cells decreased in the remission group. The analysis of T cells classified according to chemokine receptors showed that memory (29.1 ± 4.0 vs $22.7 \pm 2.7 \times 10^4$ cells/mL; $p=0.06$) and naïve (22.6 ± 4.1 vs 17.2 ± 2.8 ; $p=0.04$) CD4 +with CXCR3 +and with CCR4 +were the subsets that decreased significantly in the remission group but not in the non-remission group. Since the expression of chemokine receptors defines the different Th subpopulations, we analysed them in the two groups of patients. Th1 tended to decreased in the remission group (3.5 ± 0.7 vs 2.5 ± 0.4 ; $p=0.06$) and Th9 decreased significantly in both groups ($R: 5.0 \pm 0.8$ vs 2.5 ± 0.3 ; $p=0.006$ and Non $R 5.5 \pm 0.8$ vs 3.1 ± 0.4 ; $p=0.001$). In regard to the cytokines produced by CD4 +T lymphocytes, IL-17 (2.1 ± 1.1 vs 1.2 ± 0.5 ng/ml; $p=0.04$) and VEGF (0.5 ± 0.2 vs 0.3 ± 0.1 ng/ml; $p=0.05$) but not IL-6 and IL-22 changed significantly in the remission group. Interestingly, IL-17 and VEGF correlated with US findings before the initiation of the treatment (grey scale $R=0.378$, $p=0.01$ and $R=0.322$, $p=0.03$; power Doppler $R=0.415$, $p=0.004$ and $R=0.320$, $p=0.03$ respectively).

Conclusions: Tocilizumab induced changes in specific subsets of CD4 +T cells and their inflammatory associated cytokines in the remission group.

Disclosure of Interest: None declared

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AB0425 PREVALENCE AND RISK FACTORS OF SERIOUS INFECTIONS IN RHEUMATOID ARTHRITIS PATIENTS RECEIVING THE BIOLOGIC/TARGETED SYNTHETIC DMARDS: A PROPENSITY SCORE ANALYSIS FROM THE HONG KONG BIOLOGICS REGISTRY

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Objectives: To study the prevalence and risk factors for serious infections in rheumatoid arthritis (RA) patients receiving the biologic/target synthetic (b/ts) DMARDs.

Methods: Patients who fulfilled the EULAR/ACR criteria for RA and were ever treated with b/tsDMARDs were included. Withdrawal of b/tsDMARDs due to serious adverse events (SAEs) and serious infections (SIs) was analysed. Demographic data, medical comorbidities and concomitant use of glucocorticoids and csDMARDs were retrieved and their contribution to SIs was evaluated by logistic regression. The propensity score for SIs was calculated and patients were stratified into 5 quintiles. The hazard ratios (HRs) of SIs with respect to individual b/tsDMARDs in each quintile were studied by Cox regression.

Results: Up to December 2017, 2355 courses of b/tsDMARDs were used in 1355 RA patients (83% women; age 54.0 ± 12.7 years). The usage of various b/tsDMARDs was: adalimumab (12%), etanercept (24%), infliximab (17%), golimumab (9.4%), certolizumab (0.9%), tocilizumab (19%), rituximab (6.6%), abatacept (7.7%) and tofacitinib (2.7%). After a follow-up of 5056 patient-years, 1433 courses of b/tsDMARDs were discontinued, with major reasons being inefficacy (50%), SAEs (22.4%) and cost (8.4%). Among those b/tsDMARD courses terminated because of SAEs, 32% were due to SIs (103 episodes). The rate of SIs was 1.17/100 patient-years. The commonest causes of SIs were pulmonary tuberculosis (TB) (41%), severe pneumonia (33%), soft tissue infection (6.8%), atypical TB (2.9%), urogenital sepsis (2.9%), septic arthritis (2.9%), hepatobiliary/gastrointestinal sepsis (2.9%), central nervous infection (1%), severe viral infections including herpes zoster (5.8%), and opportunistic infections (2.9%). A logistic regression model showed that increasing age (OR1.02 [1.001–1.04 per year]), male sex (OR1.88 [1.08–3.26]) and concomitant chronic obstructive pulmonary disease/asthma (OR2.55 [1.05–6.23]) were risk factors significantly associated with SIs. The rate of TB infection was highest in users of infliximab (2.32/100 patient-years), followed by tofacitinib (1.47), adalimumab (1.27), etanercept (0.62) and tocilizumab (0.36). Non-TB SIs occurred most frequently with infliximab (2.32/100 patient-years), tofacitinib (1.47) and abatacept (1.15). In the quintile of patients with the highest propensity score for SIs, infliximab had the highest withdrawal rate due to SIs (18%), followed by tofacitinib (10%), etanercept (8%), adalimumab (6%), abatacept (2.8%) and tocilizumab (2.6%). Cox regression revealed the following HRs for SIs with reference to adalimumab: infliximab (2.81 [0.80–9.88]), tofacitinib (HR 2.12 [0.19–23.4]), etanercept (HR 0.82 [0.22–3.11]), abatacept (HR 0.41 [0.04–3.98]) and tocilizumab (HR 0.38 [0.06–2.26]). Concomitant low-dose glucocorticoid was associated with an insignificantly increased risk of SIs only in the three quintiles of patients with lower propensity to SIs.

