with a suspected diagnosis of neuropsychiatric pSLE, underlying factors including infections, hypertension, metabolic abnormalities or adverse effects of medication should be excluded before considering a lupus-related neurological involvement². Finally, the diagnosis of pSLE should be also considered in case of severe complications such as macrophage activation syndrome or alveolar hemorrhage. Monogenic SLE should be suspected in early-onset SLE (< 5-year-old) and mainly comprise complement deficiencies, genetic overproduction of interferon- α , B-cell apoptosis defects and rare inherited immunodeficiencies. Each of these conditions is associated with specific features : 1) Primary complement defects are associated with recurrent pyogenic or neisserial infections 2) type-1 interferonopathies are often associated with spasticity, cerebral calcifications, encephalopathy, skin ulcers and chilblains, and, in some cases, with a growth delay (spondylenchondrodysplasia) 3) B-cell apoptosis defects (mutation in *PRKCD* gene) is associated with a lymphoproliferative disease. A proper diagnosis of SLE must therefore be based upon a complete family medical history as well as on clinical evaluation with details history of both present and past illnesses, analysis of growth chart as well as laboratory tests for SLE. The search for auto-antibodies towards nuclear antigens is a key step in the diagnosis strategy, keeping in mind that antinuclear antibodies are not specific for SLE. Screening for complement deficiencies via CH50, AP50, C3 and C4 is recommended in order to facilitate adequate treatment of comorbidities including infections² in pSLE patients².

Conclusion: The diagnosis of pSLE should be suspected in teenagers with acute unexplained symptoms, especially in case of abdominal pain or neuropsychiatric involvement. A monogenic predisposition to SLE should be considered in early-onset SLE, especially in patients with SLE family history, consanguinity, recurrent infections, and/or encephalopathy with spasticity.

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SP0078 CASE PRESENTER: LONGSTANDING NEURO LUPUS IN ADULT LIFE

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Background: Juvenile-onset systemic lupus erythematosus (SLE) poses significant challenges for paediatric and adult rheumatologists. Longstanding disease in adult life carries the sequelae of the protracted course of the disease, as well as of the various treatments received.

Objectives: To present a didactic case of long-standing SLE of childhood onset, with the purpose to familiarise the audience with the multifaceted aspects of the disease, following transition from adolescence into adulthood.

Methods: Report of an illustrative juvenile-onset SLE patient after transition in adulthood.

Results: A 25-year old lady was diagnosed with SLE at the age of 9, due to generalised tonic-clonic seizures (status epilepticus), photosensitive rash and positive serology for SLE (ANA, anti-dsDNA, low complements). She was treated with high-dose glucocorticoids and cyclophosphamide with a good neurologic response. At the age of 15, she developed hematuria and nephrotic proteinuria; a kidney biopsy was compatible with class IV lupus nephritis (LN), with few crescents. She received mycophenolate mofetil (MMF), again with glucocorticoids, with complete response at 12 months. After entering adulthood, 5 years later, at the age of 21, she had a severe renal flare with recurrence of nephrotic proteinuria and active urinary sediment. A second kidney biopsy was performed, which showed histologic transformation into mixed class IV + V LN, and increase in chronicity index. Readministration of MMF failed to provide at least partial response; to this end, high-dose intravenous cyclophosphamide was administered, again with no response after 6 months. Finally, the patient was treated with rituximab, in combination with MMF, which managed to achieve partial remission, with proteinuria levels ~ 1.5 gr/day and normal renal function. Sixteen years following her initial diagnosis, apart from her ongoing renal inflammation, our patient has suffered significant side-effects from long-term glucocorticoid therapy and her quality of life is significantly affected.

Conclusion: This case illustrates the formidable challenges faced by both patients and treating physicians, for a patient diagnosed with SLE in childhood and had frequent flares during transition into adulthood and later in adult life.

Disclosure of Interests: Antonis Fanouriakis Paid instructor for: Amgen, GSK, Speakers bureau: Abbvie, Enorasis, Genesis Pharma

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THURSDAY, 13 JUNE 2019

15:30:00 – 17:00:00

Radiographic progression in arthritides: still valid or a tale from the past!?

