This large-scale analysis led to the identification of monogenic causes of lupus in about 7% of analysed patients in an unselected paediatric population of *JSLE*. 7/8 causes are related to an innate immune disorder with efferocytosis deficiency, emphasising the importance of apoptotic body clearance in the pathogenesis of lupus. Other variants in *KLC* or *PLC* genes may represent novel monogenic causes of lupus or could influence disease-onset by increasing the penetrance of more severe mutations. The treatment is still poorly adapted to the underlying mechanisms but progress in immunomonitoring together with the revolution in the field of genetics prompt clinician to set up targeted therapies considering genetic background and biomarkers.

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SP0128

FINDING THE NEEDLE IN THE HAYSTACK AND USING IT: GALECTIN-9 AS A BIOMARKER IN JUVENILE DERMATOMYOSITIS

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Background: Juvenile dermatomyositis (JDM) is a rare systemic immune-mediated disease involving skin and muscle. A high disease burden exists with risk of both under- and overtreatment due to the lack of reliable biomarkers.

Methods: A multiplex immunoassay was performed in a discovery cohort for plasma levels of 45 proteins related to inflammation in 25 well-defined JDM patients, determined by clinical activity and treatment.

Results were validated in two independent international external and internal validation cohorts (n=125).

In a longitudinal cohort (n=30), the performance of this biomarker over time was assessed with a median 2.8 years follow-up.

Results: In the discovery cohort we found a clustering of 10 mediators of which Galectin-9 and CXCL10 distinguished best between active disease and remission. Both biomarkers had a strong correlation with clinical parameters (Spearman *r* with Physician's global assessment (PGA)=0.75 for both). This was confirmed in the validation cohorts (Spearman *r*=0.7 with PGA, for both). In the longitudinal cohort galectin-9 and CXCL10 correlated with disease activity over time, and elevated levels could predict flares several months before clinical symptoms. Both cross-sectionally and longitudinally, galectin-9 and CXCL10 outperformed creatine kinase activity.

Conclusion: Galectin-9 and CXCL10 are robust biomarkers for disease activity in JDM. A short-term implementation into clinical practice is feasible and can facilitate individualised treatment.

Disclosure of Interest: None declared

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Triple T: T cells, technologies and therapies

SP0129

STUDYING T CELL FUNCTION IN RA AND PSA

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Rheumatoid arthritis (RA) and spondyloarthritis (SpA) describe a group of inflammatory joint diseases affecting ~2% of the population. RA has strong genetic associations with *HLA-DR*, indicating a role for CD4 +T cells. CD4 +T cells are prominently present in the RA joint, where they can contribute to the inflammatory milieu. I will present recent data from our lab regarding the presence, regulation and function of different CD4 +T cell subsets that are present in the RA joint.

In contrast, SpA has strong genetic associations with *HLA-B/RUNX3* which imply a role for CD8 +T cells. Furthermore, genetic associations with *IL23R/TRAF3IP2* and the clinical efficacy of IL-17 blockade in SpA, indicate a role for IL-17 in SpA. This provides a strong rationale to investigate the presence, phenotype and functional capacity of IL-17 +CD8+T cells in the joints of patients with SpA. I will present novel data regarding the presence, phenotype and potential function of IL-17 +CD8+T cells in the joints of patients with SpA. Collectively, our data indicate that IL-17 +CD8+T cells may be important contributors to the pathogenesis of SpA.

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SP0130

TOWARDS T CELL TOLERANCE IN RHEUMATOID ARTHRITIS

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Disease modifying strategies are available for treatment of rheumatoid arthritis (RA), and good response rates are achieved. However, limitations include toxicity, a response rate ceiling, cost and rationing of biologic therapies, inability to cure or permanently reverse RA pathology, and inability to prevent disease. Immunotherapies targeting checkpoint molecules are markedly changing the landscape of clinical oncology. In autoimmune diseases such as RA, dendritic cells represent an important target for antigen-specific immunotherapy for T cell tolerance. Antigen-specific strategies promise greater specificity and safety, without general immune suppression, and thus the potential for intervention in at-risk subjects before disease onset. In a proof-of-concept trial, delivery of autoantigenic peptides and autologous tolerogenic dendritic cells was safe and had immunomodulatory effects on T cells including reduction of effector T cells and a relative increase in regulatory T cells. We have developed and are trialling in RA patients, antigen-specific immunotherapy targeting dendritic cells *in situ* with liposomes encapsulating autoantigenic peptide and calcitriol with the aim of antigen-specific T cell tolerance. I will discuss the development of antigen-specific tolerance strategies and the parallel development of immune monitoring assays to determine T cell outcomes in clinical trials in RA.

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Navigating the world of digital health

SP0131

ONLINE SOCIAL MEDIA PLATFORMS AND PUBLIC HEALTH INFORMATION: AN EXPLORATION INTO ARTHRITIS RELATED VIDEOS ON YOUTUBE IN 2017

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Background: YouTube is one of the most used social media platforms from a desktop computer. YouTube provides a virtual platform that allows users to upload and view video content. Due to this functionality, YouTube is a valuable method for sharing and disseminating health information.

Patients with chronic conditions (including arthritis) are increasingly relying on online health information to help manage their symptoms, with 75% of patients living with chronic conditions reporting their healthcare decisions are influenced by information found online.

To date there have been no studies that have explored the information available for people searching for advice and support about arthritis on YouTube.

Methods: Patient and public involvement (PPI) representatives contributed to defining terms likely to be used by members of the public with arthritis searching for self-management strategies on YouTube. These included "joint pain", "knee pain", "hip pain", "hand pain" AND "helping" or "improving". From each of these search terms the top 10 videos sorted by view counts were chosen. Videos were included if the content was related to arthritis, in English and published in 2017. Videos were excluded if they were inappropriate or offensive, not related to humans or duplicates. The top 50 videos sorted by view count were included for analysis. This data set was systematically coded by the team lead (EH) and cross-checked by an additional team member (AC). Coded data were analysed using SPSS.

Results: Eighty videos were retrieved, 7 videos were irrelevant, 9 were duplicates and 11 were non-English language videos. Sixty-three videos were included for analysis. From the top fifty videos (sorted by view count), "Herbal Medicine" (n=14; 28%) was the most common category, followed by "Exercise and Stretching" (n=12; 24%). The most watched video relating to the self-management of arthritis was related to "Herbal Medicine" with a view count close to two million (n=1,930,905) within the four months since it had been posted online. Twenty five (69%) of the arthritis management related videos originated from the USA, with the UK producing only one video. Fifteen (30%) of the videos had been posted by self-reported health professionals. Nineteen (38%) of the videos were commercial. None of the videos produced links to research to back up their claims.

Conclusion: Sharing of health information on YouTube is unregulated. The most accessed videos include alternative approaches to self-management and are not posted by registered health care professionals (HCPs). Whilst a wide range of arthritis-related videos were retrieved, few were created by HCPs or reputable health care organisations. YouTube is a powerful tool for people with arthritis to