Conclusions: SIs causing withdrawal of b/tsDMARDs in patients with RA account for one-third of all SAEs. Increasing age, male sex and concomitant chronic chest conditions were independent risk factors for SIs. Infliximab was associated with the highest rates of serious TB and non-TB infection, and this observation was consistent in all quintiles of patients with different propensity to SIs.

Disclosure of Interest: None declared

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AB0426 EFFICACY OF MONOTHERAPY OF THE BIOLOGIC DMARDS IN PATIENTS WITH RHEUMATOID ARTHRITIS: REAL LIFE DATA FROM THE HONG KONG BIOLOGICS REGISTRY

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Objectives: To report the prevalence and efficacy of biologic DMARD (bDMARD) monotherapy in real life treatment of rheumatoid arthritis (RA).

Methods: RA patients registered in the Hong Kong Biologics Registry who were receiving bDMARD monotherapy (without concomitant conventional synthetic DMARDs [csDMARDs] except low dose prednisolone) were identified. The efficacy (clinical response and drug retention rate) of bDMARD monotherapy was compared with bDMARD combination therapy (with csDMARDs) using statistical tests.

Results: From December 2007 to April 2017, 2123 courses of bDMARDs/tsDMARDs were used in 1250 RA patients (83% women, mean age at therapy 53.8 ± 12.7 years). Among 1881 courses of therapies with complete data, 164 (8.7%) was monotherapy at baseline. Low dose prednisolone (<10 mg/day) was used in 56% of these courses. In the combination group, the commonest csDMARDs used in combination with bDMARDs were methotrexate (79%), sulphasalazine (27%), hydroxychloroquine (25%) and leflunomide (21%). The bDMARDs/tsDMARDs most frequently used as monotherapy were tofacitinib (14.3%), tocilizumab (11.6%) and abatacept (11.2%). Overall, the non-TNF was more commonly used as monotherapy (11.2%) than the anti-TNF bDMARDs (7.4%). At 6 months of bDMARD/tsDMARD therapy, the DAS remission rate was non-significantly higher in the combination than monotherapy group (11% vs 5%; $p=0.42$). The change in DAS28 score was also non-significantly greater in the combination group (-1.95 ± 1.26 vs -1.68 ± 1.56 ; $p=0.30$). The difference in 6 month efficacy between the combination and monotherapy groups was greater in anti-TNF users. The overall cumulative withdrawal rate of the bDMARDs/tsDMARDs due to either inefficacy or serious adverse events (SAEs) was 0.55 at 3 years and 0.47 at 5 years. The anti-TNF biologics had a significantly higher withdrawal rate than the non-TNF biologics (hazard ratio [HR] 1.83 [1.56–3.14]; $p<0.001$). In Cox regression models, monotherapy of the bDMARDs was not significantly associated with drug withdrawal due to inefficacy (HR 0.95 [0.53–1.71]; $p=0.87$) or SAEs (HR 1.27 [0.51–3.19]; $p=0.61$) after adjustment for age, sex, anti-TNF (vs non-TNF) biologic use, previous use of bDMARDs (vs first time use) and DAS28 at baseline. Separate analyses of the anti-TNF and non-TNF biologics again did not reveal a significant relationship between monotherapy of the biologics with the drug withdrawal due to inefficacy or SAEs after adjustment for age, sex, previous use of bDMARDs and disease activity at baseline (HR 1.002 [0.56–1.80]; $p=0.99$ for anti-TNF and HR 1.20 [0.47–3.08]; $p=0.70$ for non-TNF biologics, respectively).