SP0079 STRUCTURAL DAMAGE PROGRESSION IN RA – DOES IT STILL MATTER WITH IMPROVED MEDICAL AND NON-MEDICAL TREATMENTS

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The distinction between symptomatic and disease modifying drugs is based on inhibition of structural damage and preservation of physical function. Radiographs of hands and feet are typically used to assess structural damage in RA. They provide a good representation of overall damage of all joints and bone erosions and joint space narrowing can be assessed reliably. Structural damage is the consequence of inflammation and is related to permanent loss of function and other outcomes important to patients such as work and quality of life. In cohorts of RA patients followed in the eighties of the twentieth century, the average progression rate was about 7 units of the modified Sharp score. This was still the case in the control arms of the RCTs in the nineties and early zeros. However, in recent trials the progression in the control arms is reduced to around 1 unit per year. There are several reasons for this reduced progression observed in clinical trials. First, the duration of placebo is limited to a maximum of 12-16 weeks for ethical reasons. Consequently, there is only restricted time to develop radiographic damage. Second, more frequently an active comparator is used instead of placebo. Third, there is better overall standard of care. Fourth, inclusion of patients with less severe disease in RCTs. Moreover, some speculate that there is a trend to a milder form of RA, however this is hard to proof. For all these reasons, it is essential to enrich the population with patients with a higher chance of showing radiographic progression over the (short) period of the RCT To enhance the probability of proving a reduction in radiographic progression. These factors include ACPA/RF-positivity, erosive disease and elevated CRP.

It is frequently asked if a reduction of the mean progression of 1 unit in the control arm to the mean progression of 0.5 unit in the treatment arm is clinically relevant. However, clinical relevance cannot be based on mean progression scores due to the skewness of the progression: many patients do not show progression, while a minority show (major) progression. A reduction in the likelihood of (significant) progression by treatment A over treatment B could already provide more useful information. Moreover, people tend to relate the '1 unit' to the maximum score of 448 units of the scale. Though, it is important to realise that a patient with a score of 50 already has major damage and that RA is a chronic disease with many patients suffering for many years. But true clinical relevance of structural damage needs to be established in observational cohorts over longer follow-up times.

Despite the limited radiographic progression in the control arms of RCTs, it was possible to show the disease modifying effect by inhibition of structural damage progression for csDMARDs (mainly MTX), all bDMARDs and tsDMARDs currently on the market.

Disclosure of Interests: Désirée van der Heijde Consultant for: AbbVie, Amgen, Astellas, AstraZeneca, Bristol-Myers Squibb, Boehringer Ingelheim, Celgene, Daiichi, Eli-Lilly, Galapagos, Gilead, GlaxoSmithKline, Janssen, Merck, Novartis, Pfizer, Regeneron, Roche, Sanofi, Takeda, Union Chimique Belge

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SP0080 STRUCTURAL DAMAGE PROGRESSION IN AXSPA

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Structural damage in axial spondyloarthritis (axSpA) develops usually first in the sacroiliac joints and later in the spine. While development of structural damage in the sacroiliac joints is mostly relevant for diagnosis and classification (non-radiographic versus radiographic axSpA), structural damage in the spine has a relevance for the long-term outcome of the disease. Structural damage in the spine and inflammatory activity are two major determinant of functional status and spinal mobility in axSpA.

Structural damage in the spine in axSpA is mostly attributable to the process of new bone formation (development of syndesmophytes resulting in bony ankylosis) occurring in the areas affected by inflammation. Advanced ankylosis of the

spine is the worst long-term outcome of this disease, although this occurs less frequently nowadays if compared to former decades. This fact might be related either to the natural course of the disease that becomes milder over time or to a consequent anti-inflammatory treatment initiated earlier in patients with axSpA. Structural damage in the spine in axSpA is usually assessed on plain radiographs of the spine and, therefore, is frequently referred to as radiographic spinal progression. In the presentation, pathophysiology, assessment and ways of prevention and/or retardation of structural damage progression in the spine in patients with axSpA will be discussed.

Disclosure of Interests: Denis Poddubnyy Grant/research support from: AbbVie, Merck Sharp & Dohme, Novartis, Consultant for: AbbVie, Bristol-Myers Squibb, Janssen, Merck Sharp & Dohme, Novartis, Pfizer, UCB Pharma, Speakers bureau: AbbVie, Bristol-Myers Squibb, Janssen, Merck Sharp & Dohme, Novartis, Pfizer, Roche, UCB Pharma

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SP0081 STRUCTURAL DAMAGE PROGRESSION IN PSA

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Psoriatic arthritis is a multifaceted disease in which the arthritis tends to be less frequent than in rheumatoid arthritis. This provides a challenge to measure radiographic progression using the simple and time-honoured fashion of assessing the hands and feet. Further, radiographic progression is slower in PsA and changes over a short time period, such as the placebo controlled phase of a trial, are minimal. Newer imaging, such as ultrasound and MRI may be more sensitive and responsive but data on these techniques are limited. These challenges, and how to overcome them, will be discussed.

