

## SUMMARY OF INDIRECT COMPARISONS FOR ts- and b-DMARD FOR THE TREATMENT OF RA

Paul Emery<sup>1</sup>, Jean Dudler<sup>2</sup>, Josef Smolen<sup>3</sup>, Cristiano Zerbini<sup>4</sup>, Gerd Burmester<sup>5</sup>, Bruno Fautrel<sup>6</sup>, Mart van der Laar<sup>7</sup>, Roy Fleischmann<sup>8</sup>, Walid Fakhouri<sup>9</sup>, Francesco De Leonardis<sup>9</sup>, Baojin Zhu<sup>9</sup>, Zbigniew Kadziola<sup>9</sup>, Inmaculada De La Torre<sup>9</sup>, Clementine Perrier<sup>9</sup>, Peter Taylor<sup>10</sup>

<sup>1</sup>Leeds MSK Biomed/Chapel Allerton Hosp, Leeds, United Kingdom;

<sup>2</sup>HFR Fribourg Hopital cantonal, Fribourg, Switzerland;

<sup>3</sup>Medical University of Vienna, Vienna, Austria;

<sup>4</sup>Centro Paulista de Investiga Sao Paulo Clinica, Sao Paulo, Brazil;

<sup>5</sup>Department of Rheumatology and Clinical Immunology, Charité - University Medicine Berlin, Berlin, Germany;

<sup>6</sup>Pierre et Marie Curie, Paris, France

<sup>7</sup>Arthritis Center Twente, Enschede, Netherlands;

<sup>8</sup>University of Texas Southwestern Medical Center, Dallas, Texas, USA

<sup>9</sup>Eli Lilly & Company, Indianapolis, Indiana, USA;

<sup>10</sup>Botnar Research Centre, Univ of Oxford, Headington, United Kingdom

**Background:** In the absence of head-to-head trials comparing baricitinib (BARI) monotherapy with targeted synthetic disease-modifying anti-rheumatic drugs (ts-DMARDs)/biologic (b)-DMARDs, evidence from indirect comparisons becomes important. Here, we summarise findings from recent matching-adjusted indirect comparison (MAIC) and network meta-analysis (NMA), conducted in conventional synthetic (cs)-DMARD-naïve and methotrexate inadequate responder (MTX-IR) populations, respectively.

**Methods:** Systematic literature reviews were performed for both MAIC and NMA analyses. For MAIC, pain (visual analog scale [VAS], 0-100 mm) and HAQ-DI were evaluated. Individual patient data from RA-BEGIN BARI 4-mg arm were weighted to match baseline characteristics of adalimumab (ADA) 40-mg arm from PREMIER, tofacitinib (TOFA) 5-mg arm from ORAL-START, and tocilizumab (TCZ) 8-mg/kg arm from combination of AMBITION and FUNCTION, respectively; MTX arms were also matched between trials. After adjustment, mean changes in pain VAS and HAQ-DI at Week 24 for BARI were indirectly compared with published results for Week 24 TCZ and TOFA and for week 26 ADA data. Sensitivity analyses included MAIC with study-level matching, and Bucher's method. Here, we report results of matching by treatment arm. Network meta-analyses of randomized clinical trials reporting the American College of Rheumatology (ACR) response data (24 trials) were conducted on approved drug dosages using Bayesian mixed-treatment comparisons. Here, we present main results at week 24 ( $\pm 4$ ; fixed effects simultaneous models) in patients who received BARI or other ts-/b-DMARDs, and background MTX.

**Results:** Across MAIC trials, the mean baseline pain VAS ranged from 58.7 to 65.2 with a 6-month mean change in pain of – 28.3 to – 33.5 for the MTX arm, indicating comparability between trials. Similar HAQ-DI and changes in HAQ-DI for the MTX arm were observed. At week 24, statistically significant pain improvements were observed for BARI vs ADA ( $p \leq 0.001$ ) and TCZ ( $p \leq 0.05$ ). For TOFA, statistically significant pain improvement was observed only with Bucher method ( $p \leq 0.05$ ). Baricitinib-treated patients showed significantly greater improvement in HAQ-DI at Week 24 than TCZ ( $p \leq 0.05$ ) and ADA ( $p \leq 0.001$ ), but not TOFA. MAIC with study-level matching showed consistent results. Network meta-analyses, using BARI RA-BEAM trial data, showed BARI 4-mg to be more effective than ADA (odds ratio [OR] 1.33; 95%-credible interval [CrI] 1.01-1.75), abatacept (ABA) (OR 1.47; 95%-CrI 1.02-2.13), infliximab (OR 1.61; 95%-CrI 1.12-2.27), for ACR20. While no differences were found on ACR50, BARI 4-mg was found to be more effective than ADA and ABA for ACR70.

**Conclusion:** In csDMARD-naïve patients with RA, results from MAIC showed greater pain reduction and HAQ-DI improvement for BARI monotherapy vs. TCZ and ADA monotherapy. There was a suggestion of greater pain reduction with BARI monotherapy vs. TOFA monotherapy, but no differences in improved physical function between the two. Results from NMA support advantage of BARI as treatment option for patients with moderate-to-severe RA with inadequate response to MTX