



# **CHANGES IN DAS28, CDAI AND SDAI ARE ASSOCIATED WITH BIOLOGIC CLASS, GENDER, PREVIOUS BIOLOGIC THERAPY AND ACPA/RF STATUS – RESULTS FROM REUMA.PT**

**Romão VC<sup>1,2</sup>, Santos MJ<sup>2,3</sup>, Polido-Pereira J<sup>1,2</sup>, Duarte C<sup>4</sup>, Nero P<sup>5</sup>,  
Miguel C<sup>6</sup>, Costa JA<sup>7</sup>, Pimentel-Santos FM<sup>5</sup>, Barcelos F<sup>6</sup>, Costa L<sup>8</sup>,  
Melo Gomes JA<sup>6</sup>, Pereira da Silva JA<sup>1</sup>, Branco JC<sup>5</sup>, Canas da Silva J<sup>3</sup>,  
Da Silva JAP<sup>4</sup>, Fonseca JE<sup>1,2</sup>, Canhão H<sup>1,2</sup>**

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<sup>1</sup>Hospital de Santa Maria, Centro Académico de Medicina de Lisboa, Lisboa; <sup>2</sup>Unidade de Investigação em Reumatologia, Instituto de Medicina Molecular, Lisboa; <sup>3</sup>Hospital Garcia de Orta, Almada; <sup>4</sup>Centro Hospitalar Universitário de Coimbra, Coimbra; <sup>5</sup>CHLO, Hospital Egas Moniz; <sup>6</sup>Instituto Português de Reumatologia, Lisboa; <sup>7</sup>Hospital Conde de Bertiandos, Ponte de Lima; <sup>8</sup>Hospital de São João, Porto; Portugal.

# Background

- **Tocilizumab** (IL-6 receptor blocker) and anti-TNF biologic agents are key therapies in the management of **rheumatoid arthritis (RA)**
- **Equally effective** and very few head-to-head comparisons available
- **Tocilizumab:**
  - ↑ effect on acute phase reactants
  - ↑ response rates using **composite scores** that include ESR or CRP (e.g., DAS28)



# Aims

- Compare response to therapy in RA patients treated with anti-TNF agents with those treated with tocilizumab according to different response measures
- Determine the factors influencing treatment response

# Material and Methods

- **Inclusion criteria:**

- RA patients
- Registered in Reuma.pt
- Starting anti-TNF (infliximab, adalimumab, etanercept, golimumab) or tocilizumab between January 1<sup>st</sup> 2008 and July 26<sup>th</sup> 2013
- Treated for at least 6 months
- Available DAS28 scores at baseline and 6 months



# Material and Methods

- **Primary Outcome**
  - Change in DAS28, CDAI and SDAI at 6 months
- **Statistical analysis**
  - Student's t-test to compare change in disease activity between groups
  - Multivariate linear regression models predicting change in disease activity according to each index
  - P-value significant at <0.05



# Results

- **524** patients enrolled
  - **429 anti-TNF**: 106 adalimumab, 202 etanercept, 43 golimumab, 78 infliximab
  - **95 Tocilizumab**

# Results

- Baseline characteristics (n = 524)

	anti-TNF (429)	Tocilizumab (95)	p
<b>Age</b>	$53.5 \pm 12.3$	$53.8 \pm 10.9$	0.791
<b>Female</b>	375 (87.4)	82 (86.3)	0.772
<b>Dis. duration (n=489)</b>	$11.7 \pm 9.5$	$10.7 \pm 9.0$	0.372
<b>Education (n=387)</b>	$7.1 \pm 4.5$	$7.4 \pm 4.6$	0.611
<b>Smokers (n=450)</b>	43 (11.8)	12 (14.3)	0.522
<b>RF+/ACPA+ (n=463)</b>	312 (83.7)	73 (81.1)	0.564
<b>Erosions (n=380)</b>	75 (24.3)	16 (22.5)	0.757
<b>Nº previous biologics</b>	$0.17 \pm 0.44$	$0.81 \pm 1.13$	<0.001*
<b>Biologic-naïve</b>	365 (85.1)	52 (54.7)	<0.001*
<b>MTX</b>	353 (82.3)	75 (79.0)	0.447
<b>Corticosteroids</b>	334 (77.9)	77 (81.1)	0.493