Conclusions: Monotherapy of bDMARD/tsDMARD was used in 8.7% of our RA patients in real life practice, probably due to intolerance, inefficacy or non-compliance to the csDMARDs. Short-term efficacy tended to be better with bDMARDs/csDMARDs combination, especially in the anti-TNF biologics, but the long-term drug retention rate was similar between bDMARD monotherapy and combination therapy with the csDMARDs.

Disclosure of Interest: None declared

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AB0427 COMPARATIVE SAFETY OF ABACEPT VS TOFACITINIB IN ADULTS WITH MODERATE-TO-SEVERE RA: A SYSTEMATIC LITERATURE REVIEW AND NETWORK META-ANALYSIS

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Background: While targeted (biologic or synthetic) DMARDs are overall highly effective in improving symptoms and function in RA patients (pts), their comparative safety relative to each other remains inconclusive.

Objectives: Compare the safety of abatacept (ABA) and tofacitinib (TOF) through a systematic literature review (SLR) and network meta-analyses (NMA).

Methods: A comprehensive search of randomised and non-randomised clinical trials was conducted across MEDLINE, Embase and Cochrane CENTRAL databases from inception to June 2017. The PICO framework (population=moderate to severe RA pts; intervention=ABA and TOF; comparison=placebo and other RA therapies; outcome=AEs, treatment-related AEs [TrAEs], serious infections and treatment-related deaths) was used to design searches and define the eligibility of studies for inclusion. Additional searches were performed on relevant conference proceedings and the US clinical trials registry from the past 2 years (figure 1). Data configuration was performed by expert methodologists using DOC Data 2.0 (Doctor Evidence, Santa Monica, CA). NMAs using the random-effects model were used to examine the risk of AEs, TrAEs and serious infections in

conventional DMARD-experienced ABA- and TOF-treated pts. Treatment-related death was not analysed in an NMA due to insufficient data.

Results: Thirty-one randomised controlled trials ($n=13,978$) were included for data extraction. Of these, ABA and TOF were examined in 16 and 15 trials, respectively. There were no head-to-head comparisons of ABA vs TOF. Most of the trial population were Caucasian (48%–98% across trials), had an average age ranging from 40 to 60 years and were predominantly female (60%–90%). Of the trials, 26 included a US population and 5 a non-US population. Out of 11 studies reporting treatment-related mortality, one study reported four deaths for pts on TOF 5 mg ($n=321$) within a 1 year follow-up. No such deaths were reported for ABA pts. The NMAs showed no significant differences in the risk of TrAEs for pts on TOF 5 or 10 mg compared with ABA with/without MTX (TOF 5 mg +MTX vs ABA+MTX: risk ratio [RR] 1.1, 95% CI: 0.77, 1.5; TOF 10 mg vs ABA: RR 1.1, 95% CI: 0.78, 1.6). These findings remained consistent for the risk of total AEs and serious infections.

Abstract AB0427 – Figure 1. PRISMA Diagram Showing Study Selection

*One reference identified manually from a ClinicalTrials.gov record

[†]Wrong publication date cut-off: meeting abstract published before 2015

Conclusions: Without head-to-head trials, the data available to make comparisons between abatacept and TOF are limited. Even after conducting an SLR and NMAs, precision is lacking in estimating differences. Additional studies, such as real-world observational analyses with larger patient samples and higher incidence of measured outcomes, are needed to further examine the safety differences of abatacept vs TOF.

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AB0428 PREFERENCES IN THE USE OF BIOLOGIC DRUGS AND ADVERSE EVENTS IN PATIENTS WITH RHEUMATIC DISEASE FROM A NATIONAL BIOLOGICS REGISTRY IN MÉXICO

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Background: National registries of biologic drugs have proven to be valuable tools in following patients with rheumatic disease and some outcomes in real-life situations.

Objectives: The objective of this study was to describe Mexican Rheumatologists' preferences when treating patients with biologic drugs and to analyse factors associated to the use of this therapy.

Methods: Data from patients undergoing biologic treatment in México is gathered into the BIOBADAMEX online database, which is part of the BIOBADAMERICA

initiative and based on the BIOBADASER Phase 3 platform. Phase 3 in México started gathering patient data in April 2016 and to date has information on 216 patients. The database collects information such as gender, age, diagnosis, disease duration, biologic treatment, DMARD treatment, concomitant therapy, motives for discontinuation of biologics, comorbidities, adverse event (AE) severity, infection site and germ involved. Descriptive statistics were applied on the data collected from April 2016 to January 2018.

