# Real-World Analysis of Initial Clinical Response and Future Outcomes Among Patients With Rheumatoid Arthritis Initiating and Remaining on a First-Line Tumor Necrosis Factor Inhibitor in the United States

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## OBJECTIVE

- To evaluate the subsequent treatment response among patients with RA who initiated and remained on a first-line TNF inhibitor (TNFi) after achieving or not achieving an initial treatment response

## BACKGROUND

- Current guidelines identify low disease activity (LDA) and remission as treatment targets for RA and recommend evaluation of treatment response and tolerance at 3 and 6 months after initiating a new therapy[1,2]
- TNFis are a common first-line advanced therapy option for patients with inadequate response to, or intolerance of, conventional synthetic DMARDs
  - Still, many patients who initiate TNFis continue with treatment for many months, despite not achieving guideline-recommended treatment targets[3]
- It is currently unknown whether patients who do not achieve an initial response with a first-line TNFi, yet still remain on the same TNFi, are likely to achieve a response at later timepoints

## METHODS

### DATA SOURCE

***OM1® RA Registry***

- The OM1® RA Registry (OM1, Inc; Boston, MA) follows patients in the US managed by rheumatologists longitudinally with data derived from medical and pharmacy claims linked to electronic medical record (EMR) data
  - The registry includes over 200,000 patients with RA since 2013
  - Claims include information on procedures, diagnoses, administered and dispensed medications, and patient insurance
  - EMR data includes laboratory results and prescribing information, patient-reported outcomes, and measures of treatment response and disease activity can be derived

### STUDY DESIGN

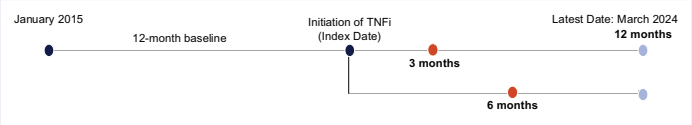
***Inclusion Criteria***

- Patients ≥ 18 years of age, diagnosed with RA, and followed for a 12-month baseline period
- Initiated TNFi as first-line advanced therapy between January 2016 and March 2023
- Received the same TNFi for at least 12 months

## METHODS (CONTINUED)

- Rheumatologist visit with valid CDAI assessment available at:
  - TNFi initiation (index date)
  - 3- or 6-months post-index
  - 12-months post-index
- Moderate or high disease activity (CDAI > 10) at TNFi initiation

### Figure 1. Study Design




TNFi, TNF inhibitor.

### STUDY OUTCOMES

***Two Measures of Initial Treatment Response***

- These outcomes were evaluated in 2 separate analyses at 3-months and 6-months post-index

*Primary Outcome:*

- Proportion of patients achieving CDAI LDA or remission (CDAI ≤ 10)

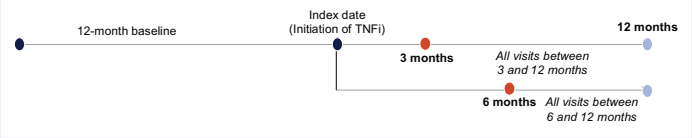
*Secondary Outcome:*

- Proportion of patients achieving minimum clinically important difference (MCID) in CDAI
  - ≥ 6-point improvement from baseline for patients initiating TNFi in moderate disease activity (MDA)
  - ≥ 12-point improvement from baseline for patients initiating TNFi in high disease activity (HDA)

***Two Measures of Subsequent Treatment Response***

- Treatment response status at 12-months post-index
- Maintenance of initial treatment response at all visits between 3- and 12-months or 6- and 12-months post-index

