



Factors associated with drug survival on first biologic therapy in patients with rheumatoid arthritis: A population-based cohort study

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Background: Although longer drug survival on the first biologic disease modifying antirheumatic drug (bDMARD) in rheumatoid arthritis (RA) usually correlates with early and sustained remission, the choice of bDMARD is often left to the rheumatologist's experience and preference.

Aim: to identify factors associated with longer drug survival on the first bDMARD.

Methods: In a population-based historical prospective cohort study of the computerized database of one HMO, we identified RA patients using relevant ICD-9 codes and gathered their clinical, administrative and medication-dispensing data. Comparing drug survival times on each bDMARD, we identified factors associated with longer survival on the first bDMARD.

Results: Of 9807 RA patients between the years 2000-2017, 4268 patients met the study criteria, Patients were predominantly female (3201, 75%), non-smoker (2426, 81.5%) with mean age 61.2±16.1 years. Of 820 patients (19.2%) receiving at least one bDMARD, most commonly prescribed first bDMARDs were tocilizumab (58, 7.1%), etanercept (352, 42.9%), adalimumab (143, 17.4%), and infliximab (142, 17.3%). Infliximab was associated with longest drug survival (47.1 months ±46.3); tofacitinib was associated with shortest survival (10.2 months ±6.0). Male gender (HR=0.76, 95% CI 0.63 to 0.86, p=0.001) and conventional DMARD use (HR=0.79, 95% CI 0.68 to 0.98, p=.031) were associated with longer drug survival, while calendar year

of bDMARD initiation was inversely associated with longer drug survival (HR=1.12, 95% CI 1.10 to 1.18, p=.0001).

Conclusion: Male gender, concomitant conventional DMARDs and having initiated biologic therapy in an earlier calendar year are associated with longer drug survival times on the first bDMARD.