ARA ORAL ABSTRACTS

O-1
VARICELLA ZOSTER VIRUS NOT DETECTED IN PATIENTS SUSPECTED OF HAVING GIANT CELL ARTERITIS

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Aim. A number of recent studies have detected high rates of varicella zoster virus (VZV) antigen in temporal artery biopsy (TAB) specimens from patients with giant cell arteritis (GCA). This finding has not been widely replicated. We aimed to assess this potential association by evaluating clinical, serological and biopsy markers of VZV infection in a cohort of suspected GCA patients.

Method. 56 patients initially suspected of having GCA were prospectively evaluated between May 2016 and December 2017. Patients underwent VZV clinical assessment and serological testing within 72 hours from commencing corticosteroids and were followed for a minimum of three months. Formalin fixed TABs were cut into four or more sections and stained using a mouse derived antibody against VZV antigen. Detection was reported by two experienced, blinded immunohistochemistry researchers. A herpes zoster skin biopsy was the positive control tissue.

Result. Median age was 69. GCA symptoms included headache (91% patients), visual disturbance (38%) and jaw claudication (30%). 11/56 (20%) biopsies had classic mural inflammation and a further 11 (20%) had inflammation limited to the vasa-vasorum or periadventitial small vessels. 38 (68%) met 1990 ACR classification criteria for GCA. No patients had active herpes zoster at enrolment and only one developed a zoster compatible rash on clinical follow-up. 43 (77%) recalled a remote history of chickenpox and/or zoster skin rash. Five (9%) had received the adult zoster vaccine. 55/56 (98%) biopsies stained negative for VZV antigen and one stained equivocally positive. Of the 51 who underwent acute VZV serological testing, 50 (98%) were IgM negative and one was equivocal. 49 (96%) patients were IgG positive, consistent with past VZV exposure.

Conclusions. We did not detect clinical, serological or biopsy evidence of active VZV infection in a prospective cohort of 56 patients initially suspected of having GCA.

O-2
PHOSPHODIESTERASE-5 INHIBITORS FOR PULMONARY HYPERTENSION: A COCHRANE REVIEW – THE RESULTS FOR GROUP 1 PULMONARY ARTERIAL HYPERTENSION

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Aim. Pulmonary hypertension comprises a complex group of conditions characterised by elevated pulmonary vascular resistance leading to right heart failure. Group 1 pulmonary arterial hypertension (PAH) occurs due to conditions affecting pulmonary arterioles including connective tissue diseases (CTD). As part of a larger Cochrane review, PDE-5 inhibitors for Pulmonary Hypertension, we sought to evaluate whether phosphodiesterase-5 inhibitors (PDE5i) improved outcomes in Group 1 PAH.

Method. Searches for randomised controlled studies on CENTRAL, MEDLINE, EMBASE, CINAHL, and Web of Science to August 2017 were performed.

Results. Fifteen trials with 1951 participants with PAH were included. Ten studies compared PDE5i to placebo. Three studies compared PDE5i to placebo as add-on therapy to endothelin receptor antagonist (ERA) or a prostacyclin analogue. Two studies compared PDE5i to ERA. The mean duration was 14 weeks and ranged from 2 weeks to 12 months. There was significant improvement in WHO functional class (OR 8.59, 95% CI 3.95 - 18.72; p <0.00001), and clinically significant improvement in six minute walk distance (6MWD) (MD 52.10m, 95% CI 42.30 - 61.89; p < 0.00001) favouring PDE5i to placebo. There were also statistically significant improvements in mortality and haemodynamic outcomes. There were statistically significant reductions in mortality (OR 0.11, 95% CI 0.01 - 0.85; p=0.03) and clinical worsening (OR 0.38, 95% CI 0.16 - 0.88; p=0.02) favouring PDE5i to placebo as add-on therapy. Results for PDE5i compared to ERA revealed no significant differences in mortality or improvement in WHO functional class. However, results favoured ERA over PDE5i for improvements in 6MWD.

Conclusions. This data supports the role for PDE5i, as a single agent and in combination with other PAH-specific therapy, in the treatment of group 1 PAH. Further large, multicentred trials should assess PDE5i in terms of survival and patient-centred outcomes in disease-specific populations when used as combination therapy.

O-3
SERUM METABOLOMICS ANALYSIS REVEALS A DISTINCT METABOLIC PROFILES OF MYOSITIS PATIENTS COMPARED TO LUPUS PATIENTS

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Aims. Idiopathic inflammatory myopathies (IIM) and lupus are interferonopathies with various clinico-pathologic similarities although inflammation in myositis tends to remain localised while it is systemic in lupus. It is often difficult to differentiate them in the clinic, and early diagnosis is crucial for timely initiation of appropriate therapies. Another difficult encountered is to identify cases with smouldering muscle disease from damage. To Identify whether the serum Metabolome by 1NMR spectroscopy of IIM is distinctive, and which of the analytes are specifically altered in patients with IIM as compared with lupus and healthy controls.

Methods. The serum samples were collected from 74 IIM patients (median age= 29 years, M/F =19:57, Bohan and Peter's criteria), 91 healthy controls (median age= 28 years, M/F=22:69) and 51 lupus patients (median age=28 years, M/F 4:47). The serum metabolic profiles were obtained at 800 MHZ NMR spectrometer and compared using orthogonal partial least-squares discriminant analysis (OPLS-DA, Fig. 1A). The discriminatory metabolites were identified based on variable importance in projection (VIP) statistics (Fig. 1B) and further evaluated for statistical significance (p-value <0.05).

Results. Compared to Lupus, IIM was characterized by increased levels of acetate, lactate, creatine/creatinine, ornithine and amino acids (like Phenylalanine, Tyrosine, Alanine, Glutamate, Threonine, Lysine, Arginine and BCAAs) and decreased glucose, glutamine and lipid/membrane metabolites (like LDL, VLDL, Choline, GPC, betaine, etc) (Fig. 1B). Metabolic profile of children with juvenile Dermatomyositis differed from that of adults with myositis though profile of adults with polymyositis and dermatomyositis did not differ. Metabolomics profiling could distinguish cases in subacute versus chronic phase of illness. There was no difference with autoantibody positivity and other clinical features.

Conclusion. Metabolic pathways operative in myositis are distinct to lupus. Metabolomics serve to dostinguish myositis patients from lupus, as well as serve as useful marker to differentiate activity from damage.

O-4
VACCINATION DECISIONS AND INCIDENCE OF NEONATAL INFECTIONS IN MOTHERS EXPOSED TO BIOLOGICAL DURING PREGNANCY

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Aims. To determine vaccination decisions of mothers with rheumatologic diseases exposed to biologics during pregnancy and the incidence of serious neonatal infections after third trimester exposure.

Methods. All Australian women with inflammatory arthritis, exposed to biologics during the preconception, antenatal and/or postpartum periods, were invited to participate in the Pregnancy Exposed to Biological (PEB)

study from May 2009 – Jan 2018. Recruitment was via direct invitation from patients treating rheumatologists, community groups, and via social media. Following self-referral to the study, retrospective data was collected, including biological exposure, vaccination history and incidence of serious neonatal infections, defined as infection requiring hospitalisation.

Results. Preliminary data is available regarding 35 offspring from 28 mothers. 34 of 35 offspring were vaccinated. 29 received vaccinations in accordance with the Australian National Immunisation Program Schedule. 1 mother declined to immunise her infant due to personal preference. 13 infants were exposed to a tumour necrosis factor inhibitor (TNFi) during the third trimester. Of these, 4 had Rotavirus vaccine delayed from 2 to 4 months and 1 infant until 6 months. 1 infant did not receive the Rotavirus vaccine at 2 months due to exposure to a TNFi while breastfeeding. There were no incidences of serious neonatal infections.

Conclusions. Current guidelines recommend deferring live vaccines, such as rotavirus, until after 6 months if exposed to a biologic in the third trimester(1-4). Compliance with these recommendations were only observed in one infant in our study. One infant received delayed Rotavirus vaccination due to concern about TNFi exposure during breastfeeding; this is not in keeping with current guidelines. Of the 12 infants exposed to a biologic during the third trimester who did not delay live vaccination until after 6 months, there were no incidents of serious neonatal infections, in keeping with the findings of current published case series.

O-5
GLUCOCORTICOID-INDUCED LEUCINE ZIPPER (GILZ) DEFICIENCY AGGRAVATES THE LYN-DEFICIENT MURINE MODEL OF LUPUS

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Aims. Systemic lupus erythematosus (SLE) is a multi-system autoimmune disease of unknown aetiology. C57BL/6 mice deficient in glucocorticoid-induced leucine zipper (GILZ), an intracellular protein involved in glucocorticoid effects on immunity, develop lupus-like autoimmunity and excess B cell activation (Jones et al., 2016). Lyn-deficient mice develop lupus-like autoimmunity due to hyperactive B cells resulting in excess IL-6 production, cyclical exacerbation of inflammation by further activation of B and T cells (Tsantikos et al., 2010), and increased Type I IFN. However, the effect of GILZ in lupus-prone mice is unknown. Therefore, we aimed to test the hypothesis that GILZ modulates autoimmunity in the lyn-deficient murine model of lupus.

Methods. We generated GILZ-deficient mice on a lyn-deficient background (GILZ-lyn double knock out (DKO)) and compared them to WT and lynKO mice. The effects of GILZ deficiency on spleen weight, nephritis, Type I interferon-induced genes (ISG) and autoantibodies were examined.

Results. We observed heightened lupus-like features in GILZ-lyn DKO mice, compared to LynKO, that include increased spleen weights ($p=0.041$) and more severe glomerulonephritis, especially segmental necrosis. A panel of ISG (ifi44, usp18, oas3, cxcl10, isg15, mx1, irf7, stat1 and ifit3) and an overall ISG score was significantly increased ($p=0.0023$) in GILZ-lyn DKO mice compared to LynKO. In contrast, serum autoantibodies (dsDNA, Sm, histone, Jo-1, Scl-70, SSA, SSB, U1RNP, Ro52) were not increased in GILZ-lyn DKO mice compared to LynKO.

Conclusions. In LynKO lupus-prone mice, spleen weight, glomerulonephritis, and ISG profiles were significantly exacerbated by GILZ deficiency, while autoantibody titres were unaffected. This suggests that endogenous GILZ exerts an inhibitory effect on IFN pathways in this lupus model. Therefore, GILZ potentially regulates the cycle of inflammation in SLE by inhibiting IFN responses downstream of autoantibodies. A GILZ-based treatment could be a potential therapeutic strategy in SLE.

O-6
ASSOCIATION BETWEEN SLEDAI-2K DOMAINS AND ORGAN DAMAGE ACCRUAL

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Aims. Prevention of permanent organ damage is a key goal of SLE management. Overall disease activity measured by SLE Disease Activity Index (SLEDAI-2k) is a risk factor for damage, but the contribution of organ-specific activity to damage risk has not been enumerated. We sought to determine the degree to which organ domains of SLEDAI-2k are associated with damage accrual.

Methods. A dataset of SLE patients (2007 – 2017) at the Australian Lupus Registry was studied. Variables collected at each visit included all domains of SLEDAI-2k, Physician Global Assessment, and medications. Systemic Lupus International Collaborating Clinics/ACR Damage Index (SDI) was recorded annually and each visit was labelled "damage transition" or "non-damage transition" based on whether SDI increased at the subsequent annual measure. The association of risk of SDI increase with SLEDAI-2k domains was assessed using multivariable logistic regression analysis adjusted for confounding by medication use.

Results. 5538 visits from 266 patients (86.5% female, 47.4% Caucasian, 66% dsDNA positive) were analysed; at enrolment median (range) SLEDAI-2k was 4 (0-26) and SDI was 0 (0-4). Upon multivariable regression analysis, domains found to be significant were: low complement, proteinuria, haematuria, leukopenia, pyuria, pericarditis, alopecia, rash and arthritis. Upon further adjustment for prednisolone exposure, the effects of some domains were attenuated, but pericarditis (odd ratio (OR) = 4.06, 95%CI= 1.68-9.83), pyuria (OR= 1.94, 1.47-2.56), arthritis (OR=1.71, 1.35-2.16), and rash (OR=1.43, 1.20-1.70), alopecia (OR=1.43, 1.10-1.86) and leukopenia (OR=1.36, 1.03-1.78) remained significant. No other SLEDAI-2k domains showed a significant association, in part due to infrequent occurrence. SLEDAI-2k domains weightings were not congruent with the respective risk of damage accrual.