Results: We analysed data on the use of 267 biologic treatments in 216 patients. Most of them receive biologic therapy through socialised medical insurance programs which may have led to bias. 89.1% of patients were female, mean age 49 ± 15.2 (4–85) years, 42.5% belonging to the <50 group. 69.9% of patients in the registry have RA, 12.5% AS and 5.5% PsA. Mean disease duration is 11 ± 8.9 (0–58) years. The most commonly used biologic overall is Abatacept (15.3%), followed by Adalimumab (13.8%), Tocilizumab (11.2%), Certolizumab (10.1%), Golimumab (8.6%), Rituximab (8.2%), Etanercept biosimilar (7.4%), Etanercept (6.3%), Infliximab (4.1%) and Benlystia (1.1%). All others, including JAK inhibitors, are used in <1% of patients. The preference for first biologic drug was Etanercept (32.4%), followed by Adalimumab (12%), Infliximab (8.3%), Rituximab and Tocilizumab (5.5% each) and Abatacept (2.7%). Most treatments were stopped due to lack of efficacy (60.4%), disease remission (7.4%), other causes (20.1%), AE (4.4%), with the rest of the causes each affecting <5% of patients. The most commonly used DMARD were Methotrexate (49.8%), steroids (33.3%) and leflunomide (23.2%). Comorbidities were present in 87 patients (40%), the most common being Hypertension (13.4%), Diabetes (7.8%) and Dyslipidemia (6.9%). Non-lymphoma neoplasms were reported in 1.3%. 25% of AE were considered serious but most (70%) were mild. Only 6 patients reported infections with the most common sites being the skin (33.3%), urinary tract (16.6%) and middle-ear (16.6%). The causal germ was often undetermined (60%).

Conclusions: When using biologic drugs, TNF inhibitors are the most commonly used initial mechanism of action for the treatment of rheumatic diseases in the BIOBADAMEX registry. Upon treatment failure, patients undergo a switch to another mechanism of action, mainly using Abatacept. Adverse events and infections related to the use of biologics are infrequent, but 40% of patients present chronic comorbidities.

Disclosure of Interest: D. Xibillé Speakers bureau: Abbvie, Pfizer, BMS, S. Carrillo Speakers bureau: Abbvie, Pfizer, BMS, Roche, S. Sicsik Speakers bureau: Roche, Pfizer, BMS, F. Irazoque Speakers bureau: Abbvie, Pfizer, BMS, Roche, A. Ramos: None declared, S. Durán: None declared, M. Saavedra: None declared, L. Barile Speakers bureau: Abbvie, Pfizer, BMS, Roche, G. Olvera: None declared

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AB0429 NO DIFFERENCE IN EFFECTIVENESS WITH EITHER ETANERCEPT ORIGINATOR OR BIOSIMILAR AS FIRST LINE BIOLOGIC TREATMENT FOR RHEUMATOID ARTHRITIS

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Background: Biosimilars and their reference agents have been shown to be equivalent in clinical trials. In the United Kingdom, etanercept biosimilars (ETA-B) are, since 2016, a first-line treatment option for the management of severe rheumatoid arthritis (RA) defined as no response to 2 or more csDMARDs. However, real world data, including how it compares to the etanercept originator (ETA-O) are lacking.

Objectives: This study aims to compare the short-term effectiveness of etanercept originator with its biosimilar in patients with RA when used as a first biologic following csDMARDs.

Methods: This study included patients with RA registered with the British Society for Rheumatology Biologics Registers for RA (BSRBR-RA) at the point of starting either ETA-O or an ETA-B since 2011 as their first biologic. Baseline information is collected at drug start and includes demographic and clinical data. Follow-up (FU) data are captured every 6 months and include details on therapy changes, current disease activity, and development of any adverse events. The primary outcome of this study is effectiveness as calculated by change in the 28 joint count disease activity score (DAS28). Only patients with a complete DAS28 at baseline and their 1st FU were included in the final analysis of this study. Hazard ratios (HR) comparing drug survival and risk of first serious adverse event (SAE) between ETA-O and ETA-B patients were calculated using Cox regression.

Results: Between January 2010 and 11 December 2017, 1217 and 412 patients starting ETA-O or ETA-B respectively were recruited and had ≥ 1 FU available. Complete DAS28 data at baseline and 1st FU were available for 740 ETA-O patients and 177 ETA-B patients. Patient characteristics were similar between the 2 cohorts (Table). After adjusting for baseline differences, no difference between groups was seen in DAS28 ($p=0.1$) or remission status ($p=0.1$) at 1st FU.