Methods: 413 randomly selected older adults (mean age 63 years) had magnetic resonance imaging at baseline and approximately 2.6 years later to measure knee OP, cartilage defect, cartilage volume, BMLs, meniscal extrusion, IPFP quality score/maximum area and effusion-synovitis. Weight, height, body mass index (BMI) and leg muscle strength were measured by standard protocols.
Results: 85% participants had MRI-detected OP at baseline. Over 2.6 years, the average OP score increased significantly in all compartments. The OP score remained stable in 53% participants and worsened in 46% (≥1-point increase) OP, with 1% decreasing. Baseline factors associated with an increase in MRI-detected OPs over 2.6 years included BMI, cartilage defects, BMLs, meniscal extrusion, IPFP quality score and Effusion. In multivariable analyses, baseline cartilage defects, BMLs and meniscal extrusions and IPFP quality score were site-specifically and significantly associated with increased OP at medial tibiofemoral, lateral tibiofemoral and total compartments (p all <0.05). In contrast, total and suprapatellar pouch effusion-synovitis were significantly associated with increased OP at total and lateral compartments (p all <0.01). The significant associations between baseline cartilage volume and increased OPs at medial and total compartments became non-significant after further adjustment for other knee structural abnormalities. Age sex and smoking status were not associated with increased OPs over time.

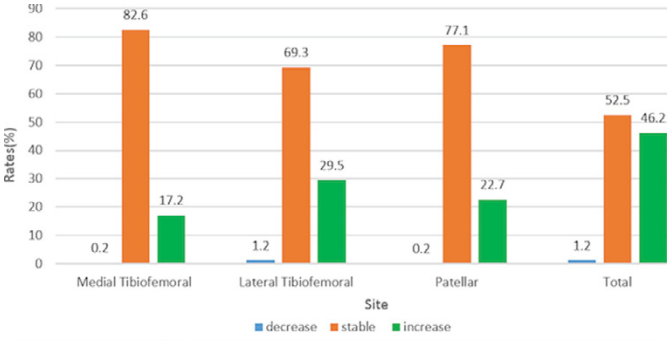

Figure 2. Change in MRI-detected osteophyte scores by site over 2.6 years. Total score was calculated by summing medial tibiofemoral, lateral tibiofemoral and patellar scores.

Conclusions: Knee MRI-detected OP in older adults is common and, in contrast to radiographs, is likely to progress over a relatively short period. Progression can be predicted by structural risk factors suggesting they are a consequence of these abnormalities.
References:
[1] McCauley TR, Kornaat PR, Jee WH. Central osteophytes in the knee: prevalence and association with cartilage defects on MR imaging. AJR Am J Roentgenol. 2001 Feb; 176(2):359–364.
Acknowledgements: The authors thank the participants who made this study possible, and acknowledge the role of the staff and volunteers in collecting the data, particularly research nurses Boon C and Boon P. Warren R assessed MRIs and Dr Srikanth V and Dr Cooley H assessed radiographs.
Disclosure of Interest: None declared
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SATURDAY, 17 JUNE 2017

Infection-related rheumatic diseases

SAT0556 RISK FACTORS FOR SEVERE INFECTION AND RATIONALE FOR IMMUNOGLOBULIN MONITORING DURING RITUXIMAB TREATMENT IN AUTOIMMUNE RHEUMATIC DISEASES

