Time to Discontinuation of Biologic Therapy by Mechanism of Action in Rheumatoid Arthritis: Results from the Ontario Best Practice Research Initiative (OBRI) Cohort

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ABSTRACT

Objective: Patients with rheumatoid arthritis (RA) may discontinue their biologic disease modifying antirheumatic drug (bDMARDs) due to non-response, loss of response or adverse events. However, time to discontinuation may be related to mechanism of action. We aimed to compare drug survival of tumor necrosis factor inhibitors (TNFi) versus non-TNFi in patients initiating bDMARD treatment in a Canadian (Ontario) observational cohort.

Methods: Patients enrolled in the Ontario Best Practice Research Initiative (OBRI) who started bDMARD therapy within 30 days before or any time after OBRI enrolment were included in the primary analysis. Patients were followed from bDMARD start until discontinuation/switching, death, lost to follow-up, or last visit, whichever came first. Time to discontinuation/switching of bDMARD due to (i) any reason, (ii) non-response, and (iii) adverse events (AEs), were assessed using Kaplan-Meier survival analysis for TNFi versus non-TNFi users. In the secondary analysis we investigated time to bDMARD discontinuation/switching in patients with no exposure to bDMARDs prior to OBRI enrolment (biologic naïve).

Results: Among the 962 patients included in the primary analysis, 174 (18.0%) received non-TNFi and 788 (82.0%) TNFi. Mean (SD) age and disease duration were 55.6 (12.7) years and 8.8 (9.8) years, respectively, and the majority were females (79.4%) and biologic naïve (81.8%). TNFi included Etanercept, Adalimumab, Certolizumab, Golimumab, and Infliximab (Inflectra); and non-TNFi inlcuded Abatacept, Rituximab, and Tocilizumab.

Over a mean (SD) follow-up of 2.0 (1.9) years, bDMARD discontinuation/switching was reported for 39.2% of patients, with not significant difference between TNFi and non-TNFi users (Logrank p=0.09). There was also no significant difference due to non-response (Logrank p=0.82) or adverse events (Logrank p=0.15) between the two groups. At 2 years, more patients remained on TNFi (64.0%) compared to non-TNFi (55.0%). At 5 years, 50% and 43% of patients remained on TNFi and non-TNFi, respectively. A significant difference (Logrank p=0.01) was found when the analysis was restricted to biologic naïve patients, with those receiving TNFi being more likely to remain on their medication.

Conclusions:

Overall retention rate for biologics was comparable to finding in European registries. similar to some studies, we found that patients stay on TNFi longer compared to non-TNFi, particularly in biologic naïve patients. However, there was no significant difference found between the two groups, for discontinuation or switching of bDMARDs due to non-response or adverse events. Further analyses are required to adjust for the effect of potential confounders (e.g. age, sex, disease activity, and other treatment regimens) on biologic discontinuation.

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