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.