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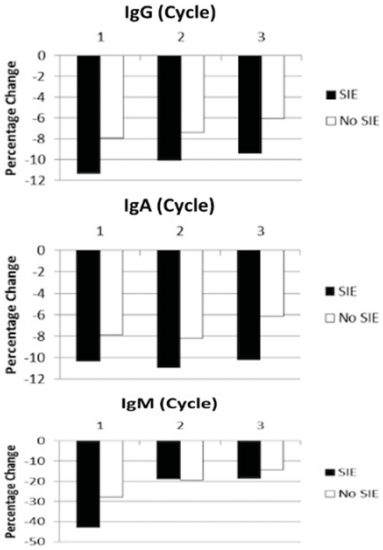
Background: Rituximab (RTX) has been used in the treatment of various autoimmune rheumatic diseases (AIRDs) for over a decade. Repeat cycles are effective for maintenance but may lead to hypogammaglobulinaemia. Low IgG at baseline has been associated with post-treatment infection rate but may be confounded by other clinical variables and fully adjusted models with method for handling missing data have not been presented. Importance of post-treatment change in Igs has also not been proven.
Objectives: To evaluate risk factors for severe infection in multivariable analysis and assess outcome of hypogammaglobulinaemia.
Methods: The first 700 consecutive patients with AIRDs treated with RTX at a single centre were studied. Each cycle of RTX consisted of 2x1000mg infusions repeated on clinical relapse. IgM, IgA and IgG levels were measured at baseline and 4–6 months after each cycle. Multiple imputation was used for missing data. Baseline factors for predicting serious infection and low Ig were tested using univariable and multivariable (MVA) logistic regression analyses.
Results: 550 patients were female, median age (IQR) at RTX initiation 58 (46–68) years and median disease duration (IQR) 7.9 (3.4–15.0) years. 506 (72%) had RA, 94 (13%) SLE, 49 (7%) AAV, 14 (2%) DM, 5 (1%) APS, 6 (1%) SSc and 26 (4%) other CTD. 364 (52%) were biologic-naïve and 515 (74%) were on concomitant DMARDs. Total follow-up: 2940 patient-years (PY). 284 serious infections were recorded in 179 patients (9.7/100 PY); 88 cases within 12 months of cycle 1 (C1). In MVA, previous severe infection (OR 10.7, 95% CI 5.8–19.5), low IgG (OR 3.6, 95% CI 1.5–8.6), previous cancer (OR 2.9, 95% CI 1.2–6.6) and chronic lung disease (OR 1.7, 95% CI 0.9–3.1) increased the odds of a severe infection within 12 months of C1. A diagnosis of CTD was associated with lower risk (OR 0.5, 95% CI 0.2–0.9). Low IgG at RTX initiation was predicted by older age, previous cancer, RA diagnosis, previous severe infection and previous treatment with cyclophosphamide. In C1-C3, higher rate of change in IgA and IgG levels were associated with serious infections (Figure 1). Overall, only 7 (1%) of the patients required Ig replacement in this cohort.



Conclusions: Factors associated with serious infection at RTX initiation include previous serious infection, low IgG, previous cancer, a diagnosis of RA and chronic lung disease. This is the first study to show the rationale for monitoring the rate of change in Ig levels during repeat cycles of RTX, with reduction in all Ig subclasses being associated with increased risk of post-treatment infection. Further analysis including predictors of serious infections in repeat cycles is in progress and will be used to develop guidelines for safety monitoring of rituximab.
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SAT0557 CHIKUNGUNYA OUTBREAK IN BRAZIL: DEMOGRAPHIC AND CLINICAL CHARACTERIZATION OF 732 PATIENTS – CHIKBRASIL COHORT

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Background: Chikungunya Fever (CF) is a disease characterized by acute febrile arthritis and caused by a mosquito-transmitted alphavirus. Considering the wide distribution of the vector, the presence of imported cases from 2010 and Brazilian population's susceptibility, there was a dispersal and establishment of Chikungunya virus (CHIKV) throughout the country. Since 2014, the CF has achieved a large proportion of the Brazilian population and has been responsible for the development of chronic joint symptoms in thousands of people.
Objectives: To describe the demographic, clinical and serological characteristics of patients from specialized Rheumatology services from northeastern Brazil, in a large, multicenter cohort.
Methods: Data from 732 patients in a prospective, multicenter, observational cohort conducted in six research rheumatology centers were analyzed. Patients

18 years or older who fulfilled the clinical and epidemiological Health Ministry criteria for case definition of CF were included in the study, from April to December 2016.

