Background: No head-to-head trials have compared biologic treatments for early active RA (ERA). We evaluated the effectiveness of tocilizumab (TCZ) compared with other traditional and biologic DMARDs (tDMARDs and bDMARDs) in adult patients with moderate-to-severe ERA naive to MTX or bDMARDs.

Methods: A literature review identified randomized controlled trials (RCTs) of tDMARDs and bDMARDs in patients with ERA (duration <3 years) reporting efficacy outcomes (proportions of patients achieving ACR scores of 20, 50, 70 and 90; DAS for 28 joints (DAS28)-defined remission (DAS28 <2.6)). Bayesian network meta-analysis was performed. For ACR response, data were analysed using a fixed-effects (FE) ordered probit model. For DAS remission, data were analysed with an FE binomial logit model. The analysis included only results for treatments at licenced doses. Sensitivity analyses were performed for treatment class and inclusion criteria.

Results: 16 RCTs of tDMARDs (MTX, SSZ, HCQ), bDMARDs (abatacept (ABT), adalimumab (ADA), etanercept (ETN), infliximab (IFX), golimumab (GOL), TCZ), and tofacitinib (Tofa) were included. All bDMARDs plus MTX, triple tDMARD therapies, and TCZ and Tofa in monotherapy significantly increased response across all ACR categories versus MTX. Probabilities of ACR response to bDMARDs plus MTX were broadly similar, with no significant differences between agents. Probabilities of ACR response to bDMARDs in monotherapy were more varied, with a trend toward higher values for Tofa and TCZ than for ETN or ADA. Only a subset of studies reported DAS remission. Treatment with Tofa or any bDMARD (±MTX), except ADA alone, improved the likelihood of DAS remission versus MTX. TCZ (±MTX) generated the highest probability of remission among bDMARDs and was significantly more effective than all other bDMARDs (±MTX) and Tofa. Results were robust to sensitivity analyses.

Conclusion: Based on ACR response, the expected efficacy of bDMARDs plus MTX, Tofa and TCZ monotherapy, and triple tDMARD therapy appears comparable in early RA. TCZ and Tofa in monotherapy are more effective than ADA alone and are likely to be more effective than ETN alone. TCZ±MTX is expected to have the highest probability of generating DAS remission.

Disclosure statement: L.S. has acted as a consultant for Roche. S.C. has acted as a consultant for Roche. A.D. has acted as a consultant for Roche. F.D. is an employee of Roche.