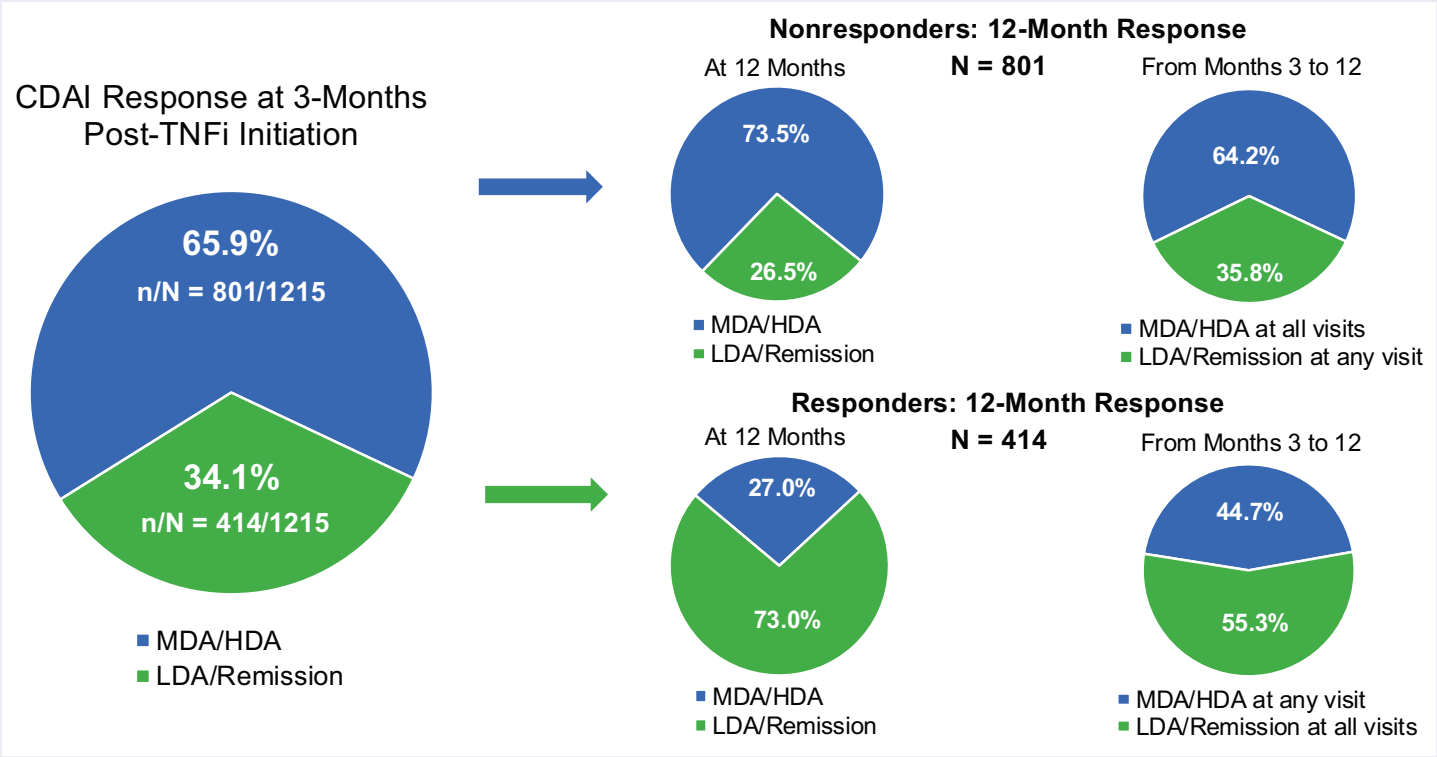
### Figure 2. Study Outcomes




HDA, high disease activity; LDA, low disease activity; MDA, moderate disease activity; TNFi, TNF inhibitor.

