%)
MTX[2,3]	159 (57%)
Pred + MTX	33 (12%)
HQL[3,4]	37 (13%)
MTX + HQL	6 (2%)
Lef[3,5]	36 (13%)
Biologics[3]	154 (55%)
Biologics (Tnfs)[6]	89 (32%)
N = 279	

Prednisone[1], Methotrexate[2]- Includes Combinations[3], HydroxyChloraquine[4], Leflunomide[5], anti Tumor Necrosis Factor[6]

- Most clinic patients are being treated with conventional disease modifying agents (cDMARD), biologics or combinations of these agents.

Ultrasound Power Doppler JC



- The UPDJC analyzes six synovial sites [2] for a total of twelve sites with each site assessed by a subjective scale of Grade 0 (normal) to Grade 3 (severe) leading to a possible score of 0-36.
- The vast majority of increased vascularity in joints in RA occurs in the dorsal wrist, and dorsal MCPs > PIPs, allowing for the truncated version of this Doppler JC.

MBDA Blood Test

- What goes here?

Results of Disease Activity Measures

All Rheumatoid Arthritis Patients Disease Activity Measures	
Disease Activity Measure	Results Average (+/- sd)
DAS28CRP	4.10 (1.33)
DAS28ESR	4.49 (1.45)
CRP	6.5 (11.3)
ESR	21 (19)
VECTRA	41.4 (13.5)
UPDJC	7.8 (4.3)
CDAI	22.3 (13.3)
N = 279	

Rheumatoid Arthritis Patients on Biologics Disease Activity Measures	
Disease Activity Measure	Results Average (+/- sd)
DAS28CRP	4.10 (1.25)
DAS28ESR	4.47 (1.35)
CRP	6.6 (13.3)
ESR	21 (20)
VECTRA	41.1 (13.5)
UPDJC	7.9 (4.5)
CDAI	22.9 (13.1)
N = 152	

- . Results indicate the average DAMs for clinic patients are of moderate to moderate high levels.
- There are no significant differences between the DAMs of patients who are on biologics vs those who are not.

Correlations Between Disease Activity Measures

All Rheumatoid Arthritis Patients UPDJC CORRELATION VS	
Disease Activity Measure	Correlation
DAS28CRP	0.470
DAS28ESR	0.445
CRP	0.464
ESR	0.334
VECTRA	0.504
TJC	0.285
SJC	0.441
PT GLOBAL	0.263
DR GLOBAL	0.379
CDAI	0.437
N = 286	

All Rheumatoid Arthritis Patients MBDA CORRELATION VS	
Disease Activity Measure	Correlation
DAS28CRP	0.422
DAS28ESR	0.405
CRP	0.534
ESR	0.499
UPDJC	0.504
TJC	0.185
SJC	0.282
PT GLOBAL	0.201
DR GLOBAL	0.180
CDAI	0.301
N = 279	

- There are significant correlations between the UPDJC and DAMs such as the DAS28, Vectra (MBDA), CRP, and CDAI.
- There are significant correlations between the Vectra (MBNA) and DAMs such as the DAS28, UPDJC, CRP, and CDAI.

Discussion

Treatment Target and Visit Frequency

- Currently, the treatment target for new and recent onset RA patients is LDA or NDA, especially with those patients with risk factors, such as being seropositive, erosive, or having high phase reactants.
- The treatment target for patients with long standing disease is more modest, such as to a low-moderate to mid-moderate range.
- Patients are evaluated every four months with clinical DAMs and UPDJC until target reached, and then yearly or at time of clinical deterioration.
- MBDA are obtained yearly, and at the time of medicine changes.

Treatment Modality Algorithm

- Add biologic to MTX and if no significant subsequent improvement in DAMs switch to new biologic
- Add HQL to MTX
- Add Sulf[1] to HQL and MTX
- Switch MTX oral to MTX s.c. and increase dose to 25 mg.

References

1. Smolen, J. et al. Treating Rheumatoid Arthritis to Target: Recommendations of an International Task Force. Ann. Rheum. Dis 2010;69:631-6372.
2. Shin-ya Kawashiri et. All. The power Doppler Ultrasonography Score from 24 Synovial Sites or 6 Synovial Sites, including the MCP joints, reflects the Clinical Disease Activity and Level of Serum Biomarkers in Patients with RA. Rheumatology (2011) 50 (5): 962-965.