Conclusion. In study, only some SLEDAI-2k domains were significantly associated with organ damage accrual. Re-appraisal of weightings in SLE disease activity scores based on their association with outcome is potentially warranted.

O-7
CHARACTERISATION OF BONE MARROW PATHOLOGIES ACROSS THE SPECTRUM OF MODIC CHANGES IN THE HUMAN LUMBAR SPINE

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Aim. MRI identified vertebral Modic changes (MC) are associated with intervertebral disc degeneration and low back pain. However, the aetiology and pathobiology of MC remain elusive. Reports on the bone marrow pathology of MC have been limited to MC type 1 and 2, for small sample sizes (n=3 per MC) or bone marrow aspirate analyses. Thus, the study aim was to perform a comprehensive characterisation of the bone marrow histopathology associated with the spectrum of MC, i.e. MC type 1, 2 and 3.

Method. Forty-one patients (17 women, 24 men; mean age 55±13 years) underwent lumbar spine surgery with pedicle screw instrumentation and showed MC on pre-operative lumbar MRI. Cases were subdivided: MC type 1 (MC1; n=11), MC type 2 (MC2; n=23), MC type 3 (MC3; n=7). For all patients, a transpedicular vertebral subchondral bone biopsy (10-20mmx3mm) was harvested from the MC region and processed for undecalcified histology. Three trained assessors scored the presence and percentage tissue extent of bone marrow pathologies: inflammation (+/- neutrophil aggregates), fibrosis, oedema, and necrosis. Inter-observer reproducibility for pathology scoring was high (intraclass correlation coefficient 0.82).

Result. Inflammation was present at a moderate extent (20-50%) for all three MC types. MC1 bone marrow was fibrotic (20-50%) compared to MC2 (<5%) and MC3 (<5%), $p<0.005$. Oedema and adipocyte necrosis were minimal (<5%) for all MC types. There was no evidence of infection present in MC1, MC2, or MC3 bone marrow.

Conclusions. The predominant bone marrow pathology common to MC1, MC2, and MC3 is inflammation. Increased bone marrow fibrosis in MC1 distinguishes this MC type from MC2 and MC3. These observations are consistent with MC1 representing a bone marrow healing response to

disc/endplate injury, whereas MC2 and MC3 are consistent with the persistence of an inflammatory stimulus as a disease model.

O-8
ELEVATED THYROID STIMULATING HORMONE AS A POTENTIAL BIOMARKER FOR RHEUMATIC IMMUNE-RELATED ADVERSE EVENTS FOLLOWING PD-1 INHIBITOR THERAPY

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Aim. Programmed cell death protein (PD-1) inhibitor immunotherapy is being increasingly used in oncology, but may cause immune-related adverse events (irAEs) resembling classical autoimmune diseases. No biomarker to predict the development of rheumatic irAEs has yet been identified. Thyroid stimulating hormone (TSH) is frequently tested prior to the administration of PD-1 inhibitors to screen for existing thyroid disease. We therefore sought to investigate whether parameters related to TSH are associated with the development of irAEs following PD-1 inhibitor therapy.

Method. This was a retrospective chart review of all patients at a single centre who had a TSH level performed in the institutional laboratory prior to being dispensed nivolumab or pembrolizumab before January 1, 2017, with follow-up until July 1, 2017. TSH levels before and during PD-1 inhibitor therapy were recorded.

Result. There were 213 episodes of therapy which met criteria, of which rheumatic irAEs occurred in 16 (7.5%). Even when corrected for duration of exposure to PD-1 inhibitor therapy, elevated TSH levels (>4.2mU/L) were significantly associated with the development of rheumatic irAEs (adjusted OR 6.08, 1.53-24.22), and this was not weakened by excluding patients who went on to develop thyroid irAEs. Using a pre-PD-1 inhibitor TSH level > 2.4 to predict rheumatic irAEs led to a PPV of 25% and a NPV of 93% in our cohort, and the addition of an oncological response to therapy to this led to a PPV of 50% and a NPV of 94%.

Conclusions. Elevated TSH levels may be a useful factor in predicting rheumatic irAEs. In particular, a pre-PD-1 inhibitor TSH level of >2.4mU/L, in combination with oncological response to therapy, may identify patients at risk of rheumatic irAEs. Associations observed in this cohort should be examined in larger cohorts to determine the clinical utility of TSH in predicting rheumatic irAEs.

O-9
PERFORMANCE OF THE 2017 EUROPEAN LEAGUE AGAINST RHEUMATISM/AMERICAN COLLEGE OF RHEUMATOLOGY (EULAR/ACR) CLASSIFICATION CRITERIA FOR ADULT IDIOPATHIC INFLAMMATORY MYOPATHIES (IIM) IN CLINICAL PRACTICE IN AN AUSTRALIAN COHORT

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Background/Aims. EULAR/ACR recently approved classification criteria for IMM with 93% sensitivity and 88% specificity (87% and 82% respectively without muscle biopsy). An acknowledged limitation of the study is the absence of controls/comparators in the external validation cohort, prompting the authors to call for further validation studies in different populations. To evaluate the performance of the criteria in an Australian cohort of adult patients with suspected myositis. To assess the effect of including MRI or an extended panel of antibodies, as additional 'risk factors'.

Methods. Data were collected retrospectively on all patients referred for muscle biopsy to our institution between January 2012 and December 2016. Patients were scored for 'risk of IMM' according to the EULAR/ACR criteria and dichotomized into probable/definite and negative/possible groups according to their risk score. Performance of the criteria was evaluated by logistic regression with clinician diagnosis of IMM (yes/no) as the dependant variable and the dichotomized risk score as the independent variable. ROC analysis was used to determine the likely optimal cut point.

Results. 31 of 80 patients had IMM. Application of EULAR/ACR criteria showed a lower sensitivity (87%) and specificity (86%) than reported in the classification study of 93% and 88% respectively. The optimal cut point of 6.05 (sensitivity 97%, specificity 82%) was lower than the EULAR/ACR cut point of 6.7. Inclusion of MRI (AUC=0.91) or an extended antibody panel (AUC=0.93) improved the ability of the model to identify IMM patients.

Conclusions. Application of the EULAR/ACR criteria to an Australian cohort has shown lower specificity and sensitivity, and lower optimal cut-point than reported for the classification study. MRI or extended antibody panel improved the ability of the model to identify IMM. The performance of the criteria should be further evaluated in a larger sample to confirm generalisability of these results for Australian patients.

O-10
REPEAT SEROLOGICAL TESTING FOR ANTI-CITRULLINATED PEPTIDE ANTIBODY AFTER COMMENCEMENT OF THERAPY IS NOT HELPFUL IN PATIENTS WITH SERONEGATIVE RHEUMATOID ARTHRITIS

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Aim. Anti-citrullinated peptide antibody (ACPA) and rheumatoid factor (RF) define "seropositive" rheumatoid arthritis (RA). Both predict disease course, development of extra-articular features and treatment outcomes. The prevalence of seroconversion after commencement of treat-to-target therapy is not well understood. We therefore set out to assess ACPA and RF status pre- and post-therapy in a large early arthritis cohort.

Methods. DMARD-naïve patients with RA according to the 1987 ACR criteria, with a disease duration of <12 months were enrolled. RF and ACPA levels were recorded prospectively. All received triple DMARD therapy adjusted according to disease activity.

Results. 368 patients were followed for a median of 272 weeks. Median disease duration at diagnosis was 20.4 weeks. 154 patients were seronegative for ACPA at recruitment and 10 (6.5%) of these seroconverted at some point. No patients seroconverted from negative to positive for both RF and ACPA. Among the ACPA seroconverters, 9 were positive for RF at baseline. Median time to seroconversion for ACPA was 29 months.

Discussion. The rate of persistent seroconversion for ACPA was low (2.6% of those who were negative at diagnosis) and only one patient who was double negative for ACPA and RF seroconverted to ACPA positivity during the study period. This suggests that the combination of ACPA and RF at baseline is a sensitive method for assessing sero-status and that repeat testing of ACPA is unnecessary.

O-11
THE UTILITY OF ESR, CRP AND PLATELETS IN THE DIAGNOSIS OF GCA: A SOUTH AUSTRALIAN STATEWIDE ANALYSIS

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Aim. To compare the utility of ESR, CRP and platelets for the diagnosis of GCA.

Method. Case note review of patients (n= 270; 68% female, mean age 72 years) with a temporal artery biopsy (TAB) performed at SA Pathology (2011-2014). The highest levels of ESR, CRP and platelets (within two weeks of diagnosis) were documented. Non-parametric Receiver Operating Characteristic (ROC) curve analysis was used to determine both the Area Under the Curve (AUC), a measure of overall diagnostic utility, as well as test cut-off values which maximised the product of sensitivity and specificity.

Results. GCA was clinically diagnosed in 139 (67%) patients, with 81 TAB positive (30%). AUC estimates for ESR, CRP and platelets were comparable (0.65 vs 0.69 vs 0.69, p=0.43). Estimated rounded optimum cut-off levels were confirmed at 50mm/h for ESR, and determined to be 20mg/dL for CRP and 300x10 ^{9} /L for platelets. Sensitivity for ESR and

CRP were similar at 65% and 67%, but highest for platelets at 71% (p=0.23, McNemar's test). Specificity estimates were 57% for ESR, 68% for CRP and 63% for platelets (p=0.075). When any of these 3 tests were considered positive, the sensitivity was 90% but specificity was reduced to 34%. These results were similar for both TAB positive and negative GCA subsets. There was only moderate agreement between the 3 tests (Kappa statistic 0.51).

Conclusion. The optimal cut-off points for GCA diagnosis was validated at 50mm/hr for ESR, and determined as 20mg/dL for CRP and 300x10 ⁹/L for platelets. These tests are moderate and equivalent stand-alone diagnostic tests for GCA. Despite the 3 tests have comparable diagnostic utility at a population level, there is only moderate agreement between the test results in individual patients. For patients with a negative TAB, clinical assessment remains a mainstay of diagnosis.

O-12
DAMAGE ACCRUAL IN SYSTEMIC LUPUS ERYTHEMATOSUS IS NOT RELATED TO SUSTAINED HYPOCOMPLEMENTEMIA

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Aim. Hypocomplementemia (HC) represents a significant clinical finding in Systemic Lupus Erythematosus (SLE) as it suggests complement activation by immune-complexes, which can initiate inflammation. As disease activity contributes to damage accrual in SLE patients, we investigated the role of HC as a predictor of subsequent organ damage.

Method. Longitudinal cohort study of 102 SLE patients with HC defined as a C3 and/or C4 levels below cut-off during median follow-up of 13.8 years (IQR 7.0, 23.1). Disease activity was scored by time averaged SLEDAI-2K without the serological components (cWAS), flares by SELENA-SLEDAI and damage accrual by SLICC-DI. Analysis included comparisons between normocomplementemic (NC) and hypocomplementemic (HC) patients, and multivariate logistic and Cox regression modelling determined the predictive value of HC on organ damage.

Results. HC occurred in 2/3 of patients overall and was more often due to low C3 (97%) than low C4 (54%). HC patients had a higher prevalence of anti-dsDNA Ab (72% vs 36%, p<0.01) and aPL (74% vs 40%, p<0.01), but HC concurred with anti-dsDNA presence in only 36% of cases. HC patients had higher maximum cSLEDAI scores, but the time adjusted cWAS scores (1.9 vs 1.2, p=0.9) and the frequency and risk of overall damage accrual (SDI>0, n=60) associated with HC was similar as for NC patients (OR 1.08, p>0.20).

Conclusion. Low complement levels occur in 2/3 of SLE patients but have negligible impact on time averaged disease activity and damage accrual in SLE. Discrepancies between low C3, low C4 and anti-dsDNA Ab occurrence indicate that in SLE alternative complement activation occurs frequently and requires further translational study.

O-13
EVIDENCE IN HUMAN SLE THAT GILZ IS A CRUCIAL CHECKPOINT REGULATOR OF TYPE I INTERFERON PATHWAYS

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Aims. Type 1 interferons (IFN) are central to the pathogenesis of SLE. Surprisingly, glucocorticoid (GC) treatment does not suppress IFN-stimulated gene (ISG) signatures. Glucocorticoid induced leucine zipper (GILZ) is a GC-induced anti-inflammatory protein which is under-expressed in SLE. However, the interactions of GILZ and IFN in SLE are unknown. To test the hypothesis that GILZ is a critical checkpoint for IFN pathways in SLE, failure of which contributes to GC insensitivity.

