therapies for SS patients are still lacking. Polysaccharides derived from *Dendrobium officinale* (DOP) have been shown to possess immunomodulatory functions in various animal models. However, it remains unclear whether DOP can modulate immune responses and have potential therapeutic effects on SS.

Objectives: To investigate the immune modulatory and therapeutic effects of DOP on experimental SS (ESS) in mice.

Methods: Polysaccharides were extracted from *Dendrobium officinale* with removal of endotoxin. C57BL/6 mice were immunized with SG-derived proteins for ESS induction, followed by daily oral treatment of vehicle and different dosages of DOP. SG functions were assessed by monitoring saliva flow rates whereas lymphocytic infiltration and tissue destruction in SG were examined by histological analysis. Both T and B cell populations in peripheral lymphoid organs were analyzed by flow cytometry. The effects of DOP on IL-10-producing B cell (B10 cell) induction and Th17 cell differentiation were examined in culture. Moreover, TLR4 and TLR9 inhibitors were used to identify the function of TLR4/TLR9 in DOP-mediated effects.

Results: ESS mice with DOP treatment displayed significantly higher saliva flow rates than vehicle-treated ESS mice. DOP treatment ameliorated SG tissue destruction accompanied with profoundly reduced lymphocytic infiltration in ESS mice when compared with vehicle-treated counterparts. Moreover, DOP treatment markedly increased the numbers of B10 cells but decreased numbers of Th17 cells in peripheral lymphoid organs of ESS mice. Notably, DOP markedly increased frequencies and numbers of B10 cells but did not affect Th17 cells generation in culture. Moreover, TLR4 inhibitor, but not TLR9 inhibitor, significantly suppressed DOP-induced IL-10 production in B cells.

Conclusions: The results show that DOP treatment ameliorates ESS disease development by inducing regulatory B10 cells, suggesting that DOP might be a promising candidate for treating SS.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3291

AB0157 TARGETING T-CELL TRAFFICKING IN A MURINE MODEL OF SJÖGREN'S SYNDROME

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Background: Salivary glands of primary Sjögren's syndrome (pSS) are characterised by complex leukocyte infiltration organised into tertiary lymphoid structures (TLS). The mechanisms regulating leukocyte trafficking into inflamed salivary glands are poorly described, but dysregulated T-cell recruitment during inflammation is believed to contribute to disease onset and chronicity. We recently described a homeostatic pathway in which a B cell-derived peptide (PEPITEM), secreted in response to adiponectin, regulates T-cell trafficking during inflammation via sphingosine-1-phosphate activity on endothelial cells¹. Disruption of this pathway by downregulation of adiponectin receptors on circulating B cells has been demonstrated in type-1 diabetes and rheumatoid arthritis, suggesting a potential role for PEPITEM in the pathogenesis of autoimmune diseases, and indicating a role for adiponectin receptors as biomarkers in these conditions¹.

Objectives: We aimed to investigate the efficacy of PEPITEM as an inhibitor of T-cell trafficking in an inducible animal model of salivary gland inflammation that mimics the histological features of pSS, and to investigate the potential translatability of this pathway in patients with pSS.

Methods: Submandibular salivary glands of C57BL/6 mice were intra-ductally cannulated with luciferase-encoding replication-deficient adenovirus to induce TLS formation as previously described². Mice were administered daily either PBS or PEPITEM by intraperitoneal injection from day 0, and their salivary glands dissected at day 5 post cannulation. T-cell infiltration into salivary glands was assessed using a combination of flow cytometry, immunofluorescence, and qRT-PCR for inflammatory chemokines.

