Tocilizumab, an intra-venous agent, is approved for rheumatoid arthritis (RA) treatment in Canada since April 30th, 2010. It was the sixth approved agent after adalimumab, etanercept, abatacept, infliximab and rituximab. It has been demonstrated that this agent is more effective and has a better safety profile than other biologic agents. In this report, we present a six year effectiveness analysis of tocilizumab in RA patients having failed a first anti-TNF agent and to compare it with adalimumab and etanercept in the same clinical situation.

METHODS

All patients with RA having failed a first anti-TNF agent and subsequently exposed to tocilizumab after the 1st of January 2008 were extracted from the Rhumadata® database. 3 cohorts were created according to the time tocilizumab or the subsequent anti-TNF agents was introduced: One cohort of patients starting tocilizumab and 2 other cohorts starting either adalimumab or etanercept. Demographics and baseline characteristics including age, gender, disease duration, rheumatoid factor and anti-CCP, sed rate, CRP, and ESR, prevalence of smoking, and use of nbDMARDs were included for each cohort. Kaplan-Meyer and Cox proportional hazard models were used to compare survival rates.

BASELINE CHARACTERISTICS

The data from 128 patients prescribed either tocilizumab (44=34%), adalimumab (38=30%) or etanercept (46=36%) as a second biologic agent were extracted from the Rhumadata® registry and clinical database. Most subjects were female (77%) and the average age of the censored cohort subjects was 54.4 (SD=13.2). 69% and 62% of patients were respectively RF+ or anti-CCP+. Mean CRP and ESR were respectively 14.8 (SD=21.5) mg/L and 28.6 (SD=25.2) mm/hr. No clinically significant differences at baseline were observed between groups.

The six year retention rates of tocilizumab, adalimumab, and etanercept as second line biologic agents were respectively 54.6% (CI 35.9-70.0), 22.8% (CI 9.7-39.1), 21.9% (CI 8.9-38.6) respectively. Kaplan-Meier overall survival analysis revealed significant differences in the drug retention rates (log-rank test p<0.0007). Multivariate analysis adjusting for patient characteristics yielded hazard ratios of 2.66 (1.10-6.44), 5.33 (2.30-12.38) when respectively comparing adalimumab and etanercept to tocilizumab. Of the censored patients taking tocilizumab, 35% and 12% were in remission and had low disease activity (LDA) according to the DAS28(CRP) criteria respectively. In censored patients treated with anti-TNF agents, 50% and 17% were in remission and LDA respectively.

CONCLUSIONS

In RA patients having failed their first anti-TNF agent, tocilizumab, an IL-6 inhibitor, is a more valuable alternative than cycling to a second anti-TNF agent. Similarly to previously presented analysis, in patients having failed a first anti-TNF agent, it seems that using an agent with a different mode of action such as abatacept, rituximab or tocilizumab as a second anti-TNF agent delivers better long term retention.