Methods. Human peripheral blood mononuclear cells (PBMCs) were treated with IFNα, GC and recombinant GILZ, and GILZ-overexpressing human microvascular endothelial cells (HMEC) were treated with IFNα. GILZ and ISG mRNA transcripts were measured via real-time PCR (qPCR). Public data sets were mined for supporting clinical data.

Results. IFNα potently induced ISG expression in HMEC and PBMC. GILZ overexpression in HMEC cells drastically constrained ISG expression following IFNα treatment. Correspondingly, in IFNα treated PBMCs, recombinant GILZ suppressed ISG expression. In parallel, IFNα treatment rapidly down regulated basal and GC-induced PBMC GILZ mRNA. Supporting this, analysis of microarray data (n=1756) showed that ISG signature-positive SLE patients had lower GILZ expression, despite more GC treatment, than patients lacking an ISG signature.

Conclusion. GILZ down regulates IFN actions on ISG expression, while IFNα down regulates GILZ and blunts GC induction of GILZ. This suggests a control loop in SLE whereby IFN expression constrains a GC-regulated pathway that would otherwise impede IFN actions. This may provide an explanation for the persistence of IFN signatures in GC-treated SLE and the high doses of GC often required. These data support the ongoing investigation of GILZ as a potential therapeutic target in SLE.

O-14
RAMAN SPECTRAL IMAGING OF BONE MARROW LESIONS IN KNEE OSTEOARTHRITIS: ALTERED BIOCHEMICAL COMPOSITION OF THE SUBCHONDRAL BONE MATRIX

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Aim. We have previously shown that the osteochondral degenerative changes in human osteoarthritis (OA) are most prominent in subchondral bone marrow lesion (BML) zones. The molecular basis for the distinctive pathology of BMLs is unknown. Thus, the study aim was to examine the biochemical composition of BMLs for human knee OA.

Method. Tibial plateaus (TP) collected from 24 knee OA arthroplasty patients (11-men, 13-women; aged 52-77 years) and from 8 non-OA control cadavers (5-men, 3-women; aged 44-80 years) were MRI scanned (PDFS and T1) to identify BMLs. Four groups, each n=8, were assessed: OA-noBML, OA-BML1 (PDFS detected in medial-TP), OA-BML2 (PDFS+T1 detected in medial-TP), control. For each TP, subchondral trabecular bone was sampled from the medial (BML zone/noBML) and lateral compartment for Raman spectroscopy analysis.

Result. Measures of mineralisation, the mineral-to-organic matrix ratios of phosphate/amide I, phosphate/proline and phosphate/amide III, were similar between OA-noBML and control tibial subchondral bone, for medial and lateral comparisons. In contrast, phosphate/amide I ratio was reduced in the medial BML zones, for both OA-BML1 (p=0.02) and OA-BML2 (p=0.004), compared to control. In addition, phosphate/proline ratio was lower for OA-BML1, compared to control (p=0.02). Within the OA-BML1 and OA-BML2 groups, phosphate/amide I (BML1:p<0.0001; BML2:p=0.009) and phosphate/amide III (BML1:p=0.006; BML2: p=0.0005) ratios were lower in the medial vs lateral compartment. There were no group or compartment differences for mineral crystallinity, type-B carbonatation, relative proteoglycan content, or hydroxyproline-to-proline ratio.

Conclusions. Raman spectral analysis of subchondral bone from knee OA patients without tibial BMLs, compared to non-OA controls, demonstrated a similar mineral-organic bone matrix composition. However, knee OA patients with a medial-tibial BML showed an altered Raman spectral bone signature, specific to BML tissue, characterised by reduced mineralisation in relation to the organic phase. The altered bone matrix quality of BMLs may have functional consequences, such as compromised osteochondral biomechanics.

O-15
ABERRANT SARCOPLASMIC EXPRESSION OF THE ALARMIN 'HIGH MOBILITY GROUP BOX PROTEIN 1' (HMGB1) IN PATIENTS WITH IDIOPATHIC INFLAMMATORY MYOPATHY

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Aims. Components of the innate immune system, such as HMGB1, may contribute to the initiation, perpetuation and resolution of the idiopathic inflammatory myopathies (IIMs). HMGB1 is a nuclear DNA-binding protein that can translocate to the cytoplasm and extracellular space, where it

exerts pro-inflammatory or pro-repair effects depending on its molecular state and the surrounding cytokine milieu. Given HMGB1 undergoes rapid, passive release from necrotic cells, we postulate a key role for this protein in the aetiopathogenesis of necrotising myopathy (NM). Herein, we evaluate sarcoplasmic HMGB1 expression in IIM and correlate it with clinical, serological and histological parameters.

Methods. Muscle samples were stained for HMGB1 using immunohistochemistry and independently graded by a muscle pathologist. Most clinical and demographic data were prospectively collected.

Results. Samples from 132 IIM patients, comprising NM (n = 59), dermatomyositis (DM, n = 17), polymyositis (PM, n = 19), inclusion body myositis (IBM, n = 22) and non-specific IIM (NSIIM, n = 15) were analysed, in addition to 18 controls. A minority (32/96, 33%) received corticosteroids prior to biopsy. Sarcoplasmic HMGB1 was significantly elevated in all IIM subtypes compared with controls. Levels correlated positively with creatine kinase (rs 0.31, p = 0.002) and negatively with cumulative prednisolone dose (rs -0.24, p = 0.03). Patients with NM and IBM had significantly increased sarcoplasmic HMGB1 compared to DM, PM and NSIIM.

Conclusions. Sarcoplasmic levels of HMGB1 are significantly elevated in NM and IBM compared with other IIM subtypes. The mechanisms underpinning aberrant sarcoplasmic expression in these subtypes are likely distinct and further immunohistochemical analyses of muscle immunoproteins will determine this. The negative association with cumulative prednisolone exposure supports earlier work demonstrating a reduction in tissue HMGB1 with treatment. Understanding the role of HMGB1 in the pathogenesis of these complex conditions may lead to novel diagnostic paradigms and therapeutic interventions.

O-16
THE EFFECT OF AN N-CADHERIN ANTAGONIST ON JOINT INFLAMMATION AND BONE LOSS IN A MURINE MODEL OF COLLAGEN ANTIBODY INDUCED ARTHRITIS (CAIA): PRELIMINARY STUDY

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Aims. The pathogenesis of rheumatoid arthritis (RA) involves various cells including fibroblast-like synoviocytes (FLS), that are potential targets in treatment development. FLS express the cell adhesion molecule N-cadherin, which promotes adhesion or induction of cell migration. Antagonists of N-cadherin could potentially treat chronic inflammatory joint diseases. CRS-066 is a small molecule (synthetic, non-peptide) N-cadherin inhibitor. We propose that CRS-066 treatment of collagen antibody-induced arthritis (CAIA) in mice will disrupt FLS cell adhesion and migration, thereby reducing hyperplasia and joint damage.

Method. Twenty female Balb/c mice were allocated to four groups; control (n=6), CAIA (n=6), CAIA+DMSO (n=4) and CAIA+CRS-066 (n=4). Treatment was applied topically every 12 hours from day 4-10 following disease induction. Clinical paw inflammation was scored daily. Bone volume (BV) and paw volume (PV; inflammation) was assessed in the front paws by ex-vivo micro-CT. Paw sections were stained with haematoxylin and eosin (H&E) or tartrate-resistant acid phosphatase (TRAP) then assessed for joint inflammation, cartilage and bone damage or osteoclast-like cells.

Results. On day 5, CAIA+CRS-066 mice had significantly lower paw scores compared to CAIA+DMSO mice ($p<0.05$) and remained lower compared to all diseased groups until day 9. PV was significantly greater in CAIA mice compared to control ($p<0.05$). There was no significant difference in BV and PV between the front paws of all disease +/- treatment groups at endpoint. Although not significant, CAIA+CRS-066 had lower scores for cellular infiltration, cartilage and bone degradation compared to CAIA mice and had reduced TRAP positive cell numbers compared to CAIA and CAIA+DMSO mice.

Conclusion. CRS-066 treatment significantly reduced clinical paw scores compared to disease alone during peak stages of the disease. CRS-066 reduced the number of pre/oestoclasts in the radiocarpal joint as indicated by TRAP staining, suggesting a role in modulating bone turnover.

O-17
URINARY B CELL-ACTIVATING FACTOR OF THE TUMOR NECROSIS FACTOR FAMILY (BAFF) IN SYSTEMIC LUPUS ERYTHEMATOSUS

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Aim. We examined the clinical relevance of urinary concentrations of B cell-activating factor of the tumor necrosis factor family (BAFF) in systemic lupus erythematosus (SLE).

Methods. We quantified urinary BAFF (uBAFF) by ELISA in 85 SLE, 28 primary Sjögren's syndrome (pSS), 40 IgA nephropathy (IgAN) patients and 36 healthy controls (HC). Urinary a proliferation-inducing ligand (APRIL) (uAPRIL) and monocyte chemoattractant protein 1 (uMCP-1) were also quantified. Overall and renal SLE disease activity were assessed using the SLE disease activity index 2000.

Results. uBAFF was detected in 12% (10/85) of SLE patients, but was undetectable in HC, IgAN and pSS subjects. uBAFF was detectable in 28% (5/18) of SLE patients with active nephritis vs 5/67 (7%) of those without ($p=0.02$), and uBAFF concentrations were significantly higher in active renal patients ($p=0.02$). In comparison, uAPRIL and uMCP-1 were detected in 32% (25/77) and 46% (22/48) of SLE patients, respectively. While no difference in proportion of samples with detectable uAPRIL was observed between SLE, HC and IgAN patients, both uAPRIL and uMCP-1 were detectable significantly in higher proportions of patients with active renal disease.

Conclusion. uBAFF was detectable in a small but a significant proportion of SLE patients but not in other groups tested, and was higher in SLE patients with active renal disease.

O-18
TIME-DEPENDENT RELATIONSHIPS BETWEEN BIOLOGICAL PARAMETERS AND DISEASE ACTIVITY IN SYSTEMIC LUPUS ERYTHEMATOSUS

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Aim. To investigate the relationship between disease activity and biomarker expression in a longitudinally-followed SLE cohort.

Methods. We measured 4 candidate protein biomarkers implicated in SLE (MIF, CCL2, CCL19, CXCL10) and 13 routinely collected serum and urine biological parameters, and assessed disease activity (SLEDAI-2k) on each clinic visit. We analysed these data, first focusing on the magnitude of expression levels of the 17 biological markers, then on the temporal dimension, to untangle their relationship to disease activity.

Results. Data from 843 visits in 110 patients (median age 47, 83% female, 49% Asian) were analysed, demonstrating highly heterogeneous time-dependent relationships between disease activity and biological markers. Unbiased magnitude-based hierarchical clustering of biomarker expression levels isolated a patient subset (n=9) with distinctively heterogeneous expression of the 17 biological parameters, compared to the other (n=101) more homogeneous patients. The smaller subgroup had significantly higher MIF, CCL2, CCL19 and CXCL10 levels, but the larger subgroup had stronger associations between biological parameters and SLEDAI-2k, based on leave-one-out cross-validated regression analysis. In this subgroup, when we constructed a time-dependent regression model, compared to the equivalent time-agnostic regression model, the biological parameters had significantly stronger predictive power for disease activity, suggesting a time-dependent relationship. To disentangle the effect of magnitude versus temporal correlation, we used dynamic time-warping analysis to align longitudinal clinical and laboratory profiles. This revealed a further subset (n=69) with significantly stronger associations between biological parameters and disease activity in the time-dependent regression model, despite no significant difference in simple magnitude. This subgroup had lower flare rates, disease activity and damage scores, suggesting this clustering is clinically meaningful.

Conclusions. These results suggest associations between biological parameters and disease activity in SLE may exist in a multi-dimensional and time-dependent pattern. This highlights the importance of longitudinal datasets and has significant implications for SLE biomarker study design.

