# Gender disparities in the management of rheumatoid arthritis in the US: A real-world evidence study

Rastogi M, Verma V, Nayyar A, Gaur A, Kukreja I, Daral S, Bhalani S, Kathuria S, Chawla S, Brooks L, Khan S, Dutta T

•

## Introduction

Gender disparities in healthcare have been a topic of concern, and it is important to understand these disparities in the management of rheumatoid arthritis (RA)<sup>1</sup>. This study aims to assess gender-based differences in the management of RA, focusing on the influence of gender on the effectiveness of disease-modifying antirheumatic drugs (DMARDs). Understanding these disparities is crucial for optimizing treatment strategies, enhancing patient outcomes, and advancing toward more tailored and effective therapies for individuals with RA.

#### **Objective**

The study aims to assess gender-based disparities in the management of rheumatoid arthritis (RA), focusing on the influence of gender on the effectiveness of disease-modifying antirheumatic drugs (DMARDs). Additionally, it seeks to analyze patient phenotypes based on observed treatment differences.

#### Method

- This retrospective cohort study utilized Optum's Market Clarity integrated administrative claims and electronic health record (EHR) database to identify patients (age ≥ 18 years) diagnosed with RA using ICD-10 CM codes between October 1, 2016, and September 30, 2020, with no previous diagnosis within the preceding year.
- Patients prescribed pharmacotherapy<sup>2</sup>, including methotrexate (MTX) monotherapy, conventional synthetic DMARDs (csDMARDs) excluding MTX, MTX combination therapy with other csDMARDs, biologic DMARDs (bDMARDs) with or without other csDMARDs, or targeted synthetic DMARDs (tsDMARDs) with or without other csDMARDs, were included in the analysis.
- The study assessed the three-year duration of pharmacotherapy and treatment line changes following the index date for patients diagnosed with RA.
- Biomarkers, serological variables, and genetic factors were all included in the analysis of EHR data to identify patient phenotypes and insights that have been documented in the results were discovered.



### Results

- The study population consisted of 74,456 patients, with 56,882 female patients having an average age of 54.47 years (SD=14.15) and 17,574 male patients having an average age of 57.19 years (SD=13.51).
- The initial analysis revealed significant gender-based disparities in the management of RA:
- MTX monotherapy was prescribed as the first-line treatment for 40.08% of males and 33.40% of females. Conversely, csDMARDs excluding MTX were prescribed to 50.06% of females and 38.09% of males. Disparities were also observed in the utilization of bDMARDs, with 13.45% of females and 19.13% of males receiving this treatment.
- Statistical Significance: Chi-square tests conducted on the data revealed statistically significant differences (p<0.001) between males and females in terms of first-line therapy selection.
- Patient phenotype analysis: It was observed that the higher use of cDMARDs in both female and male patients was linked to the presence of human leukocyte antigen (HLA) factors. Additionally, male patients on methotrexate (MTX) monotherapy had higher vascular endothelial growth factor (VEGF) levels compared to other male patients on first-line therapy. Similarly, female patients prescribed cDMARDs excluding MTX had higher VEGF levels than other female patients on first-line treatment.

#### Conclusion

- This study contributes to a better understanding of gender disparities in the management of rheumatoid arthritis, with the potential to inform and improve care delivery for both male and female RA patients.
- The findings suggest that healthcare professionals should consider gender-specific factors when developing treatment strategies, as the observed differences in first-line therapy selection and biologic DMARD utilization may impact disease outcomes and patient experiences.
- More gender-specific biomarkers, serological indicators, and genetic factors may be found by analyzing the EHR data in greater detail. These findings may help develop customized therapeutic methods for the management of RA.
- Limitations: The study's reliance on data from the Optum Market Clarity database may limit the generalizability of the findings to the entire US population. Additionally, the study does not fully account for all potential confounding factors that may influence treatment selection and outcomes, such as comorbidities, socioeconomic status, and patient preferences.

# Optum

© 2024 Optum, Inc. All rights reserved.

**RWD107**