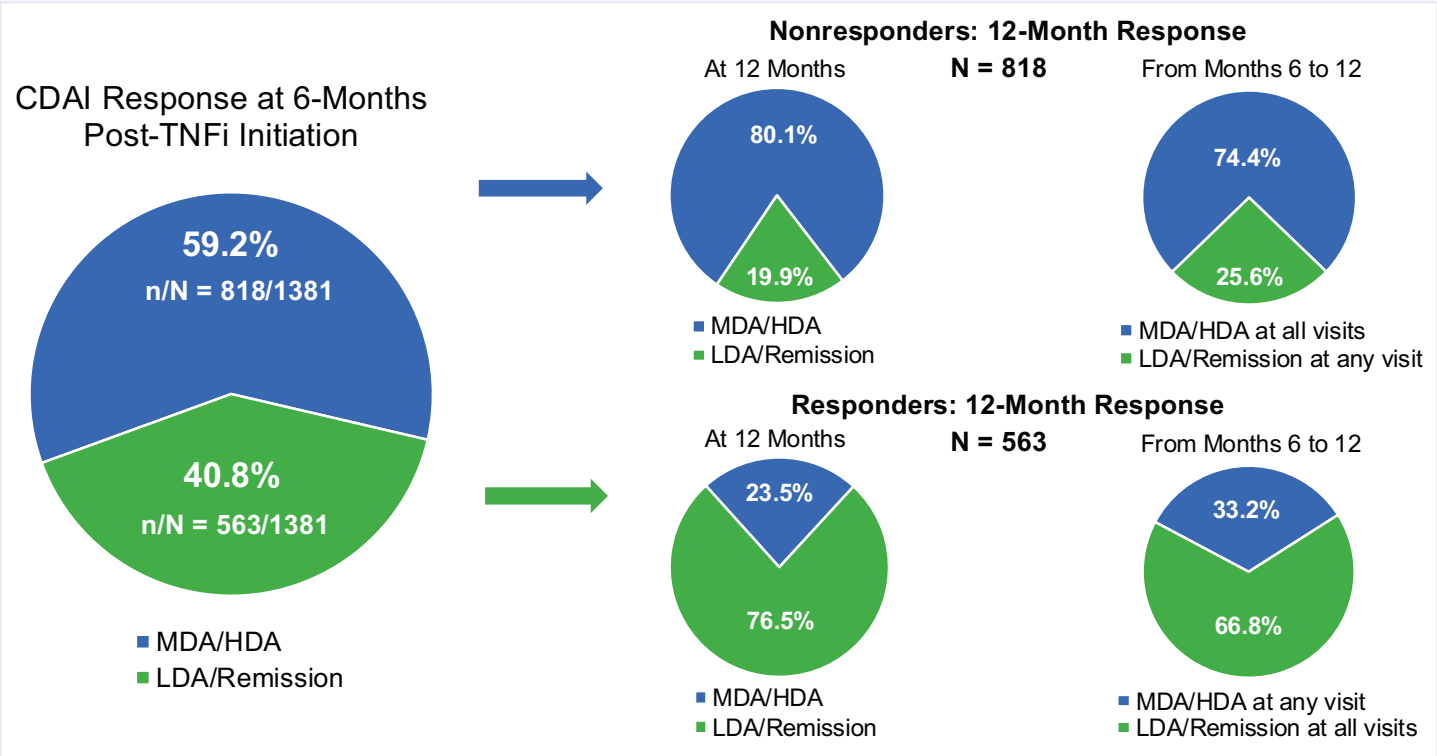
## RESULTS

### Figure 3. Subsequent Response at 12 Months Based on 3-Month Response Status




HDA, high disease activity; LDA, low disease activity; MDA, moderate disease activity; TNFi, TNF inhibitor.