O-19
TRAJECTORIES OF FEMOROTIBIAL CARTILAGE THICKNESS AMONG PERSONS WITH OR AT RISK OF KNEE OSTEOARTHRITIS: DEVELOPMENT OF A PREDICTION MODEL TO IDENTIFY PROGRESSORS

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Aims. The trajectory of structural progression is highly heterogeneous across people with knee osteoarthritis. We aimed to identify distinct trajectories of femorotibial cartilage thickness over 2 years and develop a prediction model to identify individuals experiencing progressive cartilage loss.

Methods. We analysed data from selected individuals from the Osteoarthritis Initiative (n = 1,014; Kellgren Lawrence grade 1 to 4). Latent class growth analysis was used to identify trajectories of medial femorotibial cartilage thickness (weight-bearing portion) assessed on MRI at baseline, 1 and 2 years. Baseline clinical and radiographic characteristics were compared between trajectory-based subgroups and backwards selection was used to develop the prediction model. Bootstrapping was used for internal validation and area under the Receiver Operating Characteristic curve (AUC) was used to assess model discriminant ability of the model. To examine the clinical relevance of the trajectories, we assessed their association with concurrent changes in knee pain and incidence of total knee replacement (TKR) over 4 years.

Results. The optimal model identified three trajectories which comprised: (i) stable (87.7% of the population, mean change -0.08mm, SD 0.19); (ii) moderate cartilage loss (10.0%, -0.75mm, SD 0.16) and (iii) substantial cartilage loss (2.3%, -1.38mm, SD 0.22). Higher WOMAC pain scores, family history of TKR, obesity, radiographic medial joint space narrowing ≥ 1 and pain duration less than 1 year were predictive of belonging to either the moderate or substantial cartilage loss trajectory (AUC 0.79, 95% CI 0.74, 0.84). The two progression trajectories combined ("progressors") were associated with concurrent pain progression (OR 1.99, 95% CI 1.34, 2.97) and incidence of TKR (OR 4.34, 1.62, 11.62).

Conclusions. A minority of individuals follow a trajectory of progressive cartilage loss, which was strongly associated with poorer clinical outcomes. The prediction model may help to select individuals who would potentially benefit from cartilage-targeted therapies.

O-20
THE COURSE AND CONTRIBUTORS TO BACK PAIN IN MIDDLE-AGED WOMEN OVER NINE YEARS: DATA FROM THE AUSTRALIAN LONGITUDINAL STUDY ON WOMEN'S HEALTH

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Aims. Back pain is the leading cause of disability worldwide. With minimal effective therapies and rising financial burden, identifying modifiable risk factors remains a key priority. Our objective was to determine the course and contributors to back pain in middle-aged women over a nine-year period.

Methods. The Australian Longitudinal Study on Women's Health is a cohort study of community-based, middle-aged women who completed questionnaires every three years between 2004 and 2013. 10,530 completed the survey in 2004 (mean age 55.5 years), 9,020 completed follow-up nine years later. 7,562 (72%) women provided back pain data in all four surveys. Self-reported data on back pain in the last 12 months and other socio-demographic factors were collected at all four surveys. 'Frequent back pain' was defined as back pain reported at ≥ 3 surveys.

Results. Back pain was common and persistent, with 48% having back pain in ≥ 3 out of four surveys, and 29% having back pain at every survey. Baseline obesity (RR 1.21, 95% CI 1.14 - 1.27), lack of vigorous physical activity (RR 1.21, 95% CI 1.13 - 1.30) and self-reported depression (RR 1.28, 95% CI 1.20 - 1.36), were independently associated with an increased risk of frequent back pain (all $p<0.001$). Overall, 22% of the risk of frequent back pain could be attributed to these factors, equating to one extra case of frequent back pain for every seven women with depression, for every 11 women who do not do vigorous physical activity, and for every 10 obese women, at baseline.

Conclusions. Obesity, depression and lack of vigorous physical activity are associated with higher risk of frequent back pain over the following nine years among women in their mid-50s. Targeting these risk factors may lessen the burden of back pain.

O-21
STANDARDISED MORTALITY RATES FOR SYSTEMIC LUPUS ERYTHEMATOSUS IN WESTERN AUSTRALIA FROM 1980 TO 2015

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Aim. Calculate the standardised mortality rates (SMR) for SLE patients in Western Australia (WA) from 1980 to 2015, overall and by age and gender.

Method. Utilising whole-population linked hospital admission, cancer registration and death data for WA from 1980 to 2015, we compared characteristics and calculated SMRs (95%CI) for patients with SLE (ICD-9-CM 695.4, 710.0, ICD-10-AM L93.0, M32.0) against controls (5:1) free of rheumatic disease after matching for age, gender, Aboriginality and year of first SLE event.

Results. SLE patients (n=2,868) and controls (n=12,785) recorded 1335 and 4400 deaths with crude mortality rates of 56.3/1,000 vs 37.1/1,000 person-years, respectively. SLE patients were approximately 10 years younger (71 vs 81 years) and 2.2-times more likely hospitalised at death ($p<0.001$). The age-adjusted SMR (per 1,000) for SLE patients was 4.4 (95%CI 3.0, 5.8), and higher in females 5.4 (95%CI 3.5, 7.4) than in males 3.4 (95%CI 1.5, 5.4). Five-year period SMRs were 8.6 (95%CI 5.0,

12.2) between 1990-1994, 9.3 (95%CI 4.4, 14.2) between 1995-1999, 7.6 (95%CI 3.1, 12.1) between 2000-2004, 4.5 (95%CI 0.2, 8.7) between 2005-2009, and 4.9 (95%CI 1.32, 8.5) between 2010-2015.

Conclusion. SLE patients in WA experienced a decline in SMRs over time, but remain at increased risk of premature mortality. Within the limitations of administrative linked data, SLE in WA associates with an average reduction in life span of 10 years.

O-22
USE OF ORAL COMPLEMENTARY MEDICINE IN INFLAMMATORY ARTHRITIS: DATA FROM THE AUSTRALIAN RHEUMATOLOGY ASSOCIATION DATABASE (ARAD)

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Aim. To describe the use of oral complementary medicine (CM) in people with inflammatory arthritis.

Methods. ARAD, an observational database, collects outcome data from people with rheumatoid arthritis (RA), ankylosing spondylitis (AS), psoriatic arthritis (PsA) and juvenile idiopathic arthritis (JIA). Participants complete semi-annual then annual questionnaires. CM use from baseline questionnaire for participants recruited between 2006 and 2016 was categorised into fatty acids (eg. fish oil, evening primrose oil), herbs (eg. ginger, turmeric) or supplements (eg. glucosamine, vitamins). Changes in CM use over time were also determined.

Results. 4,425 (43.4%) ARAD participants were taking CM at enrolment (RA: 1,324 (45.7%), AS: 261 (40.7%), PsA 307 (43.2%), JIA: 31 (17.7%)). Use was more prevalent in women (OR 1.37; 95%CI 1.25-1.59), those with tertiary education (OR 1.26; 95%CI 1.10-1.44), private health insurance (OR 1.30; 95%CI 0.1.21-1.52), drinking alcohol sometimes compared to never (OR 1.24; 95%CI 1.06-1.44), and less prevalent in current smokers (OR 0.75; 95%CI 0.62-0.91). Overall, 35% were taking fatty acids, 7% herbs and 19% supplements. The most common CMs were fish oils (1,489 (34%)) followed by glucosamine (605 (14%)), although both have declined in use over the last decade (fish oil 2006-2016: 31%-28%, p=0.85; glucosamine 20%-9%, p=<0.001). Over time, there has been increased use of supplements, particularly vitamin D (2006-2016: 1.6%-3.3%, p<0.001) and magnesium (2006-2016: 0.4%-2.7%, p=0.02), turmeric has also increased (2006-2016: 0%-1.2%, p<0.001), while the use of krill oil has declined (2012-2016: 3.9%-0.3%, p<0.001) and calcium has remained level (2006-2016: 3.0%-2.4%, p0.71).

Conclusion. Just under half of ARAD participants were taking CM at ARAD entry. Types of CM used by people with inflammatory arthritis appear to change over time. Further research could investigate what prompts use of these products.

O-23
PREDICTORS OF TOTAL HIP REPLACEMENT: DATA FROM THE TASMANIAN OLDER ADULT COHORT STUDY

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Aim. To describe predictors of total hip replacements in a community dwelling sample of older adults.

Methods. 886 subjects from the Tasmanian Older Adult Cohort (TASOAC) were analysed according to hip replacement status. Participants had a pelvis radiograph at baseline, from which CAM deformity was assessed. Dual emission X ray absorptiometry (DXA) images were used to calculate shape mode scores, using statistical shape modelling, and hip BMD at baseline. Participants had Magnetic Resonance Imaging (MRI) of their right hip after 2.6 and 5 years to assess hip structural changes and reported hip pain using the WOMAC (Western Ontario and McMaster Universities Osteoarthritis Index). THR (Total hip replacement) data were acquired from the National Joint Replacement Registry. Data were analysed using mixed-effect Poisson regression to assess risk of total hip replacement additional to WOMAC hip pain and radiographic hip OA.

Results. Of 886 subjects, 52 had a total hip replacement for osteoarthritis over 13 years. As expected, WOMAC hip pain and hip radiographic OA both predicted risk of THR. Additionally, both greater shape mode 2 scores (decreasing acetabular coverage) (IRR 1.42/ per SD; 95% CI 1.00-2.00), and lower shape mode 4 scores (non-spherical femoral head) predicted risk of THR (IRR 0.59/SD; 95% CI 0.41-0.87). Cam lesions (>60°) also increased risk of THR (IRR 2.75; 95% CI 1.36-5.53), as did BMD at the neck of femur with IRR 1.72/SD (95% CI 1.26-2.34). MRI structural lesions did increase risk but did not reach statistical significance perhaps due to the smaller sample size. Age, BMI and sex were not additional risk factors.

Conclusion. In addition to WOMAC hip pain and radiographic hip OA, measures of hip shape, CAM deformity and BMD independently predicted risk of THR. These independent factors can be used to develop better predictive models for THR.

O-24
LONG-TERM EFFECTS OF VITAMIN D SUPPLEMENTATION AND MAINTAINING VITAMIN D SUFFICIENCY ON KNEE OSTEOARTHRITIS OVER 5 YEARS

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Aim. To examine whether those maintaining sufficient serum vitamin D levels over 5 years had reduced knee symptoms compared with those who did not in patients with knee osteoarthritis (OA).

Methods. Participants with symptomatic knee OA and low 25 hydroxyvitamin D [25(OH)D] (12.5-60nmol/l) were randomly assigned to receive monthly treatment with oral vitamin D3 (50000IU; n=209) or an identical placebo (n=204) for 2 years. 172 participants from Hobart were followed up after 3 years (5 years from baseline) of the cessation of the treatment. Participants were classified as maintaining sufficient vitamin D group (25 (OH)D>50 nmol/l at month 3, 24 and 60, n=79), and not maintaining sufficient vitamin D group (25(OH)D≤50nmol/l). Knee symptoms were assessed at baseline, 3, 6, 12, 24 and 60 month using WOMAC scale.

Results. The level of 25(OH)D dropped in the vitamin D group (87.0nmol/l to 53.3nmol/l) and slightly increased (53.3nmol/l to 61.7nmol/l) in the placebo group 3 years after the cessation of the treatment. Knee pain increased in the treatment (81.8 to 91.7) and placebo (75.8 to 101.1) groups. 16.7% of the participants in vitamin D and 18.5% of the participants in placebo group underwent total knee replacement (TKR) surgery. There were no significant differences in WOMAC symptoms, TKR rates or change in symptoms between Vitamin D and placebo groups after 3 years of cessation of the supplementation. Participants who maintained adequate vitamin D levels over 5 years had significantly less WOMAC knee pain (β:-38.4,95%CI:-69.2,-7.7) and physical dysfunction (β:-98.5,95%CI:-193.8,-3.1) than participants with vitamin D deficiency over 5 years in multivariable analyses.

Conclusion. Knee OA patients maintaining sufficient serum vitamin D levels over long-term had more improvement in knee pain and physical function than those who did not maintain adequate vitamin D levels, suggesting a beneficial effect of maintaining sufficient serum vitamin D for knee OA.

