their structure such as etanercept (ETA), adalimumab (ADL) infliximab (IFX) and rituximab (RTX).

Objectives: The aim of our study was to determine whether the presence of low affinity allele of FcγR (FcγRIIA-131R, FcγRIIA-158F and FcγRIIB-NA2) influences efficiency and immunogenicity of ETA, ADL, IFX and RTX in RA Tunisian patients.

Methods: We included RA patients treated with biologics for at least six months. Response to treatment was assessed according to EULAR criteria. Quantitative measurement of antidrug antibodies (ADAb) for each biologic agent was carried out by a commercial enzyme-linked immunosorbent assay (ELISA) kit (Promonitor®). To do so, blood samples were collected for each patient right before drug administration. FcγRIIA, FcγRIIA and FcγRIIB SNPs was genotyped for all patients using PCR-SSP and direct sequencing process.

Results: Seventy-nine RA patients treated with biologics were enrolled (18 with ETA, 13 with ADL, 16 with IFX and 32 with RTX). Regardless of biologic type, 61 patients (77.2%) responded to treatment and 14 patients (17.7%) developed ADAb. Genotypic study revealed a correlation between poor response to treatment and the presence of at least one FcγRIIA 131-R allele (94.7% for RH/RR genotypes versus 5.3% for H/H genotype). But, the difference was not statistically significant ($p=0.25$). Besides, this mutant allele was significantly associated to the presence of ADAb (71.4% of ADAb positivity for RH/RR genotypes versus 28.6% for H/H genotype; $p=0.041$). The haplotypic study shows that the risk allele combination of FcγR IIA-131R/IIIA-158F/IIIB-NA2 was more frequent in ADAb+ (27%) compared to ADAb- subjects (23%) and in non-responders (27%) versus good responders (23%). But, neither of these associations was statistically significant.

Conclusion: Our study suggests that RA patients FcγRIIA-131R allele carriers are more susceptible to develop ADAb than those with HH wild genotype. That could be explained by a higher biologic clearance in H-carrier patients, resulting in a decreased half-life and ultimately a lower risk of ADAb formation. Thus, FcγR polymorphism genotyping may be a useful marker for predicting response to Fc-containing biologics in Tunisian RA patients. Further studies need to be done on larger population.

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AB0393 IMPROVING DRUG SOLUBILITY FOR INFLAMMATORY ARTHRITIS TREATMENT: SULFASALAZINE NIOSOME

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Background: Newly, many studies have been assumed upon vesicular drug delivery systems like niosomes to make an effective formulation of drugs in soluble state that can lead to enhance bioavailability as well as to provide controlled drug release [1]. Niosomes due to their capability and efficient mechanism have been proposed to explain the ability of those as potential nanocarriers for poorly soluble drugs [2].

Objectives: In this study, niosomes have emerged as a drug delivery system to load sulfasalazine (SSZ) that is used to treat rheumatoid arthritis.

Methods: Niosomes were prepared by amphiphilic self-assembly of tween 80 and squalene through thin film hydration method. The optimal hydration condition that maximizes niosome yield was hydration duration of 24 hours at 30-35 °C. The encapsulation of sulfasalazine drug into niosome was characterized by Fourier transform infrared spectroscopy (FT-IR), UV-visible, Zeta potential, particle size, field emission scanning electron

microscopy (FE-SEM), and transmission electron microscopy (TEM) to evaluate size, charge, morphology and functional properties.

Results: By using this method, the percentage of loaded drug, resulted by the encapsulation of micellar/niosomes was found to be $99 \pm 0.2\%$ for 5% of SSZ weight in total ingredients weight of micellar/niosomal vesicles (w/w). The drug-entrapped sulfasalazine niosomes (SSZN) nanoformulations indicated controlled release of drugs in phosphate buffer saline (PBS) at pH 7.2 making these nanoformulations ideal for colon-targeted drug delivery. It was also seen that a slower rate of the SSZ releasing of the drug encapsulated niosome was, in the range of 2-24 hours at pH 4.5-7.2. TEM examinations also confirmed the formation of 15-25 nm thick walls for the prepared SSZN particles. MTT assay revealed that the blank niosomes exhibited excellent biocompatibility. The in vitro drug loading and release behavior studies indicated that the as prepared nano-niosome presented ultra-high performance as drug carrier. Cell toxicity assay was carried out by HeLa cell line and A549 cell line demonstrated the half maximal inhibitory concentration (IC_{50}) of SSZ to 162 μ M and 173 μ M, respectively.