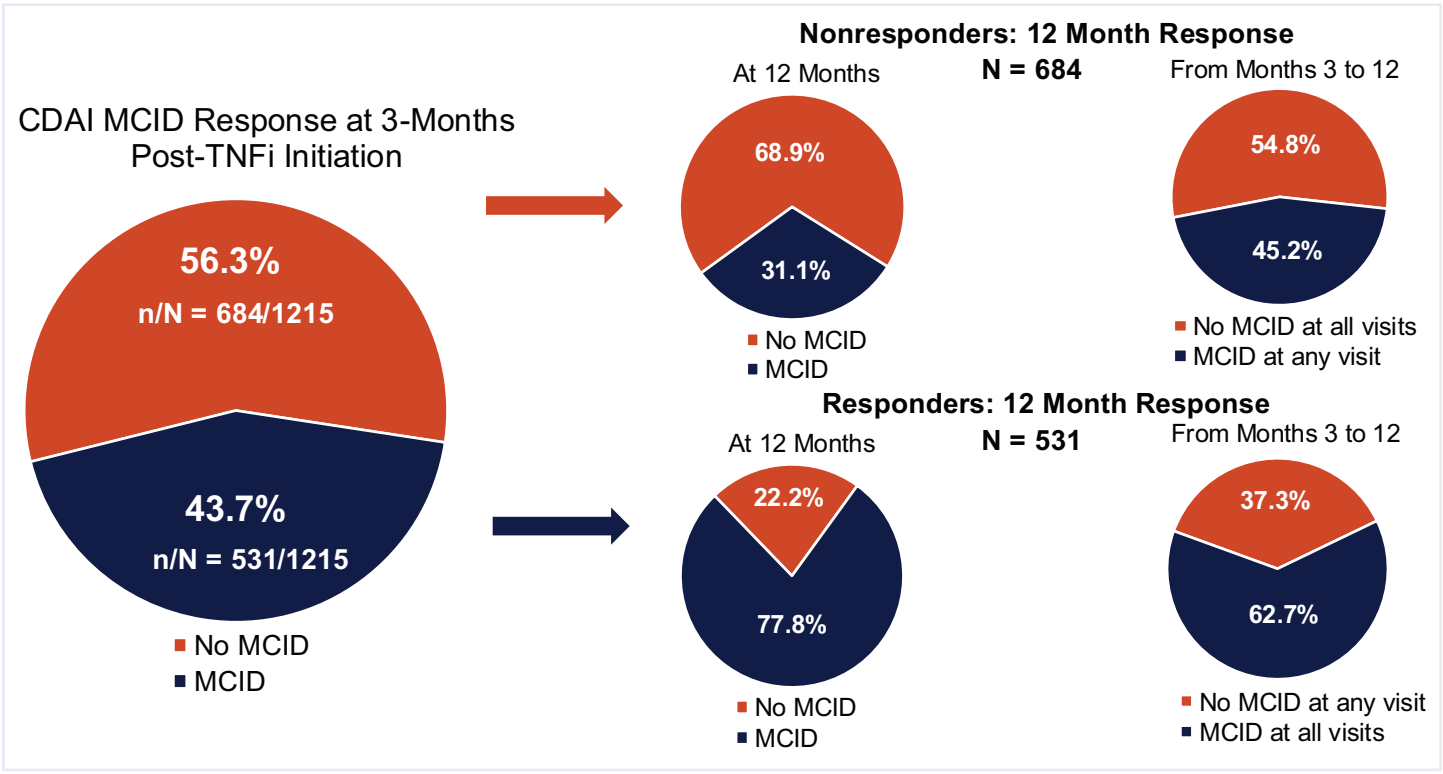
### Figure 4. Subsequent Response at 12 Months Based on 6-Month Response Status




HDA, high disease activity; LDA, low disease activity; MDA, moderate disease activity; TNFi, TNF inhibitor.