ARA POSTER ABSTRACTS

P1
PEMBROLIZUMAB INDUCED LARGE JOINT INFLAMMATORY ARTHRITIS IN METASTATIC MELANOMA

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Aim. Despite the growing indications of immune checkpoint inhibitors to treat advanced stage cancers, true inflammatory arthritis is an infrequently reported immune-related adverse event. Arthralgia is commonly reported with prevalence ranging from 1 to 43%, with sparse clinical information regarding grade, diagnosis or management algorithms.

Case Report. We report a case of evolving large joint polyarticular inflammatory arthritis, limiting mobility, in a patient receiving monotherapy anti PD-1 agent, pembrolizumab, for metastatic melanoma after 10 months on therapy. At the onset of arthritis, PET/CT demonstrated complete tumour response and is durable 12 months later. This patient obtained good symptomatic control with cessation of pembrolizumab, three months of weaning prednisolone and opioid analgesia. This seronegative inflammatory arthritis was demonstrated by imaging, synovial fluid aspirate and synovial biopsy.

Discussion. A review of the limited number of case reports, most with combination anti-PD1 and anti CTLA-4 immunotherapy agents, have management that vary from intraarticular glucocorticoids to systemic glucocorticoids, escalating to steroid sparing agents and anti-tumour necrosis factor medications. There appears to be a dichotomy between treating teams who administered glucocorticoid therapy and those who avoided use. Additionally, the majority of patients who developed immune related inflammatory arthritis had either partial or complete tumour response, fuelling the conjecture that the onset of autoimmune toxicity usually indicates more durable response. Future research is required to formulate a validated treatment algorithm to aid both rheumatologists and oncologists in management of this often disabling rheumatological adverse event.

P2
SCREENING FOR INFECTION PRIOR TO COMMENCING BIOLOGIC THERAPY IN AN AUSTRALIAN RHEUMATOLOGY OUTPATIENT CLINIC

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Aim. A complication of treatment with biological agents is the reactivation of latent infections. Despite its significant clinical importance, there is paucity in the literature regarding the rates of infection screening in patients on biologic therapies and the variables that may affect this process. The aims of this study were to assess rates of screening and factors associated with adherence to screening prior to starting biological therapy within a large Australian tertiary hospital.

Methods. A retrospective analysis of all 109 patients on biologic agents that attended the St Vincent's Hospital rheumatology outpatient clinic in 2017 was performed. Baseline demographics, information regarding rheumatological diagnosis, and previous infection screening were collected. Screening tests of interest included Hepatitis B Surface Antigen (HBsAg), Hepatitis B surface antibody (HbsAb), Hepatitis B core antibody (HBcAb), Hepatitis C antibody (HCVAb), Human Immunodeficiency Virus (HIV), strongyloides serology, Quantiferon Gold and Chest x-ray (CXR).

Results. According to available documentation, screening rates within our population prior to the first medication prescription provided by the clinic were as follows: HBsAg (81.7%), HBsAb (76.2%), HBcAb (78.9%), HCVAb (80.7%), Quantiferon Gold (72.5%), CXR (63.3%), HIV (21.1%) and strongyloides (22.9%). A minority (49.5%) of patients had completed all screening tests for Hepatitis B, Hepatitis C, and tuberculosis. Patients born in a country other than Australia (OR 2.33, $p = 0.04$) and those not on a biological therapy prior to referral to the clinic (OR 8.00, $p < 0.01$) were more likely to have complete screening.

Conclusion. In this Australian tertiary hospital population, individual screening rates prior to first prescription of biologic therapy were relatively high for HBV, HCV and TB, while HIV and strongyloides infections were infrequently tested. Overseas born patients and patients not on a biologic agent prior to their referral to the clinic were more likely to receive screening.

P3
ATTITUDES OF RHEUMATOID ARTHRITIS PATIENTS TO METHOTREXATE

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Objective. To investigate the beliefs of patients with rheumatoid arthritis regarding methotrexate (MTX), and factors influencing their perspective, including sources of MTX information.

Methods. Current Australian Rheumatology Association database (ARAD) participants with rheumatoid arthritis (RA) who had completed an online questionnaire within 12 months (N=1010) were invited to participate in an on-line questionnaire (Survey Monkey) regarding their use of MTX, sources they consulted for MTX information, and perceptions of this information. Only responses from participants reporting current or previous MTX use were analysed. Beliefs about Medicine Questionnaire (BMQ), consisting of MTX-specific (necessity and concerns) and general medication (overuse and harm) scales, was used.

Results. The survey response rate was 804/1010 (80%). 742 RA participants reported current/previous MTX use (mean age 59 years, 76% female, disease duration 19 years, 75% rheumatoid factor positive). Rheumatologists (98%), GPs (55%), internet search engines (39%) and educational websites (38%) were the most frequent MTX information sources. Participants consulted multiple information sources (median 3, IQR 1-5). Patients who were younger, more highly-educated, and who had higher MTX-specific concerns and general medication BMQ scores, accessed more resources ($p<0.05$). MTX information was more likely to be perceived as positive when obtained from rheumatologists (93%), GPs (67%), and educational websites (56%), and negatively when obtained from relatives (62%), social media (60%), internet chat rooms (59%) and friends (52%). Positive information from rheumatologists ($p<0.001$) and educational websites ($p= 0.021$) were influential on favourable MTX-specific necessity and concerns BMQ scores.

Conclusions. Most RA patients consult a variety of sources for MTX information. However, the perception of this information varies widely among patients. Rheumatologists and educational websites, such as Arthritis Australia, are the most important information sources in terms of consultation frequency, positive information, and influence on the patient's perception of MTX

P4
DEVELOPMENT OF A MULTIDISCIPLINARY RESPONSE IN OPTIMISING THE USE OF METHOTREXATE IN RHEUMATOID ARTHRITIS

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Aims. To describe the components and goals of methotrexate (MTX) optimisation to frame a multidisciplinary engagement and implementation model.

Methods. During the design phase of a multidisciplinary program focused on the optimisation of MTX in rheumatoid arthritis (RA), NPS MedicineWise convened an expert working group with members representing health professionals and consumers across various settings. Membership of the group was drawn from the Australian Rheumatology Association (ARA), the Royal Australian College of General Practitioners (RACGP), key pharmacy opinion leaders and consumers from Arthritis Australia and the Consumers Health Forum. The expert working group participated in a number of co-design workshops. Co-design is the process of actively involving all stakeholders related to an issue in the development of a solution. These workshops explored MTX optimisation and sought to define the constituent 'components' of optimisation for the purposes of developing a multidisciplinary engagement (or implementation) model.

Results. The components of MTX optimisation were defined as: higher starting doses and rapid dose escalation; trialling of subcutaneous MTX; synergy with other DMARDs; adherence to medicines; folate supplementation; increasing health literacy; consistent consumer support from different health professionals (e.g. rheumatologists, pharmacists, general practitioners); multidisciplinary communication; and stigma reduction. As such, clinical, infrastructure, workflow and psychological components need be addressed to optimise MTX use. Definition of the components of methotrexate optimisation were then mapped to various roles to ascertain who is involved and/or responsible for each component (e.g. rheumatologists, GPs, pharmacists, consumers) to direct relevant information and resources to drive engagement across all health professionals and consumers to optimise MTX use.

Conclusion. A problem-centred approach, such as definition of the components of methotrexate optimisation (or other clinical issues), enables those developing engagement or implementation programs to consider the range of drivers that influence optimal medicines use.

P5
EARLY TREATMENT OF RHEUMATOID ARTHRITIS AND EFFECTS ON WORK AND QUALITY OF LIFE – LATE FOLLOW-UP OF PATIENTS FROM THE HUNTER HUMIRA AND ENDOTHELIAL FUNCTION IN EARLY RHEUMATOID ARTHRITIS TRIAL (HUNTER HEART)

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Aim. Research suggests that in rheumatoid arthritis there exists a 'window of opportunity' at which time early aggressive treatment leads to a more durable remission (1-4). We hope to demonstrate that patients given early Adalimumab compared with placebo in the Hunter HEART study (HHS) have better functional ability, work disability and quality of life.

Methods. A cross-sectional survey of 60 rheumatoid arthritis patients (ACPA positive) patients from the HHS (5) was conducted. The HHS was a randomized controlled trial comparing Adalimumab versus placebo in patients with early or established arthritis. Participants were invited to complete the Health Assessment Questionnaire (HAQ), Rheumatoid Arthritis Work Instability Scale (RA-WIS), Assessment of Quality of Life (AQOL) and a medication checklist.

Results. 60 patients were sent questionnaires with mean age 59. Mean duration of follow-up (post-recruitment into HHS trial) was 38 months (11- 41). Of 60 patients, 26 completed questionnaires were returned. Of these 26 patients, 14 were in the Adalimumab arm, 12 were in the placebo arm. 20 patients were in DAS28 remission, 2 patients were not in DAS28 remission and DAS28 was unavailable for 4. Of those 14 in the adalimumab arm, 6 remained on a biological DMARD. Of the 12 in the placebo arm, 6 remained on biological DMARDs. Groups were assigned according to initial treatment allocation and current treatment with bDMARD. We found those given early adalimumab (and not currently on bDMARD) who are still in remission (group 2) have lower average HAQ and WIS scores compared with those originally on placebo who are now on bDMARDs (group 3).

Conclusion. We demonstrated that patients who receive early adalimumab, specifically those still in bDMARD-free remission fare better than those with delay to commencement of bDMARDs. Although this is a small study, this supports the 'window of opportunity' hypothesis.

P6
REAL-WORLD EXPERIENCE WITH APREMILAST IN AN AUSTRALIAN COHORT OF PEOPLE WITH PSORIATIC ARTHRITIS: PROSPECTIVE FOLLOW-UP OF PARTICIPANTS IN THE AUSTRALIAN RHEUMATOLOGY ASSOCIATION DATABASE (ARAD)

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Aim. To describe Otezla (apremilast) use among people with psoriatic arthritis (PsA) in Australia.

Method. Patients (n=370) participating in the Patient Familiarisation Program (PFP) for Otezla conducted by Celgene were invited to take part in the Australian Rheumatology Association Database (ARAD). ARAD was established to determine the long-term health outcomes of people with inflammatory arthritis both on and off disease-modifying and biologic therapy. Participants complete a baseline questionnaire (demographic details, past medical history and medication history), then 6 monthly questionnaires to record changes in patient-reported health outcomes, adverse events and medication changes.

Results. Ninety-eight participants taking apremilast enrolled in ARAD from the PFP. Their mean age was 56.1 years, 55% female, mean disease duration was 11 years, 66% tertiary educated, 81% had private health insurance, 4% were current smokers. Mean baseline HAQ was 0.61 (range 0 to 3, higher scores indicate worse disability) and AQoL was 0.64 (range 0 to 1, higher scores indicate better quality of life). At 12-18 months 67% were continuing on treatment (93% at 6 months, 76% at 6-12 months). Of the 31 who had stopped taking Apremilast, the primary reasons were inefficacy (n=17, 57%) or side effects (n=10, 33%). Side effects were diarrhoea (28%), nausea/vomiting (19%) and headache (14%). Severe infections were self-reported by 21 participants (21%) most commonly eye/ear/nose/throat (n=6), chest/lung (n=4), or viral (n=4), 11 continued with treatment. Common concomitant DMARDs at the time of reporting infections were oral methotrexate (38%) or prednis(ol)one (33%).

Conclusion. Two thirds of this PsA cohort who started apremilast were continuing. Inefficacy or adverse events were the most common reasons among the one third of people who needed to stop. Self-reported serious infections occurred in 21% but over half continued with apremilast. The enrolment rate limits the generalisability of these data to all apremilast users in Australia.

P7
NIVOLUMAB INDUCED SEVERE SYNOVITIS IS CHARACTERISED BY A MARKED ABSENCE OF PD1+ INFILTRATING T CELLS

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Aim. Immunological-blockade of checkpoint inhibitors (CIs) for cancer treatment is known to be associated with immune-related adverse-events (irAEs) recapitulating features of autoimmunity. We investigated ST cellular infiltration and PD-1+ T-cell infiltration in a Nivolumab-treated small cell lung cancer (SCLC) patient.