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THURSDAY, 13 JUNE 2019

15:30:00 – 17:00:00

Difficult to manage Sjögren's syndrome and Myositis

SP0082 SCREENING FOR MALIGNANCIES IN SJOGREN SYNDROME AND MYOSITIS

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Both myositis and Sjögren syndrome may be associated with cancer. However, there are differences between the cancer-associated myositis and cancer that appears in patients with Sjögren syndrome, and these differences make for a distinct tumor screening approach. The fact that any type of cancer -mainly of the adenocarcinoma type- can be associated with myositis -dermatomyositis, either classical or amyopathic, immune-mediated necrotizing myopathy, or polymyositis phenotypes- makes more difficult to know if an occult malignancy is present. Nevertheless, in recent years biological markers such as several autoantibodies, essentially anti-TIF1 γ , but also anti-NXP2 and to some extent anti-HMGCR, and combined techniques such as PET/CT that allow to detect structural and functional changes by means of ^{18}F -Fluorodeoxyglucose and whole CT have helped the clinician to screen for an occult cancer in patients with myositis. Alternatively, the clinical situation and screening approaches in Sjögren syndrome are more focused in the detection of lymphoproliferative disorders, mostly in salivary glands (MALT type lymphoma) but also marginal zone or diffuse large B cell lymphomas. Several approaches for detecting MALT-type lymphoma or generalized lymphomas, beyond the well-known parameters such as low complement levels, cytopenias, cryoglobulins or persistent enlargement of salivary glands, are also discussed.

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THURSDAY, 13 JUNE 2019

15:30:00 – 17:00:00

Anergy, exhaustion or post-activation in autoimmunity; Facts and future consequences

SP0083 MOLECULAR AND METABOLIC EVENTS WHICH UNDERWRITE T CELL PHENOTYPES IN AUTOIMMUNITY

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The distribution and function of T cell subsets in patients with systemic lupus erythematosus (SLE) is aberrant. Distinct molecular and metabolic events dictate the numbers and function of T cells. Specifically, the transcriptional repressor cyclic AMP response element modulator alpha (CREM α), which is increased in cells from patients with SLE, accounts for the decreased expression of interleukin (IL)-2 and the increased expression of IL-17 through distinct epigenetic processes. CREM α promotes Th17 cell expansion by promoting the expression of Glis1, the first enzyme in glutaminolysis and by suppressing the expression of pyruvate dehydrogenase phosphatase catalytic subunit 2 that enables entry of pyruvate into the Krebs cycle. In parallel, calcium calmodulin kinase 4 which is responsible for the increased binding of CREM α to cAMP response elements of the *IL-2* and *IL-17* loci, promotes the activity of pyruvate kinase M2 and promotes glycolysis and Th17 generation while suppressing the numbers of regulatory T cells. Understanding the exact molecular and metabolic processes that control T cell function in SLE enables therapeutic considerations.

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SP0084 POST-ACTIVATED B CELLS IN AUTOIMMUNITY

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Background: B cells are key players in autoimmune diseases such as systemic lupus erythematosus (SLE), primary Sjögren's syndrome (pSS) and rheumatoid arthritis (RA). In the past, it was believed that B cells from these patients were hyperresponsive to B cell receptor (BCR) and Toll-like receptor (TLR) signaling. New insights suggest that B cells from these patients present a post-activated *functional* phenotype.

Objectives: We aim at characterizing B cells and B cell responses of SLE, pSS and RA patients to understand which venues can be taken towards new therapies for these diseases.

Methods: B cells and B cell subsets from peripheral blood samples from SLE, pSS and RA patients and healthy donors (HD), as well as few autoimmune tissues, were analyzed for: phosphotyrosine kinase (PTK) phosphorylation kinetics, protein phosphatase activity, expression of phosphatases or of checkpoint molecules, such as *e.g.* PD-1, before and after BCR engagement, alone or together with TLR9 and CD40 stimulation, differentiation and proliferation. Expression of transcription factors, such as *e.g.* STAT1, and the effect of interferons in their expression in B cells from patients were also evaluated.

Results: B cell responses upon BCR engagement in SLE, pSS, RA patients were abnormal with diminished BCR downstream PTK phosphorylation. TLR9, but not CD40 responses were also abnormal. Part of the abnormality related to diffuse up-regulation of phosphatases that apparently counteracted PTK signaling. The abnormality was partially mimicked by repeated signaling through the BCR of HD B cells and could be overcome by CD40 engagement. Check-point molecules, such as *e.g.* PD-1, was differentially expressed in SLE naive and memory B cells. SLE naive and memory B cells expressed higher amounts of STAT1 compared to those of pSS, RA and HD.

Conclusion: Post-activated B cells are characterized by a phenotype of dysregulated expression of certain check-point molecules, such as PD-1, some transcription factors, like STAT1 and certain phosphatases (figure 1). Our data suggest that CD40 activation is involved in modulating BCR responses in post-activated B cells. This has implications for innovative therapies since blocking BCR signaling pathways and CD40 activation as well as targeting certain phosphatases may have synergistic value for treating systemic autoimmunity.