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Cristina Ferreras [a,b,*], Francisca Aguiar [b,c], Mariana Rodrigues [b,c] e Iva Brito [b,c]

[a] *Departamento de Pediatría, Centro Hospitalar Universitário de São João, Porto, Portugal*
[b] *Facultad de Medicina, Universidad de Porto, Porto, Portugal*
[c] *Unidad de Reumatología Pediátrica y Joven Adulto, Centro Hospitalar Universitário de São João, Porto, Portugal*

* Autor para correspondencia.
Correo electrónico: cristinaferreras87@gmail.com (C. Ferreras).

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Differences and Determinants of Physician's and Patient's Perception in Global Assessment of Rheumatoid Arthritis☆

Diferencias y determinantes de la percepción del médico y el paciente en la evaluación global de la artritis reumatoide

Dear Editor:

Patient's Global Assessment of Disease Activity (PtGA) and Physician's Global Assessment of Disease Activity (PhGA) are assessed as part of disease activity in Rheumatoid Arthritis (RA).[1] Both are important measures in the treat-to-target strategies, but often provide discordant results.[2,3] This can provide an erroneous assessment of the disease activity in patients and mislead treatment decisions.

We aimed to assess the differences and determinants of PtGA and PhGA in RA patients under biologic treatment.

We performed a cross-sectional study, including 46 patients with RA diagnosed according to the ACR/EULAR criteria, under biologic treatment. A written informed consent was obtained. Sociodemographic, clinical data, inflammatory parameters, disease activity (28-joint Disease Activity four variables Score (DAS28 4V) and patient-reported outcomes (PROs) were collected at same medical appointment.

Variables with $p < 0.1$ in the univariate analysis and those with clinical relevance were included in the multivariate analysis.

Clinical and laboratory characteristics of patients are shown in Table 1. PtGA and PhGA were significantly different (36.1 ± 27.6 mm *vs* 8.7 ± 14.2 mm, $p < 0.001$) and a positive discordance (PtGA > PhGA, more than 25 mm in visual analogue scale [VAS]) was found in 54.3% of cases.

PtGA had a strong correlation with PROs. More elevated PtGA was associated with higher pain VAS, Health Assessment Questionnaire [HAQ], and Hospital Anxiety and Depression Scale [HADS]), C reactive protein (CRP), tender and swollen joint counts (TJC and SJC, respectively) and with comorbidities like fibromyalgia or osteoarthritis (OA), and with lower 36-Item Short Form Health Survey [SF-36], Functional Assessment of Chronic Illness Therapy [FACIT], and EuroQol [EQ5D]. No association was found between PtGA and age, sex, education level, profession, employment status, extra-articular manifestations, positivity of rheumatoid factor, erythrocyte sedimentation rate (ESR), years of disease evolution or number of biologic treatments.

SF-36 global score showed a strong correlation ($P > 0.750$, $p < 0.001$) with all of the other PROs and so it was the PRO included in the multivariate analysis.

In the multivariate analysis including SF-36, CRP, TJC and OA (R^2 adjusted = 0.672), the main predictors of PtGA were lower SF36, concomitant OA and higher CRP level.

PhGA had a correlation with pain VAS, CRP, TJC and SJC. Higher PhGA was associated with higher pain VAS, CRP, TJC and SJC. No association was found between PhGA and patient's or physician's age or gender, extra-articular manifestations, positivity of rheumatoid factor, ESR level, years of disease evolution or number

Table 1
Clinical and laboratory characteristics of patients with rheumatoid arthritis.

Age (years), mean ± SD	58.7 ± 12.3
Gender – female, % (*n*/*N*)	69.6% (32/46)
Years from diagnosis, mean ± SD	14.7 ± 7.39
Biologic DMARD position, % (*n*/*N*)	1st: 58.7% (27/46) 2nd: 28.3% (13/46) Others: 13.0% (6/46)
Patient Global VAS, median (IQR)	40.0 (50.5)
Patient pain VAS, median (IQR)	31.0 (45.0)
Physician Global VAS, median (IQR)	0.0 (*15.0*)
Positive discordance % (*n*/*N*)[a]	54.3% (35/66)
Tender joints (*n*), median (IQR)	0.0 (3.0)
Swollen joints (*n*), median (IQR)	0.0 (2.0)
CRP (mg/dL), median (IQR)	0.3 (0.9)
ESR (mm/hr), median (IQR)	14.0 (24.0)
HAQ, median (IQR)	1.0 (1.6)
DAS28 4V, mean ± SD	2.9 ± 1.9
SDAI, mean ± SD	6.6 ± 6.3
CDAI, mean ± SD	7.5 ± 7.3
Short Form (36) Health Survey (SF36), mean ± SD	Physical functioning: 49.5 ± 32.3 Role limitations due to physical health problems: 58.2 ± 30.3 Pain: 52.8 ± 26.3 General health perceptions: 41.2 ± 23.3 Energy/fatigue: 50.8 ± 23.3 Social role functioning: 66.0 ± 26.0 Role limitations due to emotional problems: 65.7 ± 30.9 Mental health: 62.5 ± 24.8
FACIT, mean ± SD	34.9 ± 10.3
HADS, median (IQR)	Anxiety: 7 (7) Depression: 6 (7.5)
EQ5D, median (IQR)	0.32 (0.44)
Comorbidities, median (IQR)	2 (3)
Mellitus diabetes, % (*n*/*N*)	17.4% (8/46)
Depression/Anxiety, % (*n*/*N*)	8.7% (4/46)
Osteoarthritis, % (*n*/*N*)	28.3% (13/46)
Fibromyalgia, % (*n*/*N*)	4.3% (2/46)
Osteoporosis, % (*n*/*N*)	15.2% (7/46)

VAS: Visual Analogic Scale; CRP: C-reactive protein; ESR: erythrocyte sedimentation rate; HAQ: Health Assessment Questionnaire; DAS 28: Disease Activity Score; SDAI: Simple Disease Activity Index; CDAI: Clinical Disease Activity Index; EQ5D: EuroQol-5 dimension; FACIT: Functional Assessment of Chronic Illness Therapy; HADS: Hospital Anxiety and Depression; SD: Standard Deviation.
[a] Positive discordance: PtGA > PhGA, more than 25 mm in VAS.

☆ Authors declare that the manuscript has not been submitted or published elsewhere with the exception of abstracts published with scientific meetings.

of biologic treatments. In the multivariable analysis including ESR, TJC, SJC, and CRP (R^2 adjusted = 0.800), the main predictors of the PhGA were SJC and higher CRP level.

This study report discordance between patients and physicians, showing the variability implied on the global assessment of RA activity, similar to literature.[4,5] However, to the best of our knowledge, this is the first study demonstrating that concomitant OA and PROs are some of the major predictors of PtGA. This highlights that patients' assessments are influenced by subjective domains such as personal needs, priorities, experiences, and expectations.[6]

Overall, PtGA is based on function but also in subjective and emotional experience of pain, whereas the PhGA is based on more objective measures, more related to disease activity.

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Soraia Azevedo *, Hugo Parente, Francisca Guimarães, Filipa Teixeira

Rheumatology Department, Unidade Local de Saúde do Alto Minho, Ponte de Lima, Portugal

* Corresponding author.
E-mail address: soraia.azevedo@ulsam.min-saude.pt (S. Azevedo).

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