Methods. Arthroscopic ST biopsies and matched synovial fluid (SF) and PBMCs were collected from a Nivolumab-treated DMARD-naïve SCLC patient with severe peripheral inflammatory polyarthritis (negative RF and ACPA; no axial or extra-articular irAE). 3 DMARD-naïve patients with

seropositive early RA (<12 months; fulfilling 2010-ACR/EULAR criteria) were used as comparators. IHC was performed on ST stained for H&E, CD3, CD45RO, CD55 and CD68 and semi-quantitatively scored. Flow cytometry for Zombie UV® (BioLegend), CD45RO, PD1, CD3, ICOS, CD8, CD4 CD20 (all BD) was performed on ST, SF and PBMCs.

Results. IHC semi-quantitative scoring demonstrated comparable macrophage, B cell, T cell and memory T cell infiltration in IC-irAE compared with RA. TNFα staining was markedly elevated in CI-irAE compared to RA (CI-irAE-TNFα; 4, RA-TNFα; 2). Despite comparable CD4+ T cell frequency (CI-irAE: ST; 57.8, SF; 64.7, PBMCs; 38.2, RA: ST; 45.9±15.3, SF; 49.5±11.2, PBMCs; 62.2±13.8), flow cytometry revealed a distinct absence of PD-1+ ICOS+ T cells in IC-irAE SCLC (CI-irAE: ST; 0.06, SF; 0.01, PBMCs; 0.00) compared to RA (RA: ST mean and SEM; 22.13±3.63: SF; 45.95±1.85: PBMCs; 0.41±0.13: n=3).

Conclusions. We provide the first report on ST cellular infiltrates in irAE synovitis. While ST infiltration in CI-irAE SCLC recapitulates many features of RA histopathology, PD-1 expression principally distinguishes RA from irAE ST T-cell infiltration with a striking absence of PD-1+ T-cells in irAE synovitis. Further research is needed to fully understand the nature of reduced PD-1 in this setting and the source of elevated TNFα, which could shed light on the pathogenesis of CI-irAE and guide CI-irAE management.

P8
METHOTREXATE FOR PSORIATIC ARTHRITIS

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Aim. To assess the efficacy and safety of methotrexate for psoriatic arthritis.

Method. A protocol for this review was published in the Cochrane Database for Systematic Reviews in 2017. We searched MEDLINE, EMBASE, The Cochrane Library and Pubmed for relevant studies. We included randomised controlled trials in adults with psoriatic arthritis that compared methotrexate to either placebo, or another disease modifying anti-rheumatic drug. Major outcomes included disease response (ACR50, PsARC), function, health-related quality of life, disease activity, radiographic progression, serious adverse events and withdrawals due to adverse events. Minor outcomes included disease response (ACR20), enthesitis, dactylitis, pain, fatigue, skin disease, total adverse events, patient and physician global assessments of disease activity, swollen and tender joint counts. All relevant steps were performed in duplicate.

Results. In total, 6668 records were identified by database searching. After removing duplicates, 4003 records were screened, and 48 were reviewed in full-text. Eight studies were included in the final review. The risk of bias was variable, but was generally high for all but one study. Five studies had a placebo comparator, and three studies had a DMARD comparator. The comparator drugs included leflunomide, sulfasalazine and gold. Not all studies reported all outcomes. There was modest quality evidence that methotrexate is not superior to placebo in terms of disease activity or response, but may improve function more than placebo. The rate of adverse events was similar to placebo. Data comparing methotrexate with other DMARDs came from very low quality studies, except for leflunomide. There is low quality evidence that methotrexate may have similar outcomes to leflunomide in terms of disease response, function and adverse events.

Conclusions. There is little evidence that methorexate is superior to placebo for psoriatic arthritis, but it may be as effective as leflunomide. Methotrexate is generally well tolerated in this population.

P9
ASSOCIATION OF HIGH BMI AND FAILURE TO ACHIEVE MINIMAL DISEASE ACTIVITY IN AUSTRALIAN PSORIATIC ARTHRITIS PATIENTS

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Aims. There is data suggesting an increased risk of developing psoriatic arthritis in overweight patients with psoriasis, and poorer response to arthritis therapy. The aim of this study is to investigate the association between body mass index (BMI) and components of the minimal disease activity (MDA) clinical composite score for PsA.

Methods. Participants were sourced from tertiary rheumatology clinics of the Southern Adelaide Local Health Network (SALHN), Adelaide, South Australia. Relevant clinical outcomes were measured to determine MDA scores. MDA is defined as meeting 5 of the 7 following criteria: tender joint count < =1; swollen joint count < =1; Psoriasis Activity and Severity Index (PASI) < =1 or psoriasis body surface area < =3%; patient pain visual analogue score (VAS) < =15; patient global disease activity VAS < =20; health assessment questionnaire (HAQ)< =0.5 and Leeds Enthesitis Index (LEI) < =1. Each of these was converted to a binary variable to indicate if the criteria were achieved or not. Height and weight were measured in order to determine BMI which was classified into normal (BMI<=24.9 kg/m2) or overweight (BMI>=25kg/m2). Logistic and linear regression analyses were undertaken to determine the association of each PsA clinical measure and BMI.

Results. Overall there were 93 (72.7%) participants who provided information to calculate BMI. Of these participants, 45.2% were male and 76.3% were classified as overweight or obese (BMI>=25kg/m2). Overall, just over half achieved MDA (53.3%) and 35% were on biologics. Being overweight was associated with not achieving MDA (OR 2.99 p=0.04) and with higher scores across all MDA components.

Conclusion. Higher BMI may have a significant impact on the ability to achieve MDA in those with PsA and should be addressed as an independent aspect of management of this disease.

P10
TOFACITINIB IMPROVES COMPOSITE ENDPOINT MEASURES OF DISEASE IN PATIENTS WITH PSORIATIC ARTHRITIS

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Aim. To examine the effects of tofacitinib, an oral Janus kinase inhibitor for the treatment of psoriatic arthritis (PsA), on composite endpoints in patients with PsA.

Method. In two Phase (P)3 studies, patients had active PsA and inadequate response (IR) to ≥1 csDMARD and were TNFi-naïve (OPAL Broaden [N=422; 12 months; NCT01877668]), or IR to ≥1 TNFi (OPAL Beyond [N=394; 6 months; NCT01882439]). Patients were randomised to tofacitinib 5 mg BID, tofacitinib 10 mg BID, placebo (advancing to tofacitinib 5 or 10 mg BID at Month [M]3) or adalimumab 40 mg subcutaneous injection Q2W (OPAL Broaden only), with a single, stable csDMARD. Composite endpoints assessed: Psoriatic Arthritis Disease Activity Score (PASDAS), Disease Activity Score using 28 joints with C-reactive protein (DAS28-3[CRP]), Disease Activity Index for Reactive Arthritis/Psoriatic Arthritis (DAREA/DAPSA) and Composite Psoriatic Disease Activity Index (CPDAI) score.

Result. Mean baseline values were generally similar across treatment arms and studies (OPAL Broaden/Beyond: PASDAS, 5.92–6.03/5.97–6.43; DAS28-3 [CRP], 4.38–4.56/4.40–4.67; DAREA/DAPSA, 38.52–45.55/42.64–51.54; CPDAI, 9.7–10.0/9.6–10.7). Both tofacitinib doses improved composite endpoints vs placebo at M3 in both studies. Effect size among composite endpoints (based on patients with available data for all endpoints) was highest for PASDAS and typically lowest for DAREA/DAPSA; this rank order of effect size was similar across treatment arms and studies. At M3 in OPAL Broaden/Beyond, respectively, effect sizes in tofacitinib-treated patients ranged from 0.90/0.81 (both DAREA/DAPSA, 5 mg BID) to

2.40/1.84 (both PASDAS, 10 mg BID). Standardised response means generally followed the same pattern as effect size across studies and tofacitinib doses.

Conclusions. In two P3 studies, tofacitinib 5 and 10 mg BID improved composite endpoint scores vs placebo over 3 months in patients with PsA. Effect sizes and standardised response means were highest for PsA-specific composite measures and were consistent across studies.

P11
SAFETY AND EFFICACY OF TOFACITINIB, AN ORAL JANUS KINASE INHIBITOR, UP TO 36 MONTHS IN PATIENTS WITH ACTIVE PSORIATIC ARTHRITIS: DATA FROM THE THIRD INTERIM ANALYSIS OF OPAL BALANCE, AN OPEN-LABEL, LONG-TERM EXTENSION STUDY

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Aim. Tofacitinib is an oral Janus kinase inhibitor for the treatment of psoriatic arthritis (PsA). We report tofacitinib safety, tolerability and efficacy in active PsA patients from an open-label extension (LTE) study (OPAL Balance; NCT01976364; November 2017 data-cut; database not locked).

Method. Eligible patients from 2 Phase (P)3 tofacitinib PsA studies (OPAL Broaden; OPAL Beyond) entered a 3-year LTE. Patients received tofacitinib 5 mg BID to Month (M)1, after which dose adjustments between 5 and 10 mg BID were permitted to improve efficacy, or for safety reasons. Patients receiving a csDMARD at P3 study entry continued the same csDMARD in the LTE. Primary endpoints: incidence and severity of adverse events (AEs) through M36; change from baseline (Δ) in laboratory values. Efficacy was evaluated through M30 (when N>50).

Result. 686 patients were treated in OPAL Balance; 468 (68.2%) remained in the study at data cut-off. Mean (range) LTE tofacitinib exposure was 614 (1–1032) days. To M36, 2189 AEs were reported in 546 patients (79.6%); 95 (13.8%) had serious AEs; 59 (8.6%) discontinued due to AEs. Serious infections occurred in 12 patients (1.7%), herpes zoster in 20 (2.9%), major adverse cardiovascular events in 5 (0.7%), malignancies in 24 (3.5%; including 12 NMSC) and uveitis in 2 (0.3%). No gastrointestinal perforations or inflammatory bowel disease were reported. There were 5 deaths, all unrelated to study drug (investigator-determined). ALT ≥3x ULN occurred in 27 patients (4.0%); AST ≥3x ULN in 15 (2.2%). Eight patients (1.2%) discontinued (protocol-mandated) due to laboratory changes. ACR responses, ΔHAQ-DI, PASI75 response, ΔLEI, ΔDSS and ΔPain were maintained through M30.

Conclusions. Over 36 months in the LTE, the safety profile of tofacitinib in active PsA patients was generally similar to that of P3 studies. No new safety risks were identified. Efficacy was maintained over time across various PsA disease domains.

P12
SECUKINUMAB DEMONSTRATES CONSISTENT SAFETY OVER LONG-TERM EXPOSURE IN PATIENTS WITH PSORIATIC ARTHRITIS AND MODERATE TO SEVERE PLAQUE PSORIASIS: UPDATED POOLED SAFETY ANALYSES

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Aims. Pooled safety data from secukinumab psoriasis (PSO) and the psoriatic arthritis (PsA) clinical trial programs after about 1 year of exposure have been reported previously. Here, we report updated longer-term safety data of secukinumab exposure from PSO and PsA studies.

Methods. The PSO data pool consisted of 9 Phase III studies in moderate-to-severe plaque PSO and PsA pool consisted of 3 Phase III studies in active PsA. Secukinumab doses differed in the studies and included intravenous (up to 10 mg/kg) or subcutaneous (s.c.) 75–300 mg loading, followed by s.c. maintenance dosing (300, 150 or 75 mg). Placebo patients were re-randomized to secukinumab at 12-24 weeks depending on study design. Exposure adjusted incident rates (EAIR) were used to adjust for differences in treatment exposure and analyses included all patients who received ≥1 dose of secukinumab.

Results. A total of 5181 and 1380 patients from PSO and PsA studies representing an exposure of 10416.9 and 3866.9 patient years, respectively, were included in this pooled safety analysis. In both PsO and PsA, the most frequently reported adverse events (AEs) with secukinumab were nasopharyngitis, headache, non-serious infections of the upper respiratory tract and arthralgia. The EAIRs of AEs of special interest with secukinumab including serious infections, Candida infections, inflammatory bowel disease, and major adverse cardiac events were similar in both PSO and PsA indications, and comparable to those reported previously. No cases of tuberculosis were reported.

Conclusion. Secukinumab demonstrated a favorable safety profile during long term treatment (up to 14283.8 patient-years of exposure) in patients with moderate-to-severe plaque PSO or PsA consistent with previous reports. Safety was comparable across psoriasis and PsA patients supporting long-term use in these chronic conditions.