Conclusion: Niosomal formulation are introduced as a novel nano drug carriers to design effective drug delivery systems. They offer a great opportunity for loading hydrophilic, lipophilic drugs, or both drugs together. Niosomal formulation has been evaluated as a safe drug delivery system. In this study, we showed that SSZN has more stability and more efficiently affect the cancer cells. It seems that SSZN is a great candidate for future in vitro and in vivo researches for evaluating potential clinical applications.

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AB0394 SERUM CALPROTECTIN AS A PREDICTIVE MARKER OF THERAPEUTIC RESPONSE TO ADALIMUMAB IN RHEUMATOID ARTHRITIS

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Background: Adalimumab significantly reduces the activity of rheumatoid arthritis (RA), but reliable biomarkers of inflammation are still lacking to predict and evaluate the therapeutic response. Serum calprotectin is a mainstay of endogenous activation of the inflammatory response that can be useful as a marker of response to treatment in RA.

Objectives: To compare the evolution over time of serum calprotectin and C-Reactive Protein (CRP) after initiation of adalimumab.

Methods: Serum levels of calprotectin, CRP and adalimumab concentration were measured at visits V1 (week 0), V2 (week 4), V3 (week 8), V4 (week 12) and V5 (week 26). Changes in each variable were analyzed at each visit and each variable was compared to each other using a correlation test. Receiving operating characteristic curves were used to estimate the predictive value of response at V5 for calprotectin and CRP at each visit.

Results: Data from 66 patients were analyzed. Serum calprotectin level decreased from V1 to V5 (3.76 μ g/mL [0 – 17.47] to 2.74 μ g/mL [0 – 18.83]; $p < 0.05$). A positive correlation was observed between serum calprotectin and DAS28_{ESR} (Spearman 0.244; $p < 0.01$), and between CRP and DAS28_{ESR} (Spearman 0.512; $p < 0.01$) for all visits combined. In contrast to CRP, serum calprotectin and serum calprotectin variation from V1 at each visit, were not predictive of DAS28_{ESR} at V5.

Conclusion: Serum calprotectin decreases after initiation of adalimumab in RA but was weakly correlated with disease activity at week 26. Serum calprotectin cannot be considered as superior to CRP as predictive marker of therapeutic response in RA after initiation of adalimumab.

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AB0395

NO CLINICAL RELEVANT CHANGES IN EFFICACY, QUALITY OF LIFE AND TOLERABILITY FOR RA PATIENTS IN CLINICAL REMISSION 16 WEEKS AFTER SWITCHING TO THE BIOSIMILAR IFX CT-P13 COMPARED TO THE ORIGINATOR; A DESCRIPTIVE REPORT

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Background: Switching patients from originator infliximab (IFX) to biosimilar IFX can reduce healthcare costs. Several studies have shown that switching does not affect the efficacy for rheumatoid arthritis (RA) patients^(1,2), however prospectively collected data on pharmacokinetics, immunogenicity and quality of life (QoL) is scarce.

Objectives: We report data collected from RA patients in clinical remission enrolled in the SECURE study (IFX4501; registered at www.clinicaltrialsregister.eu 2014-004904-31). In SECURE we collected IFX serum concentrations, efficacy, quality of life (QoL) and safety data of patients switched from originator IFX to biosimilar IFX CT-P13 for up to 16 weeks. The IBD cohort of this study has been published elsewhere (3).

Methods: In this prospective, open-label, interventional, non-inferiority, multicenter, phase IV trial, adult RA patients in clinical remission >30 weeks (DAS<3.2) at stable IFX dose were switched from originator IFX to CT-P13. Patients were followed for 16 weeks (2 infusions) after switching. Primary endpoint was the IFX serum concentration at through measured with a bridging enzyme-linked immunosorbent assay (ELISA) 16 weeks after switch. Secondary endpoints included antidrug antibodies (ADA), clinical disease activity measured with the DAS score, CRP and quality of life measured with the EQ5D, 8 and/or 16 weeks after switching.