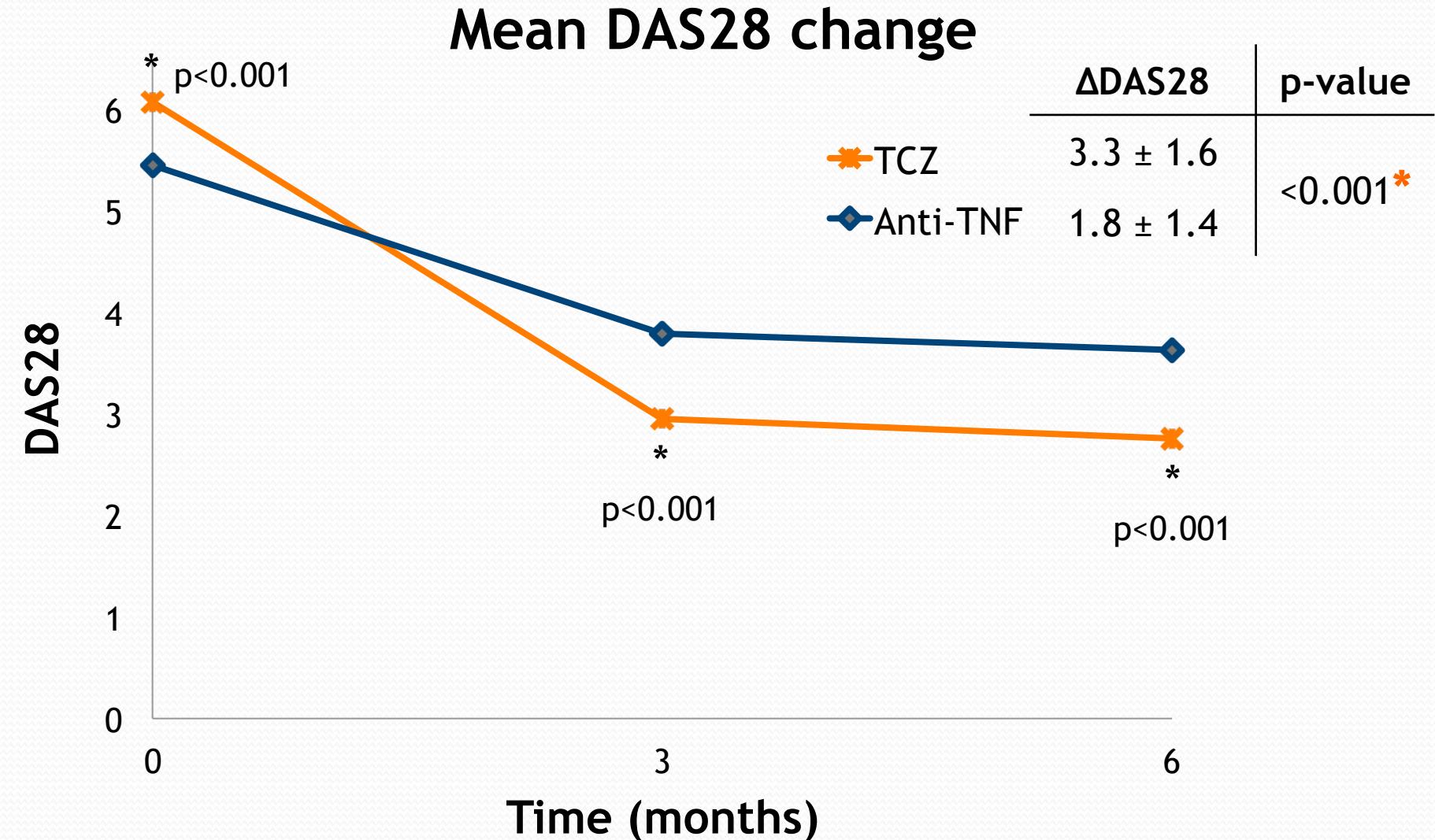
# Results

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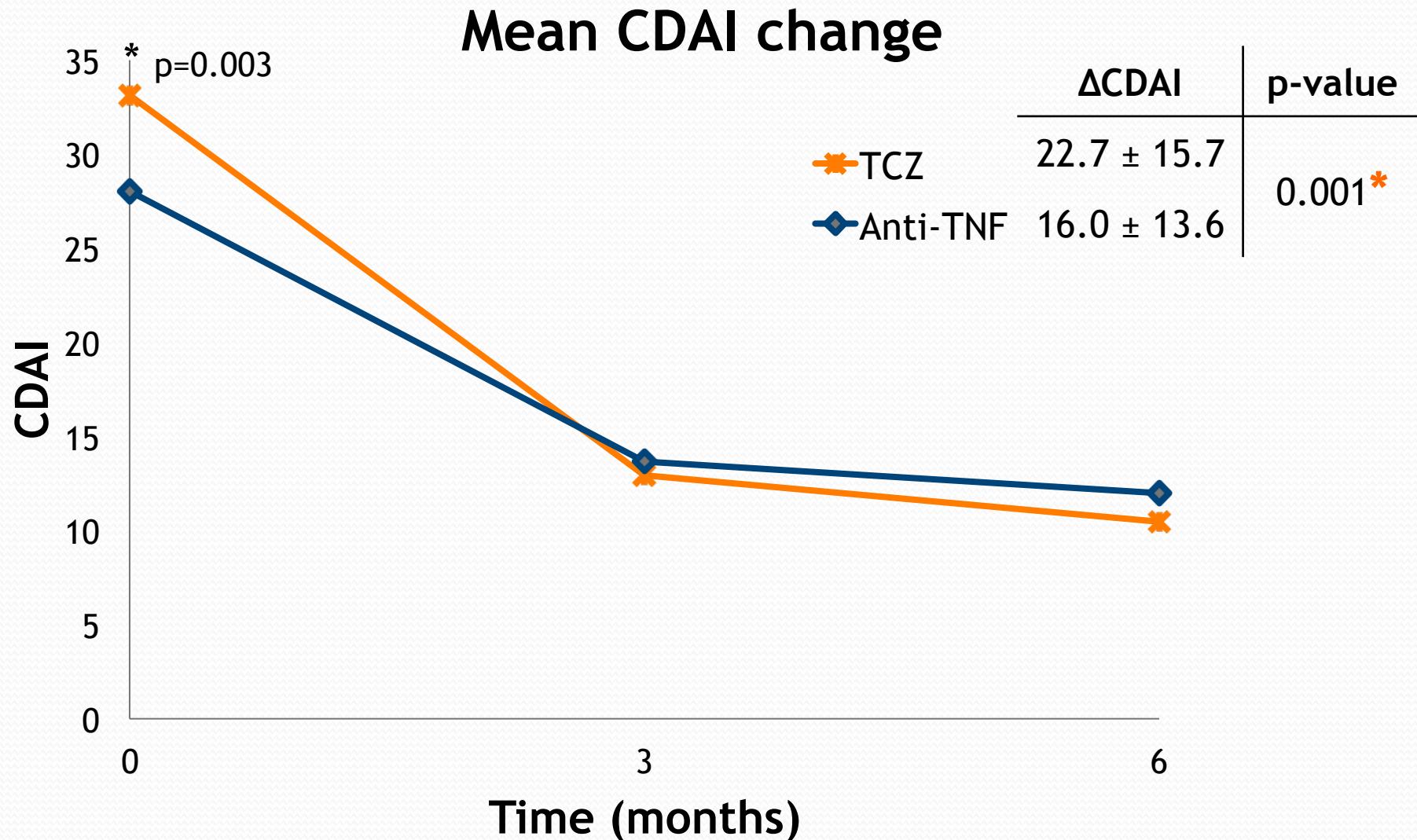
	anti-TNF (429)	Tocilizumab (95)	p
TJC28	10.5 ± 7.6	12.4 ± 7.5	0.028*
SJC28	6.8 ± 5.1	10.4 ± 6.4	<0.001*
ESR (n=522)	37.1 ± 25.6	45.6 ± 27.1	0.004*
CRP (mg/dL, n=491)	2.1 ± 2.7	2.8 ± 3.2	0.035*
Patient VAS (n=496)	58.0 ± 23.2	59.8 ± 24.3	0.496
Physician VAS (n=376)	51.0 ± 19.8	60.0 ± 17.9	0.001*
DAS28	5.4 ± 1.3	6.1 ± 1.1	<0.001*
CDAI (n=376)	28.1 ± 13.6	33.3 ± 13.2	0.003*
SDAI (n=361)	30.4 ± 14.4	35.6 ± 13.1	0.006*
HAQ (n=415)	1.5 ± 0.6	1.6 ± 0.6	0.150