P13
ILEO-COLONOSCOPIC EVALUATION OF ANKYLOSING SPONDYLITIS PATIENTS- STUDY FROM A DEVELOPING COUNTRY

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Aim. To study the colon and terminal ileum in Ankylosing Spondylitis (AS) patients.

Method. A total, 60 patients and 20 lower gut symptom-free controls were enrolled from July 2011 to Jun 2012 in BSMMU, Dhaka. The colon and terminal ileum were evaluated. Four biopsies had taken from predefined sites. Including clinical characteristics, number, distribution and macroscopic grading of lesions were recorded. The Cuvelier et al. grading system was followed for microscopic evaluation. Eosinophil infiltration was counted in all sites. Associations of parameters were analyzed using Chi-square and Fisher's exact test.

Result. Failed to approach terminal ileum in 4 patients. In patients and controls, macroscopic lesions were in 17/60 (11 in rectum) and 1/20 respectively. Frequency of microscopic lesions in ascending colon, sigmoid colon and rectum were 85, 75 and 83.3 (%) and in controls 65, 45 and 40 (%) respectively. Grade-1 microscopic lesions in colon sites were 66.7, 66.3 and 66.7 (%) respectively but in terminal ileum 58.9% (total 56 patients). In terminal ileum, macroscopic and microscopic lesions in patients and controls, were 21/56, 43/56 and 1/20, 9/20 respectively. Macroscopic grade 2 change was significant in AS group (p=0.03). None of gut lesions was diagnostic of tuberculosis or crohn's disease. In patients and controls eosinophil count was 18.5 ± 21.5 vs 11.7 ± 9.9 in ascending colon, 11.4 ± 12.5 vs 6.6 ± 4.6 in sigmoid colon, 5.7 ± 6.8 vs 4.8 ± 5.9 in rectum and 15.6 ± 19.6 vs 8.8 ± 8.0 in terminal ileum. No significant association was observed with AS disease activity (BASDAI), anemia and HLA-B27.

Conclusions. The macroscopic, microscopic lesions and eosinophil infiltrations were frequent in colon and terminal ileum. None of the lesions were associated with AS disease activity. Without specific symptoms evaluation of terminal ileum may not be useful in AS patients.

P14
SPECTRUM OF CHIKUNGUNYA FEVER EPIDEMIC IN CASES OF ANKYLOSING SPONDYLITIS – AN OBSERVATIONAL STUDY FROM A TERTIARY REFERRAL CENTRE IN CENTRAL INDIA

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Aim. To study the clinical manifestations of Chikungunya fever in cases of Ankylosing spondylitis(AS) presenting to our referral setup during the three months of epidemic presenting from July to September 2017.

Method. Previously diagnosed cases of AS(n=32) who were on treatment, came with complaints of acute fever(<7 days) and joints pain. They were assessed for disease severity, clinical features, laboratory parameters and chikungunya antibodies.Descriptive and inferential statistics were used in this study. For comparing the mean before and after chikungunya, paired 't' test was applied. P-value< 0.05 was taken as statistically significant.

Result. 26 patients(m:22,f:4)had new onset knee joint pain, 30 had ankle joint pain(m:24,f:6), 28 patients had Backache(m:22,f:6), and small joints involvement were seen in 24 patients(m:18,f:6). 21 patients complaint of rash(m:17,f:4) at the onset of fever. Eye manifestations in the form of uveitis recurrence in 2 patients who were on Etanercept. Neurological symptoms as tingling and numbness over extremities in 5 patients, four had a headache and 2 had vestibular symptoms. 5 patients complained of Oral ulcers and 3 had Temporomandibular joint pain. None had any organ failure. Significant leukocytosis was observed in all patients(Normal value 4500-11000WBC/ micL) after Chikungunya (4776.47 ±2530.98WBC/ micL,P<0.05). Rise in the mean ESR after chikungunya was significant(49.75 ± 24.50mm/Hr, P<0.05). CRP was also high(59.70 ± 32.92,P<0.05) irrespective of those who were on Biologic therapy(n=17,-Adalimumab, Etanercept and Infliximab). 15 (46.9%) patients had IgM chikungunya positive while in negative patients RT-PCR was positive in 9 (52.9%), negative in 3 (17.6%)and was not done in 5 (29.4%) patients.

Conclusion. Chikungunya is a multi-system disease affecting both the genders equally.Severe pain causing disability and dependence on others for personal care were main complaints.No differences in clinical manifestations were noted in patients who were receiving biologics from those who were not. No mortality was reported in our study.

P15
CHARACTERISTIC COMPARISON OF PEDIATRIC AND ADULT ONSET REFRACTORY SPONDYLOARTHRITIS PATIENTS ATTENDING A RHEUMATOLOGY CLINIC

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Aim. To compare the clinical and demographic characteristics of pediatric-onset refractory spondyloarthritis (POSpA) (<18 years) with a group of adult-onset (≥18 years) refractory spondyloarthritis (AOSpA) patients.

Method. In this prospective, observational, single-centre cohort with 215 SpA patients (refractory to two NSAIDs and/or DMARDs) were enrolled following ASAS classification criteria from a rheumatology clinic in Bangladesh. Patients were divided into two groups; POSpA and AOSpA group. Comparisons of characteristics were analyzed using independent sample t-test and chi-square test.

Result. Among 215 patients, 57 (male 53, female 4) was presented with the onset of disease before 18 years (26.52%). Mean age of POSpA and AOSpA was 27.68±9.5 and 40.28±10 years respectively. The frequency of axial SpA, peripheral SpA and Psoriatic arthritis patients in POSpA and AOSpA group was 49 (86%) vs 129 (81.6%), 3 (5.2%) vs 12 (7.6%) and 5 (8.8%) vs 17 (10.8%) respectively. Uveitis was 15 (26.3%) in POSpA and 29 (18.4%) in AOSpA group. HLA-B27 was done in 20 (positive 19, 95%) and 61 (positive 55, 90.16%) subjects of POSpA and AOSpA group respectively. The clinical and demographic characteristics significantly associated with POSpA were male gender (p=0.001), disease duration in months (p<0.001), Patient Global Assessment (p=0.03), Ankylosyng Spondylitis Disease Activity Score (ASDAS)-CRP (p=0.028), ASDAS-ESR (p=0.016), Hb% (p=0.04) serum creatinine (p=0.01) and Bath Ankylosying Spondylitis Functional Index (BASFI) (p=0.018). Body mass index (BMI) (p<0.001), hip involvement (p=0.003), sacroiliitis grade 4 (p=0.06). Bath Ankylosying Spondylitis Disease Aactivity Index (BASDAI) (P=0.09), modified Stoke Ankylosying Spondylitis Spinal Score (mSASSS) (p=0.02), and ESR (p=0.02) were significantly higher in AOSpA.

Conclusions. Male gender, uveitis, HLA-B27, disease duration and ASDAS disease activity score were higher in POSpA patients. In AOSpA group, ESR, BMI, sacroiliitis grade 4, hip involvement, BASDAI and mSASSS score were higher.

P16
OBESITY AND DISEASE ACTIVITY IN PSORIATIC ARTHRITIS: PRELIMINARY DATA FROM A PROSPECTIVE PSORIATIC ARTHRITIS COHORT STUDY

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Aim. Obesity is common in patients with psoriatic arthritis (PsA). Adipokines produced by adipose tissue, particularly central adiposity, may contribute to chronic inflammation. The aim of this study is to assess the association between obesity and disease activity in psoriatic arthritis.

Method. Participants with PsA were recruited to an observational cohort study. Clinical examination and collection of patient-reported outcomes occurs 6 monthly. Data from baseline visits was used for this analysis. High waist circumference reflecting central adiposity was defined as males≥94cm, females≥80cm. Obesity defined as BMI≥30kg/m^2. Disease activity was measured using 66/68 swollen/tender joint count (SJC/TJC) for arthritis, psoriasis area and severity index (PASI) for skin. Patient-reported pain and global disease activity were measured using visual analogue scale (VAS 0-100). Correlation between waist circumference, BMI and disease activity measured was assessed using Pearson's correlation coefficients. P values ≤0.05 were considered statistically significant. All analyses performed using SPSS version 24.

Result. There were 20 participants, mean age 53 (SD 16) years ranging from 27-77 years, 8 (40%) male, disease duration mean 10 (11) years. Mean BMI 27.9 (7.4) kg/m^2 and 5 (25%) were classified as obese, while 50% had high waist circumference. Mean 68 TJC was 3(3), and 66 SJC mean 3(4), mean PASI 4.1 (7.6). Dactylitis was present in 5 (25%) and enthesitis in 7 (35%). BMI demonstrated moderate positive correlation with tender joint count (r=0.55, p=0.01) but was not significantly correlated with swollen joint count, PASI, patient global assessment or pain. Waist circumference was strongly positively correlated with tender joint count (r=0.62, p=0.003) and moderately correlated with swollen joint count (r=0.55, p=0.01). There was no significant correlation between waist circumference and PASI, patient global assessment or pain.

Conclusions. Higher BMI and waist circumference were both associated with higher joint counts but not with skin or patient-reported disease activity.

P17
PATIENTS' PERSPECTIVES AND EXPERIENCE OF PSORIASIS AND PSORIATIC ARTHRITIS: A SYSTEMATIC REVIEW AND THEMATIC SYNTHESIS OF QUALITATIVE STUDIES

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Aim. To describe the perspectives and experiences of patients with psoriasis and psoriatic arthritis.

Method. Databases (MEDLINE, Embase, PsycINFO, CINAHL) were searched to October 2016. Thematic synthesis was used to analyse the findings.

Result. From 46 studies (n=37 psoriasis and n=9 psoriatic arthritis) involving 1290 adult patients with psoriasis (n = 1105) and psoriatic arthritis (n = 185) we identified six themes (with subthemes): suffering uncontrollable and ongoing upheaval (dictating life choices and course, disrupting role functioning, limited by debilitating symptoms, unstoppable and far reaching fatigue); weighed down by mental load (struggling with unrecognised distress, anxiety provoked by the volatility and constancy of symptoms, depleting motivation and pleasure); harbouring shame and judgement (marked as unhygienic and contagious, rejected and isolated, resenting own appearance, pain and embarrassment in intimacy); demoralised by inadequacies and burden of therapy (disappointed by unmet expectations of treatment benefit, daily drudgery, deterred by unpalatable or inconvenient treatments, disempowered by lack of personalised care, fearing long term side effects); gaining control (making sense of the condition, shutting the disease out, accepting a new health status, attuning to the body); and making confident treatment decisions (trading off perceptible benefits against safety and convenience, relying on family input, reassured by clinician acknowledgement of fears, seeking empowering relationships with clinicians).

Conclusions. Patients with psoriasis and psoriatic arthritis contend with profound disruption in their functioning, roles and life course; fear deterioration of their health; and have unmet expectations about their treatment and care. Patients with psoriasis feel marked by their disease, stigmatised and rejected by others while patients with psoriatic arthritis experience social withdrawal and depleted motivation due to fatigue, joint impairment and pain. Establishing therapeutic relationships, addressing treatment expectations, and supporting psychosocial needs may help to improve satisfaction and outcomes in patients with psoriasis and psoriatic arthritis.

P18
ANKYLOSING SPONDYLITIS PATIENTS PRESENTING TO RHEUMATOLOGY IN THE FIRST 4 MONTHS AT THE NEW PUBLIC SUNSHINE COAST UNIVERSITY HOSPITAL: A REVIEW OF DISEASE SEVERITY RATES VERSUS RADIOLOGICAL INVOLVEMENT

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Aim. Ankylosing spondylitis (AS) is the most frequent and severe subtype of spondyloarthritis (SpA). Assessment of Spondyloarthropathitis International Society (ASAS) classifies patients into radiographic axial SpA (r-axSpA) or nonradiographic axial SpA (nr-axSpA), depending on the presence/absence of SIJ x-ray changes according to the modified new york criteria (mNY). Studies show these subgroups are clinically comparable with similar levels of disease severity. Since public rheumatology began at The Sunshine Coast University Hospital (SCUH) in September 2017, initial high rates of nr-axSpA have occurred. Clinical, laboratory and imaging data were compared between axSpA subgroups, and correlated with disease severity indices.

Methods. A retrospective review on 19 AS patients was conducted between September to December 2017 at SCUH. The mNY criteria was used to confirm r-axSpA diagnoses. Patient demographics, clinical characteristics, laboratory features, the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and Bath Ankylosing Spondylitis Metrology index were analysed.

