

Factors affecting the discrepancy between patient and physician global assessment of disease activity in patients with early rheumatoid arthritis over time: Results from the Ontario Best Practices Research Initiative (OBRI)

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BACKGROUND

- Rheumatoid Arthritis (RA) is a chronic disease that needs frequent assessments over time.
- Clinicians plan management based on their assessment of disease activity (MDGA) at each visit.
- Patients assessment of disease activity (PTGA) may change over time as they learn more about the disease.
- Patient and physician assessment of disease activity can be substantially different.

OBJECTIVES

- To assess the discrepancy between PTGA and MDGA at baseline and after one year in patients with early rheumatoid arthritis (ERA).
- To assess factors affecting this discrepancy at baseline and one year.

METHODS

- Patients enrolled in the Ontario Best Practices Research Initiative (OBRI) were evaluated. OBRI includes a clinical registry of RA patients (OBRI-RA registry) followed in routine care in Ontario, Canada (www.obri.ca). Patients with disease duration <12 months were included if they had both baseline and one year visits.
- The main outcome, the global assessments' discrepancy, was calculated by simple subtraction (PTGA-MDGA).
- PTGA-MDGA ≥ 30 was considered discordant (positive or negative).
- Multivariable linear regression was used for analysis.

RESULTS

Table 1 - Baseline characteristics of included OBRI patients with early RA

Baseline variables	Significant Discrepancy between PTGA and MDGA		
	No (N=351)	Yes (N=109)	p-value
Age (years) Mean (SD)	56.3 (14.1)	59.1 (12.3)	0.06
Female n(%)	254 (72.4)	79 (72.5)	0.98
RF negative n (%)	108 (30.8)	35 (32.1)	0.90
Anti-CCP negative n (%)	82 (23.4)	27 (26.6)	0.46
ESR (mm/hr) mean (SD)	26.6 (21.2)	24.4 (19.9)	0.34
CRP (mg/l) mean (SD)	16.1 (25.3)	12.3 (15.3)	0.17
Fatigue Scale mean (SD)	4.4 (3.1)	5.6 (3.0)	<0.001
HAQ-DI mean (SD)	1.0 (0.7)	1.3 (0.7)	0.003
HAQ-pain mean (SD)	1.3 (0.8)	1.5 (0.8)	0.02
PTGA (0-100) mean (SD)	19.4 (18.5)	56.2 (21.2)	<0.001
MDGA (0-100)	15.0 (16.5)	20.2 (20.4)	0.007
SJC (28) mean (SD)	1.2 (2.3)	1.6 (2.8)	0.161
TJC (28) mean (SD)	1.5 (3.5)	3.1 (5.0)	<0.001
CDAI mean (SD)	6.1 (7.6)	12.2 (8.5)	<0.001
DAS28 mean (SD)	2.3 (1.2)	3.3 (1.2)	<0.001
DMARD use at baseline Yes (%)	229 (65.2)	68 (62.4)	0.59
Biologic use at baseline (%)	7 (2.0)	2 (1.8)	1.000
Number of comorbidities mean (SD)	3.0 (2.3)	3.9 (2.4)	<0.001

SJC Swollen Joint Count, TJC Tender Joint Count, RF Rheumatoid Factor, PTGA Patient Assessment of Disease Activity, MDGA Physician Global Assessment of Disease Activity, SJC Swollen Joint Count, TJC Tender Joint Count, CDAI Clinical Disease Activity Index, DAS Disease Activity Score

Table 2 - Significant PTGA-MDGA discrepancy rate for patients with early RA at baseline and one-year follow-up

Significant PTGA-MDGA discrepancy	Baseline	One-Year follow-up
No (%)	351 (76.3)	361 (78.5)
Yes (%)	109 (23.7)	99 (21.5)
Positive/Negative discrepancy	N=109	N=99
Positive (in favor of PTGA) n (%)	98 (89.9)	85 (85.9)
Negative (in favor of MDGA) n (%)	11 (10.1)	14 (14.1)

PTGA patient global assessment of disease activity, MDGA physician global assessment of disease activity

- Multivariable regression analysis showed that higher PTGA was associated with higher Swollen Joint Count (SJC), Tender Joint Count (TJC) and fatigue at baseline and one year.
- Similar association was found for MDGA except fatigue which was not significant.

RESULTS

Table 3 - Multivariate regression analysis for predictors of PTGA-MDGA discrepancy at baseline and one-year follow-up

Baseline variables	At baseline	At 1 year follow-up
	β p-value	β p-value
Age	0.22, 0.01	-0.02, 0.81
Female	-2.98, 0.20	0.84, 0.73
Post-secondary education	0.45, 0.83	-0.61, 0.78
Disease duration at baseline	2.54, 0.25	-2.18, 0.34
Positive RF	-1.54, 0.48	-1.89, 0.40
ESR (mm/hr)	-0.04, 0.45	0.04, 0.53
SJC (28)	-2.75, <0.0001	-1.65, <0.0001
TJC (28)	1.17, 0.0002	0.08, 0.82
HAQ-pain	1.78, 0.27	4.99, 0.001
Fatigue	0.85, 0.04	1.24, 0.002
Depression at baseline	1.53, 0.51	-3.16, 0.18

SJC Swollen Joint Count, TJC Tender Joint Count, RF Rheumatoid Factor, PTGA Patient Assessment of Disease Activity, MDGA Physician Global Assessment of Disease Activity, SJC Swollen Joint Count, TJC Tender Joint Count,

CONCLUSIONS

- Significant discrepancy exists in a quarter of patients with early RA at baseline and slightly less after one year.
- In majority of these patients PTGA is higher than MDGA over time.
- Patients with discordant assessments have more severe disease at baseline.
- The number of active joints affects both assessments and this effect persists at one year.
- Clinicians should consider this association when making treatment decisions.

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