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#### THU0194 CD4+ T CELLS, IMMUNOGLOBULINS AND RISK OF INFECTION IN PATIENTS WITH RHEUMATOID ARTHRITIS OVER MULTIPLE CYCLES OF RITUXIMAB

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**Background:** Rituximab (RTX) may be responsible for infectious event in RA patients. Immunological markers may be associated with the occurrence of infections.

**Objectives:** To evaluate lymphocyte counts and immunoglobulin concentrations over multiple cycles of RTX in RA patients, and to analyse the relationship between these markers and the occurrence of infections.

**Methods:** Retrospective monocentric study on 94 RA patients treated with RTX. At baseline and during follow up, lymphocyte phenotyping (CD4+, CD3+, CD19 +cells), gammaglobulin, IgG, IgM and IgA concentration were assessed. Patients were dichotomized according to the absence or presence of infectious events. A student's test was used to compare the continuous variables and a Chi2 test or the Fisher test was used for the dichotomous variables.

**Results:** A total of 119 infectious events occurred during follow-up, of which only 11 were serious, with respective incidences of 65 per 100 patient-years and 6 per 100 patient-years. Low IgM concentration at RTX initiation and low IgG concentration (<5 g/L) throughout follow-up were associated with an increased risk of infection. Both gammaglobulin and IgG concentrations decreased along with successive cycles of RTX in patients with infection, while they remained stable in patients without infection. Twelve patients had a CD4 +cell count<200/mm<sup>3</sup> during follow up, of which one with a CD4 +cell count 233/mm<sup>3</sup> at baseline, who subsequently presented an opportunistic infection.

**Conclusions:** Gammaglobulin, IgM and IgG concentrations and CD4 +cell count are valuable before RTX initiation in RA patients. IgG or gammaglobulin concentration should also be monitored before each cycle. CD4 +lymphocytes monitoring should be considered in patients with low value at initiation.

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#### THU0195 PREVALENCE OF OCCULT HEPATITIS B CARRIER STATUS AND ITS ASSOCIATED FACTORS IN PATIENTS WITH RHEUMATIC DISEASES UNDERGOING BIOLOGICAL THERAPIES

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**Objectives:** To study the prevalence of occult hepatitis B carrier status and its associated factors in patients with rheumatic diseases undergoing biological therapies

**Methods:** Consecutive adult patients with various rheumatic diseases who were currently receiving biological therapies between November 2016 and April 2017 were recruited in this cross-sectional study. Blood was taken for evidence of hepatitis B infection (HBsAg, anti-HBs, anti-HBc-IgG). For patients tested positive for HBsAg or anti-HBc-IgG, assay of serum HBV-DNA level was also performed. Occult hepatitis B carrier was defined as patients who were HBsAg negative but anti-HBc-IgG positive. Logistic regression was performed to study factors independently associated with occult hepatitis B carrier status in these patients.

**Results:** 310 Chinese patients were studied (60% women, age at biological therapy 44.0±13.0 years). The underlying rheumatic diseases requiring biological therapies were rheumatoid arthritis (46%), spondyloarthritis (31%), psoriatic

arthritis (12%) and systemic lupus erythematosus (8.1%). The biologics being used were the TNF inhibitors (66%), tocilizumab (16%), abatacept (2.9%), rituximab (7.7%), belimumab (5.8%) and tofacitinib (1.3%). Hepatitis B carrier (HBsAg +) status was detected in 11 (3.5%) patients and they were all put on preemptive anti-viral therapy (entecavir). A total of 105 patients (34%) were occult hepatitis B carriers (HBsAg- but anti-HBc-IgG+). Anti-HBs was present in 83/105 (79%) of these patients. Occult hepatitis B carriers were significantly older than the non-carriers (49.9±11.1 vs 40.9±13.3 years; p<0.001), and were more frequently identified in rheumatoid arthritis than other rheumatic diseases (45% vs 25%; p<0.001). However, there was no gender difference in the prevalence of the occult hepatitis B carrier status (37% in women vs 28% in men; p=0.10). Logistic regression revealed that older age (RR 1.05 [1.03–1.08] per year; p<0.001) was the only independent factor significantly associated with occult hepatitis B infection. Rheumatoid arthritis was not significantly associated with occult hepatitis B carrier status after adjustment for age and sex. Of the occult hepatitis B carriers, 9 (8.6%) had detectable HBV-DNA levels but all were very low titers (<100 IU/ml). Five (56%) patients with detectable HBV-DNA levels received entecavir treatment during biological therapies, while 19 (20%) patients without detectable HBV-DNA were put on preemptive entecavir treatment (including all patients who were receiving rituximab). None of the overt (HBsAg+) or occult hepatitis B (HBsAg-anti-HBc-IgG+) carrier patients developed clinical reactivation of hepatitis B during a mean of 5.0±3.7 years of biological therapies.

**Conclusions:** Occult hepatitis B carrier status was present in one-third of Hong Kong Chinese patients with various rheumatic diseases undergoing biological therapies. Older age was the only independent factor associated with occult hepatitis B infection. Despite the relatively low rate of preemptive anti-viral treatment in these patients, clinical reactivation of hepatitis B was not reported over 5 years of biological therapies.

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#### THU0196 DO CONTEXTUAL FACTORS INFLUENCE SURVIVAL ONDRUG OF BIOSIMILARS IN CLINICAL PRACTICE?

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**Background:** The introduction of biosimilars has been linked to concerns regarding their effectiveness and safety compared to their originator products. Whilst randomized controlled trials may address their relative efficacy, the outcome of biosimilars in clinical practice may be influenced by contextual factors, such as the treating rheumatology unit's experience with biosimilars and non-medical switching.

**Objectives:** To analyze whether contextual factors, such as department size and use of biosimilars, and calendar period of treatment start, influence time until treatment discontinuation (i.e. drug survival) of biosimilars as compared to corresponding originator products.

**Methods:** We used data from the Swedish Rheumatology Quality register to identify all patients with rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis, or other spondyloarthropathies who started infliximab between March 1st 2015 and Sept 30th 2017 or etanercept between April 1st 2016 and Sept 30th 2017, as their first ever biologic. Kaplan-Meier curves and Cox models were used to assess the association between drug survival and the size of the rheumatology unit, its use of biosimilars (extent of biosimilar use above/below national median at teach time point), and whether the treatment start occurred soon after biosimilar introduction (infliximab: first 12 months, etanercept: 6 months counting from first date of availability of the biosimilar in question). To avoid artefacts, patients were censored if switching from the originator to a biosimilar (or vice versa).

**Results:** During the study period, 368 and 738 patients started infliximab originator or biosimilar, and 125 and 2079 started etanercept originator or biosimilar, as first ever biological treatment. Overall, the hazard ratio (HR) of discontinuing treatment (comparing the biosimilar vs its originator) was 1.21 (95% CI: 0.96–1.51) for infliximab and 0.88 (95% CI: 0.57–1.35) for etanercept, adjusted for indication, age (quartiles), gender, region, and HAQ (quartiles), DAS28 (quartiles) and global health (quartiles) at treatment start. Patients treated in large clinics (more than 1695 patients (75th percentile) at the end of the study period) were at a lower risk of drug discontinuation (table 1). We noted no association between overall biosimilar use in the rheumatology clinic in question and survival on drug (neither originator nor biosimilar). By contrast, those who started infliximab biosimilar later had a lower risk of discontinuing (HR: 0.65 (95% CI: 0.50–0.85)) compared to those who started in the first year of availability. For etanercept biosimilar, no such association was noted.