\*p<0.05

# Results

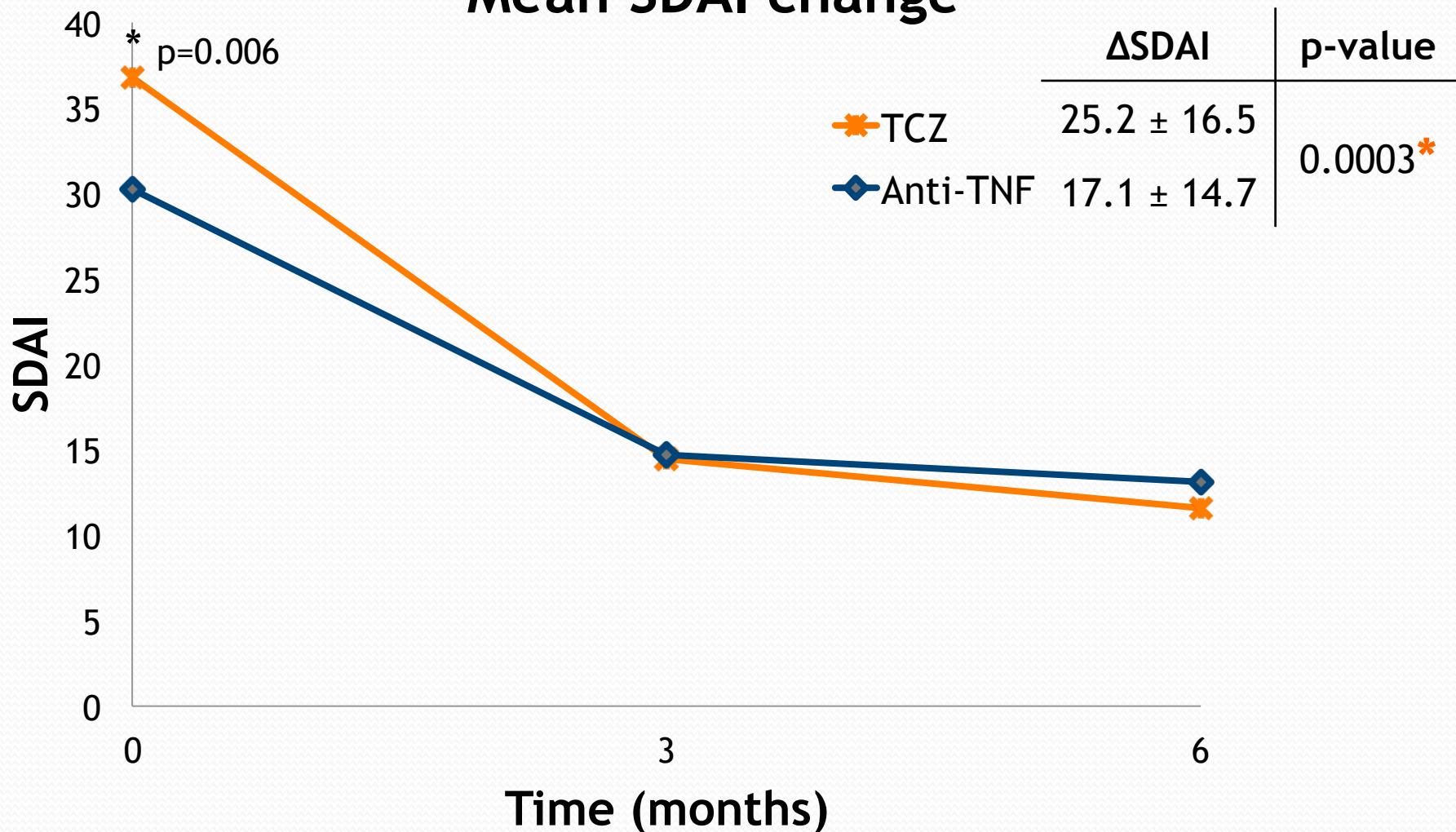


# Results



# Results

## Mean SDAI change



# Results

- Change from baseline at 6 months

	anti-TNF (n=429)	Tocilizumab (n=95)	P
Δ TJC28	6.4 ± 7.2	8.7 ± 7.7	0.006*
Δ SJC28	4.7 ± 4.8	7.8 ± 6.6	<0.001*
Δ ESR (n=516)	12.6 ± 22.2	35.2 ± 25.1	<0.001*
Δ CRP (n=465)	0.9 ± 3.5	2.3 ± 3.2	0.001*
Δ Patient VAS (n=481)	20.5 ± 27.7	25.5 ± 30.0	0.132
Δ Physician VAS (n=327)	25.5 ± 22.2	39.8 ± 25.6	<0.001*
Δ HAQ (n=323)	0.4 ± 0.6	0.6 ± 0.6	0.016*

\*p<0.05

# Results

- Multivariate linear regression models best predicting 6-months change in disease activity

	$\Delta$ DAS28 (n=463)	$\Delta$ CDAI (n=286)	$\Delta$ SDAI (n=261)
Adjusted-R <sup>2</sup>	0.391	0.613	0.563
Covariables	$\beta$ -coefficient (p)	$\beta$ -coefficient (p)	$\beta$ -coefficient (p)
Biologic class (TCZ)	<b>1.45 (&lt;0.001)</b>	<b>4.25 (0.004)</b>	<b>5.39 (0.003)</b>
Number of previous biologics	-0.41 (<0.001)	-2.47 (0.002)	-2.78 (0.004)
Baseline activity	0.54 (<0.001)	0.79 (<0.001)	0.77 (<0.001)
Female gender	-0.40 (0.02)	-1.74 (0.294)	-1.62 (0.412)
ACPA/RF positivity	-0.45 (0.004)	-3.65 (0.013)	-4.75 (0.008)

# Conclusions

- At 6 months, tocilizumab treatment was associated with **greater change** in:
  - DAS28, CDAI, SDAI
  - Joint counts, inflammatory markers
  - HAQ and physician global assessment
- **Change in disease activity** was predicted by:
  - Biologic class
  - Number of previous biologics
  - Baseline disease activity
  - Gender
  - ACPA/RF status



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# Thank you