Results: Between July 2015 and December 2016, 34 RA patients were recruited. Two patients were excluded from the safety population (1 no IMP exposure; 1 no efficacy assessment) and two patients discontinued before week 16 (1 AE: renal colic; 1 personal reasons), leaving 30 patients in the intent to treat population.

For 11 patients, blood samples were obtained at baseline and week 16. The IFX ratio at week 16 (biosimilar) compared to baseline (originator) was 107.40 (90% CI 90.35;127.66), indicating non inferiority. The number of included patients was too low for firm conclusions.

The mean difference (95% CI) at week 16 compared to baseline was for the CRP -0.22 (-1.80;1.37); for DAS 0.12 (-0.06;0.30), for EQ5D thermometer -3.19 (-9.78;3.41) and EQ5D Health status -0.05 (-0.08,-0.01). These changes were not clinically relevant.

In total 76 AEs were reported by 29 (90.6%) patients; 27 of these AEs were related to the study treatment. The most frequently reported AEs (≥5% subjects) were fatigue (9.4%), headache (6.3%), arthralgia (15.6%), back pain (9.4%), cough (6.3%), viral upper respiratory tract infection (15.6%) bursitis (6.3%) and pain in extremity (6.3%). Two non-related serious AEs were reported (ovarian cyst and benign parathyroid tumour). No ADA's were detected by inclusion or during the follow-up period.

Conclusion: In this prospective, interventional study in RA patients in clinical remission there were no clinically relevant changes in clinical and biochemical efficacy, quality of life and tolerability 16 weeks after switching to the biosimilar IFX CT-P13 compared to the originator. This study is sponsored by Mundipharma Pharmaceuticals BV.

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AB0396

MONITORING OF PATIENTS WITH RHEUMATOID ARTHRITIS BY INDOCYANINE GREEN (ICG) ENHANCED FLUORESCENCE OPTICAL IMAGING TREATED WITH ANTI-TNFI THERAPY

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Background: Indocyanine (ICG)-enhanced fluorescence optical imaging (FOI) by the Xiralite® system enables visualization of inflammation in the hands in rheumatic joint diseases.

Objectives: To investigate the ability of monitoring treatment response under Certolizumab pegol (CZP) in patients with rheumatoid arthritis (RA) by the ICG-enhanced FOI method Xiralite® as compared to clinical disease activity, laboratory parameters, and musculoskeletal ultrasound (US).

Methods: CZP-naïve patients with RA were eligible for this study, which consisted of an open-label 52-weeks treatment period with CZP. Disease activity was monitored by the clinical score DAS28, laboratory parameters for systemic inflammation (CRP and ESR), ultrasonography (US7 score [1]) and by FOI at baseline (before CZP) and after 6, 12, 24, and 52 weeks under CZP therapy.

Results: In this study, 28 patients (female 92.9%, mean age 49.4±13.3) with RA were included and treated with CZP over a period of 52 weeks. All patients received CZP for at least 12 weeks (w), n=27 until w24, and n=18 received CZP throughout the entire 52 weeks. DAS28 decreased from moderate disease activity (median 4.6) at baseline to low disease activity (median 2.7) at w52 (p <0.001). CRP/ESR values also reduced from baseline to w52 (n.s.). FOI in phase 1 showed a continuous decrease of enhancement during the course of the treatment period: from baseline (median 1.5, IQR 0.9-5) to w6 (median 1.0, IQR 0-3), to w12 (median 0.5, IQR 0-3), to w24 (median 0.0, IQR 0-3) and visit w52 (median 0.0, IQR 0-2). An image example is given by the **Figure** for baseline and w52. The results for other FOI phases 2, 3 and PVM did not show a decrease over the treatment period. US-detected synovitis and tenosynovitis by the US7 score also presented to be responsive under therapy. Especially US7-synovitis in Power Doppler (PD) was reduced from baseline (median 2.0, IQR 1-4) to w52 (median 0.5, IQR 0-2).

Conclusion: FOI in phase 1 appears to be a valuable tool for fast and easy monitoring of treatment response to CZP in a clinical setting. FOI may provide an additional method to evaluate inflammation of wrist and finger joints of RA patients in follow-up studies.