Results: From 732 patients included, 83.1% were women. The mean age was 54.1 (± 13.4) years; 92.4% lived in urban area and 58.6% had only primary education. The most common comorbidities were hypertension (43.8%), hyperlipidemia (25.3%) and diabetes mellitus (13.7%). Prior rheumatologic disease was observed in 16.4% patients, being the most frequent rheumatoid arthritis (32.5%), osteoarthritis (32.5%) and spondyloarthritis (11.7%). Arthralgia was the most frequent symptom referred by all patients; fever and fatigue were also common manifestations, being referred by 95.3% and 87.1% of patients, respectively. Arthritis occurred in 84.3%. The most frequent joint pattern involvement was polyarticular (67.8%) and the additive (84.0%). At the first appointment with the rheumatologist, 75.9% had been or were under corticosteroid use, with the average dose of 15.4 mg (±8.7) of prednisone or equivalent; was observed an median of 8 painfull joints (IQR 4–21) and arthritis was found in 73.6% patients, with an median of 2 swollen joints (IQR 0–5). The median score of patient global assessment at the time of the initial evaluation was 6 (IQR 4–8) using a 10 points visual analogue scale. After resting stiffness was referred by 86.0%, with 58.4% of these longer than 30 minutes. The most commonly prescribed medications were corticosteroids (58.3%) and hydroxychloroquine (59.1%). The serological tests for CHIKV were positive for IgM in 97.1% and for IgG in 71.7% of patients.

Conclusions: This is the first descriptive study of a cohort Brazilian patients with CF, with an expressive number of patients when compared to those described in the literature. Most of the features of patients in our cohort were similar to the results described in studies/cohorts published.

Disclosure of Interest: None declared

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SAT0558 CONCORDANCE BETWEEN CLINICAL-EPIDEMIOLOGICAL CRITERIA AND CHIKUNGUNYA FEVER SEROLOGY

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Background: The first autochthonous reports of Chikungunya fever (CF) in Brasil was confirmed in 2014, and by December 2016, there were 263.980 probable cases of CF, 55.03% confirmed. According to recommendations of the Ministry of Health (MH) of Brazil, in an established epidemic situation, the diagnosis of CF should be made by appliyng clinical and epidemiological criteria. There is no indication for the serology for Chikungunya virus (CHIKV) in the acute phase, except in atypical cases and complicated clinical situations, which may generate doubts in clinical practice about the correct diagnosis of these patients.

Objectives: The objective of this study was to evaluate the concordance of the clinical and epidemiological criteria with the serology results for CHIKV in a cohort of patients with CF.

Methods: The multicenter cohort CHIKBRASIL from the Northeast of Brazil has enrolled CF patients with joint manifestations since April 2016, using as inclusion criteria the presence of fever and arthralgia/arthritis in a patient residing or who had visited an endemic or epidemic area within 15 days prior to the onset of symptoms. For the present study, we selected patients in which IgM and/or IgG serology was performed, regardless of the results. For the analysis of agreement with the serology, the most characteristic symptoms of CF were used individually (fever, arthritis/arthralgia or exanthema) and three models of association of symptoms were created: (1) fever and arthralgia; (2) fever and arthritis; (3) fever, arthralgia/arthritis, and exanthema. The sensitivity (SENS), specificity (SPEC), positive predictive value (PPV) and negative predictive value (NPV) of the criteria were also assessed, with the serology result considered the gold standard.

Results: A total of 143 patients were evaluated, 119 (83.2%) of which were female, with a mean age of 53.89 years (± 13.5); 52.4% of the cases were in the subacute phase of the disease (15 days to 3 months) and 42.7% were in the chronic phase (over 3 months). The IgM positivity was observed in 95.1% of cases and IgG in 71.67%. The concordance rate between the IgM serology or combined positive serology (IgM or positive IgG) was over 80% for any of the symptoms/symptoms model analyzed, as well as the SENS and PPV of the symptoms/ symptoms model, which was over 95% in all situations evaluated. The concordance rate for IgG serology ranged from 51.9 to 72.1%. Model 1 presented the highest agreement with the result of positive combined serology.

Conclusions: During an epidemic situation, the use of clinical and epidemiological criteria shows high agreement with the serology result, regardless of the combination of symptoms presented, with high sensitivity and positive predictive value.

Disclosure of Interest: None declared

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SAT0559 SEPTIC ARTHRITIS IN COVENTRY IN THE UK: 5 YEAR DATA

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Background: Septic arthritis (SA) is a serious condition associated with significant morbidity and prolonged hospital stays, posing a large economic burden to healthcare systems. It affects 2–10 people per 100,000 and there has been a suggestion that the incidence is increasing due to iatrogenic causes [1]. Our local secondary centre, University Hospitals Coventry and Warwickshire NHS Trust (UHCW NHS Trust), provides care to Coventry and Rugby covering an estimated population of 550,000.