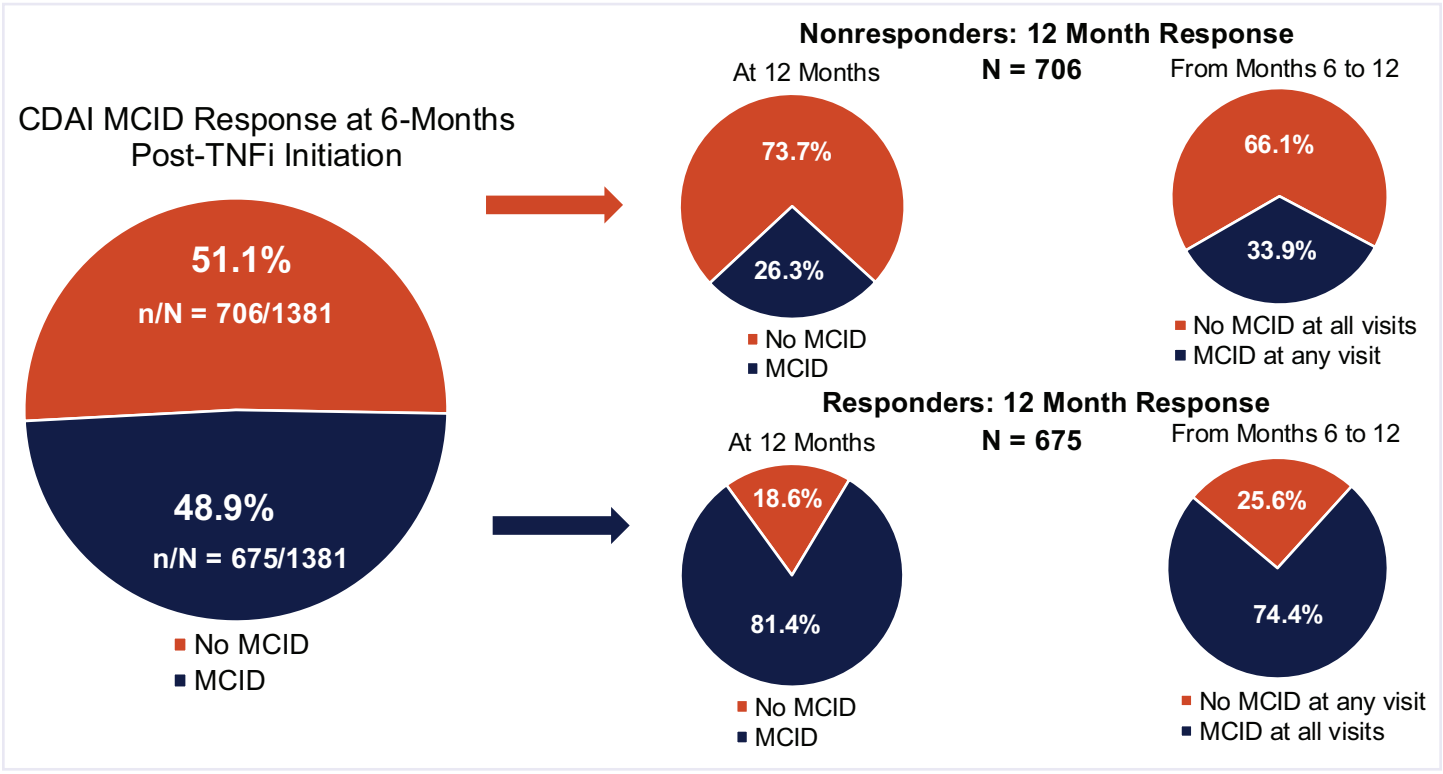
## RESULTS (CONTINUED)

### Figure 5. Subsequent Response at 12 Months Based on 3-Month Response Status




HDA, high disease activity; MCID, minimal clinically important difference; MDA, moderate disease activity; TNFi, TNF inhibitor.
MCID; defined as ≥6-point improvement from baseline CDAI in MDA and ≥ 12-point improvement from baseline CDAI in HDA.

### Figure 6. Subsequent Response at 12 Months Based on 6-Month Response Status




HDA, high disease activity; MCID, minimal clinically important difference; MDA, moderate disease activity; TNFi, TNF inhibitor.
MCID; defined as ≥6-point improvement from baseline CDAI in MDA and ≥ 12-point improvement from baseline CDAI in HDA.

## CONCLUSIONS

- Among patients with RA initiating a first-line TNFi, the majority of those who did not achieve an initial treatment response did not achieve a subsequent response through 12 months
- Approximately 1 in 4 patients who initially achieved LDA/remission were no longer in LDA/remission at 12-months post-index
- These results may inform clinical decision-making on treatment continuation after initial nonresponse in RA patients initiating first-line TNFi therapy

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3. Edgerton C, et al. *ACR Open Rheumatol*. 2024;6(4):179–88.


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