for 30 weeks (treatment period 1). The primary endpoint was a ≥20% improvement in ACR response (ACR20) at Wk 14. At Wk 30 (treatment period 2 [TP2]), patients receiving IFX-EU were blindly re-randomised (1:1) to remain on IFX-EU or transition to TP1111 for 24 wks. Here we report longer-term efficacy, safety and immunogenicity data from Wks 30–54.

**Results:** 850 patients were randomised initially (GP111, n=324; IFX-EU, n=326). At Wk 30, 556 patients entered TP2 (continued GP1111, n=280; continued IFX-EU, n=143; switched from IFX-EU to GP1111, n=143). ACR20 rates and DAS28-ESR28 scores were comparable between groups at all TP2 visits after re-randomisation in the TP2 population (Figure 1). Incidences of TP2 treatment-emergent adverse events (AEs) (36.6%, 33.6% and 37.8%), serious AEs (4.6%, 7.7% and 2.8%) and infusion-related reactions (3.2%, 8.4% and 4.2%) were comparable between the GP1111/GP1111, IFX-EU/IFX-EU, and IFX-EU/GP1111 groups, respectively. Pre-dose ADA rates at Wk 30 (TP2) were 47.1%, 53.8% and 45.5% for the GP1111/GP1111, IFX-EU/IFX-EU, and IFX-EU/GP1111 groups, respectively. Overall, post-dose ADA rates in TP2 were comparable between groups (52.1%, 60.1% and 58.0% respectively).

**Abstract FR0137 – Figure 1.** ACR20 response rate and change in DAS28-ESR score at Wks 30 and 54 for the overall population during TP2

**Conclusions:** Results from TP2 (Wks 30–54) continued to show the absence of clinically meaningful differences in efficacy, safety and immunogenicity between patients with RA remaining on GP1111 or IFX-EU, or when blindly switched from IFX-EU to GP1111.


**FR0139**

**COMPARATIVE SAFETY OF ABACETAP IN RHEUMATOID ARTHRITIS WITH COPD: A REAL-WORLD POPULATION-BASED OBSERVATIONAL STUDY**

S. Suissa1, P. Ernst1, S. Dell’Anello1, S. Shen2, T.A. Simon1

**McGill University, Montreal, Canada; ²Bristol-Myers Squibb, Princeton, USA**

**Background:** In the ASSURE trial (NCT00048932) comparing abatacept with placebo for the treatment of RA, there was an increased incidence of respiratory serious adverse events (SAEs; COPD exacerbation/worsening, bronchitis and pneumonia) in those receiving abatacept among the subgroup of 54 patients with a history of chronic obstructive pulmonary disease (COPD).1

**Objectives:** To assess whether patients with RA and a history of co-morbid COPD treated with abatacept in a real-world, observational setting, have an increased risk of respiratory SAEs compared with similar patients treated with other biologic (b)DMARDs or the targeted synthetic DMARD tofacitinib (tofa).

**Methods:** The Truven MarketScan® Commercial and Supplemental Medicare databases were used to identify adult patients diagnosed with RA and COPD who were treated with abatacept, another bDMARD or tofa between March 2007 and December 2015. Other bDMARDs included adalimumab, anakinra, certolizumab, etanercept, golimumab, infliximab, rituximab and tocilizumab. A prevalent new-user study cohort design was used in which each new user of abatacept was time- and propensity score-matched to two new users of other bDMARDs or tofa. Patients were required to have ≥6 months of continuous health plan enrolment before cohort entry and were followed up until the end of enrolment in the database or 31 December 2015. Propensity scores of abatacept treatment were estimated separately in incident new users and prevalent new users. Patients with score ranges common to both abatacept and the comparator cohorts were included. An ensemble classification analysis based on the Cox proportional hazard regression model was used to estimate the hazard ratios (HRs) of respiratory SAEs associated with abatacept compared with other bDMARDs or tofa, further adjusted for confounders found to be unbalanced despite matching on propensity scores.

**Results:** A total of 9746 patients with RA and COPD initiated bDMARD or tofa therapy and included 1807 new users of abatacept matched to 3547 new users of another bDMARD or tofa. The matched cohort was followed for up to 9 years (mean 2.0 years); 53% were incident users. For users of abatacept relative to other bDMARDs or tofa, the adjusted HRs (95% CI) of respiratory SAEs were: (mean 2.0 years); 53% were incident users. For users of abatacept relative to other bDMARDs or tofa, the adjusted HRs (95% CI) of respiratory SAEs were:
INDIVIDUALISED INFlixIMAB TREATMENT: A TREATMENT STRATEGY BASED ON THERAPEUTIC DRUG MONITORING


1Rheumatology, Diakonhjemmet; 2Gastroenterology, Akerhus University Hospital; 3Dermatology; 4Laboratory Medicine, Oslo University Hospital, Oslo; 5Dermatology, None, Lerenaskog, Norway

Background: Infliximab (INX) and other targeted therapies have greatly improved the treatment of patients with RA, SpA and PsA, but a significant proportion of patients either do not respond sufficiently to therapy or loose efficacy over time. Recent advances in assay development have revealed an extensive individual variation in serum drug concentrations suggesting both under- and overtreatment of a substantial proportion of patients. Many patients develop anti-drug antibodies (ADAb) during therapy, contributing to reduced drug levels, inefficacy and adverse events. Therapeutic drug monitoring (TDM), i.e. individual dose adjustments according to serum drug levels, can probably increase effectiveness of treatment with INX and other biological drugs.