Objectives:

- To investigate the incidence of native joint SA in the adult population in a secondary care hospital in the UK.
- To investigate whether immunosuppression contributes significantly to the burden of SA.

Methods: Patients were retrospectively identified on the basis of the International Classification of Diseases (ICD)-10 coding generated following discharge from hospital for all patients between 2007–11. Exclusion criteria included paediatric patients, diabetic foot, prosthetic joint infections and those who on review were not thought to have SA. The data was analysed using Excel. Formal ethical approval was obtained via the research and development department within the UHCW NHS Trust.

Results: A total of 189 admissions were coded as SA. Of these, 103 were excluded (n=74 not thought to have SA on review of the notes, n=26 paediatric patients and n=3 prosthetic joints). Therefore, there were 86 adult admissions for 64 patients with SA.

The average age of these patients was 53.4 years, with the majority of them being males (n=43, 67.2%). The majority of patients had co-morbidities (n=44, 65.7%), with hypertension (n=10, 14.9%) and type 2 diabetes (n=10, 14.9%) being the most prevalent. Joint aspirates were performed on 63.2% (n=56) of admissions and blood cultures on 70.8% (n=63) of admissions. Staphylococcus aureus was the most commonly cultured microbe in both joint fluid (46.4%, n=13) and blood (42.9%, n=3). The knee was the commonest joint involved (n=31, 46.3%). Other commonly affected joints included the small joints of the hands (n=9, 13.4%) and shoulder/acromioclavicular/sternoclavicular joints (n=9, 13.4%).

Interestingly, 23 (35.9%) of the patients were immunocompromised. Of these, 4 patients had a diagnosis of rheumatoid arthritis (RA) and were on steroid treatment alone (n=2), or in combination with disease-modifying anti-rheumatic drugs (n=2). A total of 11 patients had a pre-existing rheumatological diagnosis of which RA was the most common condition (n=6). Two of these patients were not on immunosuppressants. The 5-year mortality was significant at 29.7% (n=19).

Conclusions: Our local data showed the incidence of SA to be approximately 3 per 100,000, which is in keeping with proposed figures. Our cohort highlighted that those with pre-existing co-morbidities or those who were immunocompromised were at greatest risk. An ageing population with multiple co-morbidities means the incidence of SA is set to rise. Greater emphasis therefore needs to be placed on improving awareness and optimising treatment.

References:

[1] Geirsson AJ, Statkevicius S, Vikingsson A. Septic arthritis in Iceland 1990–2002: increasing incidence due to iatrogenic infections. Ann Rheum Dis. 2008;67:638–43.

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Disclosure of Interest: None declared

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SAT0560 COEXISTENCE OF SEPTIC AND CRYSTAL-INDUCED ARTHRITIS: A DIAGNOSTIC CHALLENGE

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Background: Septic arthritis (SA) is a rheumatologic emergency as joint destruction occurs rapidly and can lead to significant morbidity and mortality. Accurate diagnosis can be particularly challenging in patients with underlying inflammatory joint disease. Crystal-induced arthritis (CA) is a risk factor for its appearance. When both conditions appear simultaneously, CA may mask diagnosis of infection and delay the antibiotic treatment.

Objectives: To describe the characteristics of patients with concurrent septic and CA.

Methods: Retrospective analysis of patients with coexistence of septic and CA attended between 1985 and 2015 in a university hospital with a reference area of 850,000 inhabitants. We collect demographic, clinical, laboratory and imaging data as well as patient medical treatment, complications and evolution records. All patients had positive bacterial culture (blood and/or joint fluid) and crystals in synovial fluid.

Results: A total of 123 patients with SA were identified. 20.3% (n=25) of them had concomitant CA, with mean age of 67 years (SD 14), 17 (68%) males and 8 (32%) females. Risk factors were: diabetes (24%), diuretic drugs (24%), chronic renal failure (16%) -2 of them undergoing hemodialysis and 4 kidney