Results: B cells in sera from cannulated animals express lower levels of both adiponectin receptors 1 and 2 in comparison with non-inflamed control mice. In cannulated animals treated with PEPITEM, histological analysis of salivary glands revealed fewer, as well as less aggregated, infiltrating T cells. Both CD4⁺ and CD8⁺ numbers were significantly lower in the salivary glands of PEPITEM-treated animals. Furthermore, administration of PEPITEM also decreased mRNA transcripts for lymphotoxin beta, IL-7, lymphoid chemokines (CCL19 and CXCL13)

and T-cell chemokine receptor CCR7, cytokines and chemokines known to regulate ectopic lymphoneogenesis in pSS. Samples from pSS patients are currently being assessed to validate the relevance of this pathway in pSS.

Conclusions: These results demonstrate that administration of exogenous PEPITEM can reduce T-cell influx into salivary glands. This may represent a rescue of the homeostatic regulation of leukocyte trafficking which is disrupted in inflammation. Our work suggests that PEPITEM should be considered to address therapeutic needs in chronic inflammatory conditions, and that the detection of decreased levels of adiponectin receptors could serve as a biomarker in pSS.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7486

AB0158 HISTOLOGICAL AND SEROLOGICAL CHARACTERISTICS CONTRIBUTE TO DIVERGENT OUTCOMES FOR INDIGENOUS PATIENTS WITH LUPUS NEPHRITIS

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Background: Renal outcomes for Indigenous Australians (IA) with Lupus Nephritis (LN) are worse than for other ethnic groups.

Objectives: To investigate whether differences in renal biopsy findings can explain the worse renal outcome in Indigenous patients

Methods: A single centre cohort study of 83 SLE patients undergoing a first renal biopsy at our institution for LN evaluation. Histological assessment included review of ISN classification, A/C/C sub classification, NIH tubulointerstitial activity and chronicity indices, tubulointerstitial index, semiquantitative IF scores for IgG, IgM, IgA, C3 and C1q deposits, localisation of electron dense deposits (EDD) and presence of thrombosis, vasculitis and tubuloreticular inclusions (TRI). Differences in histological and routine clinical findings including autoantibody profiles between IA patients (n=11) and the pooled data from Asian (n=29) and Caucasian (n=43) patients were analysed by non-parametric statistical methods.

Results: IA patients were younger at diagnosis (31 vs 38.5 years., p=0.08) and their biopsies contained fewer glomeruli (11 vs 21, p<0.01), more class I/II (28 vs 15%) and no class V lesions (0 vs 21%) (p=0.06 for overall comparison). IA patients were less likely to have cellular crescents (0 vs. 25%, p=0.03), more likely to have fibrous crescents and a low tubulointerstitial index (p=0.08). The overall AI (5.1 vs 4.9) and CI scores (1.1 vs. 1.3) or presence of full house IF deposits (67 vs 71%), renal thrombosis (0 vs 4%) or TRI (55 vs. 39%) was similar across groups (all p>0.3). IA patients had lower eGFR (43 vs 65, p=0.025), more often carried anti-SSA52kd Ab (73 vs 33%, p=0.02) and during a mean follow-up of almost nine years, had a higher proportion of patients developing ESRD (18 vs 3%, p=0.02).

Conclusions: IA patients with SLE who develop LN have fewer glomeruli, an increased frequency of mesangial abnormalities with absence of cellular crescents and membranous nephropathy and a high prevalence of anti-SSA 52KD Ab. Although based on small numbers, this suggests that lower nephron mass and immunological pathways involving IFN-inducible anti-SSA expression may contribute to LN development and worse renal outcome in Indigenous patients.

Acknowledgements: Supported by an unrestricted grant from the Arthritis Foundation of Western Australia. We acknowledge the contribution by Drs Brandon Wong and Kimberly Minats in data collection.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2655

AB0159 CYTOKINE PRODUCTION BY ACTIVATED PLASMACYTOID DENDRITIC CELLS AND NK CELLS IS SUPPRESSED BY AN IRAK4 INHIBITOR

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Background: In SLE, immune complexes containing self-derived DNA or RNA (RNA-IC) trigger the synthesis of several pro-inflammatory cytokines by immune cells. Treatment with anti-malarials, such as hydroxychloroquine (HCQ), which