Objectives: To develop an individualised treatment strategy based on TDM in order to optimise efficacy of INX treatment.

Methods: The treatment strategy has been developed by the steering committee of the NORwegian DRUG Monitoring study (NOR-DRUM), based on a systematic literature review (SLR), unpublished data and expert opinion. A SLR was performed in May 2016 to identify the therapeutic range. In Norway neutralising ADAb are measured with an in house assay. For this assay, ADAb levels>50 μg/L are defined as “high” leading to a recommendation to switch therapy. This cut-off is based on own s-INX and ADAb data (Diakonhjemmet Hospital during 2015–2016) and clinical experience. The proposed strategy has been developed through a series of meetings in the project group consisting of national leading experts in this field (both clinicians experienced with TDM and laboratory physicians) and with additional input from international key experts in the scientific advisory board of the NOR-DRUM study.

RESULTS: The treatment strategy from infusion number 4 onwards is depicted in the figure 1. The therapeutic range for serum INX (through levels) is defined as 3–8 μg/ml (figure 1, green zone). During the induction phase (infusion 1–3) the recommendation is to keep the level >20 μg/ml at infusion 2 and >15 μg/ml at infusion 3. A guideline for action according to levels outside the therapeutic range is given in the figure 1. Dose modifications may be performed either as changes in doses or intervals as stated in the figure 1. If the patients develop high levels of ADAb the recommendation is to switch therapy.

Conclusions: An individualised treatment strategy based on TDM has the potential to optimise therapy with infliximab and other biological drugs by: 1) prevention of treatment failure by identification of patients with drug levels below the therapeutic range, 2) reduction of overtreatment, which predispose to side effects and increase costs, and 3) early identification of ADAb development, with the possibility to detect treatment failures prior to a clinical flare and to prevent hypersensitivity reactions. This approach has high face validity, and the effectiveness compared to regular care is being investigated in an ongoing randomised clinical trial, NDOR-DRUM (NCT03074658).

REFERENCES:

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VACCINATION DECISIONS AND INCIDENCE OF NEONATAL INFECTIONS IN MOTHERS EXPOSED TO BIOLOGICALS DURING PREGNANCY

S.J. Bong1,2, L. Young3,4, K. Poulsen5, H.L. Barrett6, A.L. Taylor7,8, C. Barrett1,2,3,8

1University of Queensland; 2Metro North, Queensland Health; 3Mater Health, Brisbane; 4Royal Perth Hospital; 5University of Western Australia, Perth, Australia

Background: Rheumatologic diseases commonly affect women of childbearing age.1,2,3 There is currently limited data available regarding the safety of vaccination in infants after in utero exposure to biologics.

Objectives: To determine the vaccination decisions of mothers with rheumatologic diseases exposed to biologics during pregnancy and the incidence of serious neonatal infections after third trimester exposure.

Methods: All Australian women with inflammatory arthritis, exposed to biologics during pregnancy were invited to participate in the Pregnancy Exposed to Biological (PEB) study from May 2009 – Jan 2018. Recruitment was via direct invitation from patients treating rheumatologists, community groups, and via social media. Following self-referral to the study, retrospective data was collected, including biological exposure, vaccination history and the incidence of serious neonatal infections, defined as infection requiring hospitalisation.

Results: Preliminary data is available regarding 35 offspring from 28 mothers. 34 of 35 offspring were vaccinated. 29 received vaccinations in accordance with the Australian National Immunisation Program Schedule. 1 mother declined to immunise her infant due to personal preference. 13 infants were exposed to a tumour necrosis factor inhibitor (TNFi) during the third trimester. Of these, 4 had Rotavirus vaccine delayed from 2 to 4 months and 1 infant until 6 months. 1 infant did not receive the Rotavirus vaccine at 2 months due to exposure to a TNFi while breastfeeding. There were no incidences of serious neonatal infections.

Conclusions: Current guidelines recommend deferring live vaccines, such as rotavirus, until after 6 months if exposed to a biologic in the third trimester.4,5 Compliance with these recommendations was only observed in one infant in our study. One infant received delayed Rotavirus vaccination due to concern about TNFi exposure during breastfeeding; this is not in keeping with current guidelines. Of the 12 infants exposed to a biologic during the third trimester who did not delay live vaccination until after 6 months, there were no incidences of serious neonatal infections, in keeping with the findings of current published case series.

REFERENCES: