

# Predictors of Improvement in Tender Joint Counts Among Patients with Systemic Lupus Erythematosus in a Large, Representative US-Based Real World Registry Cohort

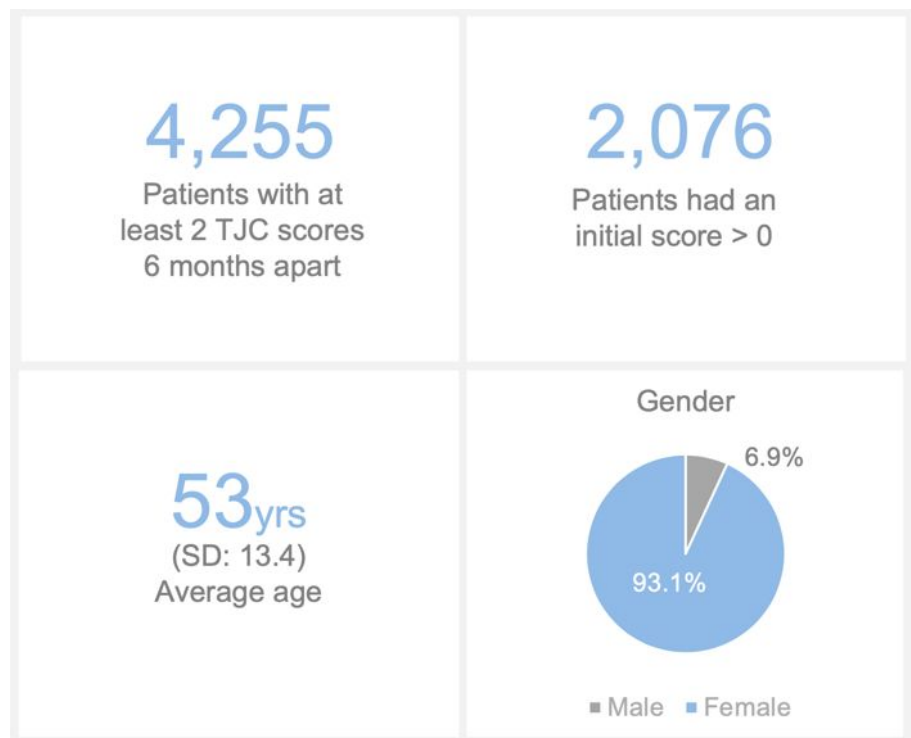
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**Objective:** To identify predictors of improvement in tender joint counts (TJC) over 6 months among patients with systemic lupus erythematosus (SLE).

Data were derived from the **OM1 SLE Registry** (OM1, Boston, MA), an ongoing, representative sample of patients with SLE in the US, followed prospectively by specialists with registry patient data and linked administrative claims (January 2013-December 2019). Patients  $\geq 16$  years of age with TJC scores based on 28 joints were included. Improvement between the initial and 6-month joint counts was measured as a decrease of  $\geq 20\%$  based on American College of Rheumatology standard criteria. Only patients with an initial score greater than zero were included. Candidate predictors of improvements included demographics, comorbidities, medication use, including belimumab and rituximab, and disease activity scores. Age, sex, and race were forced into the logistic model and stepwise regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CIs).

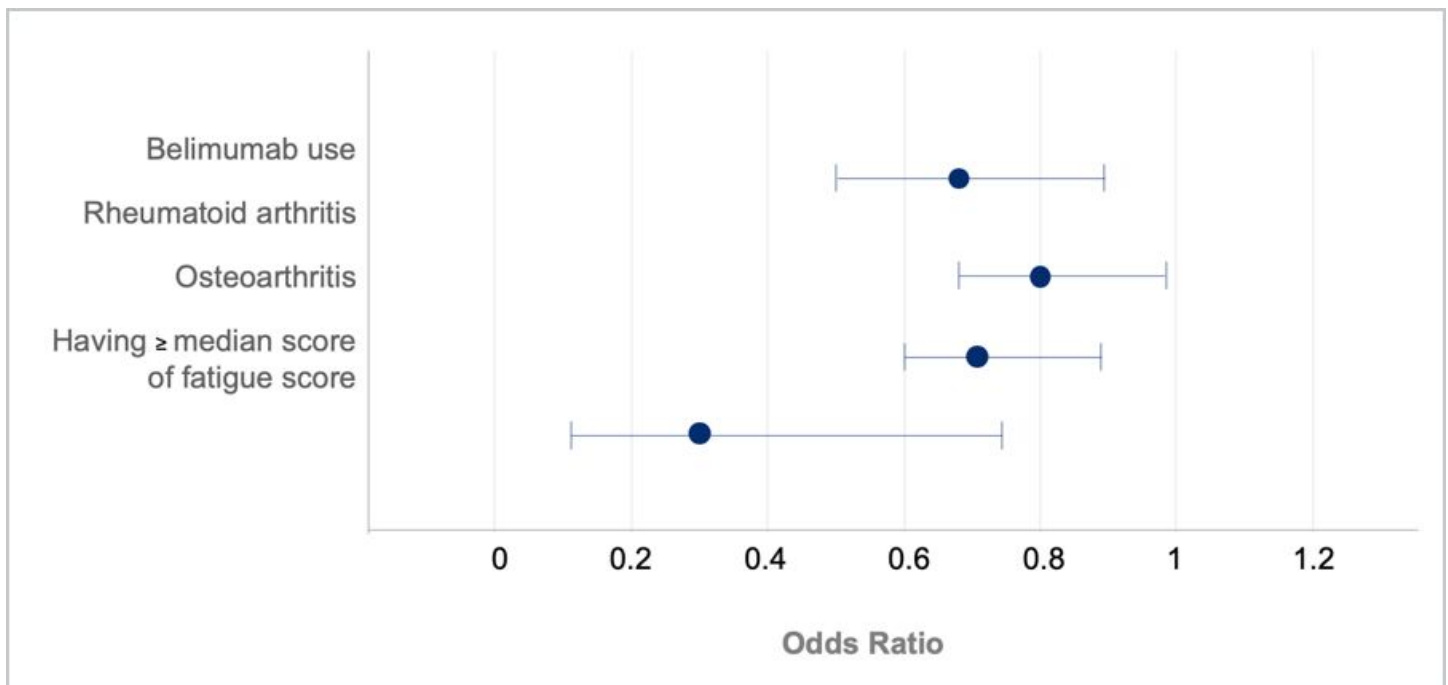
There were 4,255 patients with at least 2 TJC scores 6 months apart; 2,076 patients had an initial score  $> 0$ . Average age was 53.0 (SD: 13.4) and 93.1% were female. [Figure 1]

**Figure 1:** Inclusion & Patient Demographics



All significant predictors were negatively associated with a 20% improvement in TJC: belimumab use between the first and second score (OR = 0.66, 95% CI: 0.50, 0.88), rheumatoid arthritis prior to the second score (OR=0.80, 95% CI: 0.66, 0.97), osteoarthritis (OR=0.73, 95% CI: 0.60, 0.89), and having a fatigue score  $\geq$  the median score (OR = 0.30, 95% CI: 0.12, 0.74) [Figure 2]

**Figure 2** Predictors of Improvement in TJC



## Conclusions

This study provides real-world evidence identifying SLE patients who are less likely to experience joint health improvement. The belimumab findings are likely related to the severity of disease. Additional analysis, including swollen joint counts, are underway.