Patient Characteristics and Treatment Patterns Across Four Canadian Rheumatoid Arthritis Cohorts

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Objectives: To describe and compare the clinical characteristics and treatment patterns of patients with rheumatoid arthritis (RA) across 4 Canadian cohorts.

Methods: We used data from four RA Canadian longitudinal cohorts in our analyses: The Canadian Early Arthritis Cohort (CATCH), a national inception cohort of patients with early RA (n=2878); Ontario Biologics Registry Initiative (OBRI), an Ontario cohort of patients with RA enrolled at the time of a treatment switch to either a non-biologic DMARD or advanced therapy (biologic of JAK inhibitor) (n=3734); the Quebec cohort RHUMADATA® (n=2890), and The Calgary Rheum4U Precision Health Registry (n=709), which both enroll patients with RA at any stage of disease. Each cohort conducted their own analyses, which were supervised and standardized through a central team. All data was complete up to Jan-Sept 2020. Clinical characteristics and treatment patterns were summarized descriptively and compared between the cohorts.

Results: A total of 10,213 patients with RA were included across the 4 cohorts. Overall, the percentage of patients who entered the cohort with early RA was 63% but ranged from 29% (Rheum4U) to 100% (CATCH), depending on the eligibility criteria. Mean age (55 years), gender (75% female) and seropositivity (69%) were similar between cohorts. At the time of initial DMARD, disease activity scores (DAS-28) varied, ranging from 3.00 (Rheum4U) to 5.17 (CATCH), but were more similar at the time of the first DMARD switch (range:3.54-4.93), first advanced therapy (range:4.23-4.62) and second advanced therapy (range:3.59-4.32). The initial DMARD was most commonly methotrexate, either in monotherapy (32%, range:18%- 40%), dual therapy (34%, range:32%-46%), or triple therapy (3%, range: 1%-10%). Hydroxychloroquine monotherapy as initial DMARD varied from 14% (OBRI) to 29% (RHUMADATA®). The first DMARD switch was to another DMARD monotherapy in 20% (range:10%-22%), dual therapy in 49% (range:39%-56%) triple therapy in 6% (range:2%-20%) and advanced therapy in 24% (range:15%-28%). The first advanced therapy was a TNF inhibitor in 80% (range:78%-82%). Of the 2892 patients who ever started an advanced therapy across the 4 cohorts, 52% were on their first, 22% on their second and 12% on their third and 13% on their fourth or greater.

Conclusion: Canadian RA cohorts that include over 10,000 patients across a range of settings demonstrate some heterogeneity in treatment patterns. This project is a first step towards future efforts to conduct harmonized analyses across Canadian RA cohorts.