Late onset rheumatoid arthritis has a similar remission rate as younger onset rheumatoid arthritis: Results from the Ontario Best Practices Research Initiative

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Objectives: We compared the clinical characteristics, time to remission and treatment regimen at remission between late onset rheumatoid arthritis (LORA) and younger onset rheumatoid arthritis (YORA) patients.

Methods: The Ontario Best Practices Research Initiative (OBRI) is a clinical registry of RA patients followed in routine care. This analysis used the OBRI database from 2008 to 2020. Patients were included if they had active RA disease (≥1 swollen joint) and were enrolled in the study within 1 year of diagnosis. LORA was defined as diagnosis of RA after age of 60, YORA as under age of 60. Remission was defined by Disease Activity Score 28 (DAS28) ≤2.6. A multivariable Cox proportional hazards model was used to estimate time to remission.

Results: The study included 354 LORA patients and 518 YORA patients. Compared to YORA patients, LORA patients were less likely to be female (66% vs. 80% p<0.0001), and less likely to have positive either rheumatoid factor or anti-cyclic citrulinated peptide antibody (63% vs. 75% p=0.0003). The mean (standard deviation) baseline DAS28 score was 5.0 (1.3) and 4.8 (1.2) in LORA and YORA patients, respectively (p=0.0946). During the study follow-up, 254 (72%) LORA and 405 (78%) YORA patients reached remission. Compared to YORA patients, the hazard ratio (HR) for remission in LORA patients was 1.10 (95% confidence interval 0.90 to 1.34 p=0.35) after adjusting for other prognostic factors (Table). For patients who reached remission, LORA patients were less likely to be on a biologic or JAK inhibitor (16% vs. 27%) and more likely to be on a single conventional synthetic disease-modifying anti-rheumatic drugs (csDMARD) (34% vs. 27%) compared to YORA patients (chi-square test for all drug groups p=0.0039).

Conclusion: LORA and YORA patients had similar prognosis in terms of time to remission. At remission, LORA patients were more likely to be on a single csDMARD without a biologic or JAK inhibitor. This suggests that LORA patients likely do not require combination DMARD or biologic on initiation. Future studies should evaluate if a standardized treatment protocol tailored to LORA patients improves the safety of RA treatment and remission rate.

Table. Cox proportional hazards model predicting time to remission

Baseline characteristics	Univariate		Multivariable	
Sociodemographic	HR (95% CI)	p-value	HR (95% CI)	p-value
Female gender	0.71 (0.60-0.84)	<.0001	0.87 (0.70-1.09)	0.2256
Post-secondary education	1.26 (1.08-1.47)	0.0039	1.04 (0.87-0.70)	0.6744
Ever smoked	0.87 (0.75-1.02)	0.076	0.93 (0.77-1.12)	0.4269
RA family history	0.89 (0.74-1.07)	0.2176	0.87 (0.70-1.70)	0.1817
Disease characteristics				
Positive rheumatoid factor	1.01 (0.85-1.19)	0.9182	0.94 (0.78-1.14)	0.5381
*HAQ-DI	0.62 (0.55-0.69)	<.0001	0.71 (0.61-0.84)	<.0001
Morning stiffness (>30 mins)	0.71 (0.61-0.83)	<.0001	0.89 (0.73-1.08)	0.2366
Joint erosion	0.94 (0.77-1.14)	0.5224	0.87 (0.70-1.08)	0.1954
DAS28	0.77 (0.72-0.82)	<.0001	0.88 (0.80-0.96)	0.0048
Number of comorbidities	0.83 (0.77-0.88)	<.0001	0.88 (0.81-0.95)	0.0019
Treatment				
Biologic or JAK inhibitor (time variant)	0.86 (0.71-1.03)	0.09	1.53 (0.63-3.69)	0.3485
LORA	0.83 (0.71-0.97)	0.0194	1.10 (0.90-1.34)	0.3593

*HAQ-DI = health assessment questionnaire disability index