Results. 19 patients with AS were evaluated. 63% were male, 37% were female. Age range was 18-68 years. Overall incidence of r-axSpA was 53% and nr-axSpA 47%. 90% of r-axSpA and 100% of nr-axSpA patients had BASDAI scores ≥4. Average ESR in the r-axSpA group was 20.4 versus 13 for nr-axSpAs. Average BASDAI was 6.1 for nr-axSpAs vs 5.61 for r-axSpAs. Extra articular manifestations (EAMs) occurred in 60% in r-axSpAs versus 56% in nr-axSpAs.

Conclusions. Incidence of r-axSpA and nr-axSpA subtypes are comparable, with higher BASDAIs in nr-axSpA patients. Overall rates of Current AS PBS guidelines specify a raised ESR/CRP to qualify patients for biological treatments. Our early patient experience shows ~50% of AS patients are automatically excluded from government funded biologics as due to the absence of radiographic disease. These nr-axSpA patients are just as compromised by the burden of disease, suggesting their future risk of axial disease progression could be greater.

P19
THE NEUTROPHIL-LYMPHOCYTE RATIO IN NEWLY DIAGNOSED RHEUMATOID ARTHRITIS AND ITS ABILITY TO PREDICT TREATMENT FAILURE

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Aim. To assess whether the neutrophil-lymphocyte ratio (NLR) can predict those who require disease modifying therapy escalation and hence progression in rheumatoid arthritis (RA).

Methods. Patients with newly diagnosed RA were recruited from the Early Arthritis Clinic at the Royal Adelaide Hospital. Those who were on glucocorticoids at the time of review were excluded. All patients were commenced on methotrexate, sulphasalazine and hydroxychloroquine and were reviewed at regular intervals, and DMARD therapy was adjusted according to a set algorithm. The NLR, platelet-lymphocyte ratio (PLR) and other markers of disease activity such as the ESR, CRP and DAS28 were collected as well as current therapy. The primary outcome measure was failure of triple DMARD therapy.

Results. Two-hundred and twenty-two patients met inclusion criteria. The mean age was 54.2±15.4 years with a mean duration of polyarthritis of 22.3±25.0 weeks prior to their first review. Forty-five (20%) of patients had failed triple therapy by one year. The mean NLR was significantly higher in those who failed triple therapy when compared to those that did not (3.7±2.8 vs 2.9±1.5; p=0.02), however, the PLR was not significantly different (184.1±78.6 vs 171.4±84.5; p=0.41). The NLR was an independent predictor of treatment failure (OR 2.65, CI 1.23-5.72, p=0.01) whilst the PLR, ESR, CRP and DAS-28ESR were not (p-values 0.41, 0.13, 0.17 and 0.28 respectively).

Conclusion. The NLR is significantly increased in those with treatment failure in RA and outperforms more conventional markers of disease activity. The NLR may be a cheap, objective and reproducible prognostic marker, however, further prospective studies are required to identify the role of the NLR in RA disease management algorithms.

P20
INCREASED SUN EXPOSURE OVER THE LIFE-COURSE IS ASSOCIATED WITH A REDUCED RISK OF JUVENILE IDIOPATHIC ARTHRITIS

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Aim. Cutaneous sun exposure is an important determinant of circulating vitamin D. Both sun exposure and vitamin D have been inversely associated with risk of autoimmune disease, including multiple sclerosis and rheumatoid arthritis. In children with juvenile idiopathic arthritis (JIA), low circulating vitamin D is reportedly common, but disease-related behavioural changes may have influenced sun exposure behaviours (reverse causation). We aimed to determine whether sun exposure across the life-course prior to diagnosis is associated with JIA.

Methods. Using validated questionnaires, we retrospectively measured sun exposure for 202 Caucasian JIA case-control pairs born in Victoria Australia, matched for year of birth and time of recruitment. Measures included maternal sun exposure at 12 weeks of pregnancy, and child sun exposure across the life-course pre-diagnosis. We converted exposure to UVR dose using location-specific UVR data. We looked for case-control sun/UVR exposure differences at various ages, and cumulatively, using logistic regression, adjusting for potential confounders.

Results. Higher cumulative pre-diagnosis UVR exposure was associated with reduced risk of JIA, with a clear dose response relationship (trend p=0.04). UVR exposure at 12 weeks of pregnancy was similarly inversely associated with JIA (dose response trend p=0.011). Associations were

robust to sensitivity analyses for pre-diagnosis behavioural changes, disease duration, and knowledge of the hypothesis.

Conclusions. Increased UVR across the pre-diagnosis life-course is associated with reduced risk of JIA in our setting. This suggests lower circulating vitamin D in JIA may be causative, but prospective studies that directly measure pre-disease vitamin D are required to confirm this.

P21
MAST CELL ACTIVATION IN RHEUMATOID ARTHRITIS

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Aim. Mast cells have recognised roles in inflammation and allergy, and show increased activity in rheumatoid arthritis (RA) potentially contributing to joint damage. Currently there is no well-accepted biomarker for monitoring mast cell activity in vivo although the prostaglandin D2 metabolite, tetranor-PGDM (t-PGDM), shows promise. We aimed to investigate the longitudinal relation of t-PGDM urinary excretion with patient and physician derived clinical assessment of RA (Disease Activity Score in 28 Joints, DAS28; Multidimensional Health Assessment Questionnaire, MDHAQ/RAPID3; and RheuMetric) and to examine the agreement between these clinical tools.

Methods. Urine samples and clinical data were collected from patients with RA (n=41). All patients completed a MDHAQ/RAPID3 and consulting physicians completed a RheuMetric and conducted a joint examination for the DAS28. Urine was analysed for t-PGDM using a competitive enzyme immunoassay. Tetranor-PGDM excretion was calculated as nanograms per milligram of urinary creatinine (ng/mg Cr) and compared to disease activity measures. Data was tested with linear regression, Bland Altman Plot and longitudinal multi-level modelling

Results. Tetranor-PGDM did not correlate longitudinally with any clinical measures of RA. RAPID3, DAS28 and Physician Global scores fluctuated between visits. Patients with low t-PGDM concentrations had a tendency to remain so. DAS28 scores ranged from 1.19 to 6.32, Physician Global scores from 0 to 10 and t-PGDM values from 0.95 to 136.8 ng/mg Cr (mean=17.24, SEM=2.63). RAPID3 and DAS28 showed significant between-person ($p=0.0002$) and within-person effect ($p<0.0001$) longitudinally. Physician and Patient Global scoring showed poor agreement with increasing patient-physician scoring discrepancies at higher Patient Global scores

Conclusion. Examination of effective in vivo markers of mast cell activity and clinical assessment tools remains relevant for improving RA management. Although we were unable to find a correlation between t-PGDM excretion and clinical measures further analysis is required using a larger cohort, with more active RA, and increased longitudinal data.

P22
EXTRACELLULAR VESICLES IN RHEUMATOID ARTHRITIS SYNOVIAL FLUID

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Extracellular vesicles (EVs), including exosomes and microvesicles are lipid bilayer vesicles that are released from cells and found in all bodily fluids. EVs contain a cargo of biologically active molecules including proteins, nucleic acids and lipids, which can alter molecular processes in cells that EVs interact with.

In rheumatoid arthritis, the profile, number and functional effects of EVs in synovial fluid have been reported to change with disease. These changes are believed to not only have roles in disease, but may also serve as clinical biomarkers. However, the complexity of synovial fluid presents challenges in the isolation of pure EV populations, since standard ultracentrifugation-based methods co-isolate large amounts of non-EV synovial fluid protein. This is a major confounder in studying the content and function of EVs in synovial fluid. We have applied a size exclusion chromatography method to purify EVs from synovial fluid of arthritis patients. When compared to EV isolation by ultracentrifugation and sucrose density gradient ultracentrifugation, our size exclusion chromatography method results in a higher quality EV enrichment with considerably less contaminating material, as shown by western blotting and transmission electron microscopy.

Using our size exclusion chromatography method coupled with unbiased 'omics' analyses, we investigated the precise content of synovial fluid EVs in patients with rheumatoid arthritis. Specifically, we identified an enrichment of MHCII and Complement components within rheumatoid synovial fluid EVs. These results provide novel insights into the involvement of EVs in rheumatoid arthritis pathogenesis. Further functional validation of molecules that are unique to, or dysregulated within rheumatoid arthritis EVs is hoped to lead to the identification of novel therapeutic targets or biomarkers.

P23
MEDICATION ADHERENCE IN PATIENTS WITH RHEUMATOID ARTHRITIS, A CROSS-SECTIONAL STUDY IN IRAN

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Aims. This study aimed to assess medication adherence in patients with rheumatoid arthritis (RA) in Shiraz, Iran and identify potential determinants of medication non-adherence.

Methods. A cross-sectional study design using a self-administered survey targeted RA patients visiting the outpatient clinics in Shiraz from January to March 2017. The survey collected demographic and disease-related information, followed by the Compliance Questionnaire Rheumatology (CQR) (de Klerk, van der Heijde et al. 2003) to assess adherence. Disease Activity Score 28 (DAS-28) was measured by rheumatologists for each patient who completed the survey. In this study the cut-off point of 80% was chosen to define adherence. Descriptive data analyses was undertaken using SPSS version 24. A Chi-Square, a Mann-Whitney and t-test were used to test for significant associations between demographic variables and medication adherence status.

Results. A total of 308 surveys were collected. The majority of patients were female (86.0%), married (79.7%), living in urban areas (66.2%), housewives (73.1%), with no income (68.2%) and illiterate (41.9%). The median age of the patients was 53 years of age (IQR: 43 - 62). The median time that patients were being treated for RA was 6 years. The majority of patients had never been hospitalised because of RA (73.4%). The mean score of DAS-28 was 3.85 (SD=1.38) representing moderate disease activity among patients. DAS-28 was higher among women (mean=3.94, SD=1.41) than men (mean=3.32, SD=1.09) ($p<0.05$). Only 19.9% of patients had used biologic agents and 59.7% of patients were non-adherent. Among the biologic users, the percentage of nonadherent patients (78%) was significantly higher than adherent patients (22%) ($p= 0.001$).

Conclusions. The findings of this review suggest that medication adherence is sub-optimal and biologic use is one of the determinants of medication non-adherence. Despite biologics being a mainstay in RA treatment, only one fifth of the respondents were taking biologics.

P24
OSTEOPOROSIS SCREENING IN A TERTIARY RHEUMATOID ARTHRITIS CLINIC. WHO'S SCREENING NOW?

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Aim. Osteoporosis is a complication of rheumatoid arthritis (RA) due to inflammatory disease and treatment with glucocorticoids. With GP

prescription of anti-resorptive parenteral therapies, there may be a shift in recognition of where screening and treatment is occurring. This study aims to assess the adequacy of osteoporosis screening in a tertiary RA clinic and to determine where most screening is occurring.

Methods. A cross-sectional study in patients from a tertiary RA clinic. Osteoporosis screening, therapy and related factors were evaluated. This was compared to best practice screening ACR/GIOP guidelines.

Results. 116 RA patients, 66% female (median age 58 years) were Included. Osteoporosis screening was performed by the rheumatologist in 40.5% of patients and by GPs in 20.7%. 38.8% of patients could recall no recent screening. 36.2% of patients were taking prednisolone, while 74% reported prior exposure. 58.6% of patients had prednisolone for over 3 months. Calcium or vitamin D supplementation was noted in 62% of the population. 21.6% reported a history of minimal trauma fracture and alarmingly only 10% reported currently taking anti-resorptive therapy. 47% of patients had a DEXA scan performed within the last 3 years. Of the 53% that did not have a recent DEXA scan, three quarters had indications for osteoporosis screening based on the 2010 ACR/GIOP guidelines. 35 patients had indications based on age, 11 patients based on glucocorticoid exposure and 1 patient based on history of minimal trauma fracture.

Conclusions. One third of at-risk patients in this sub-cohort are not screened for osteoporosis. More patients are currently screened for osteoporosis by their rheumatologist than their GPs. Under-screening and treatment of osteoporosis in this clinic could be addressed by clearer GP-rheumatologist shared treatment model.

P25
HIGH LEVELS OF PATIENT SATISFACTION IN A PUBLIC HOSPITAL STREAMED RHEUMATOID ARTHRITIS CLINIC COHORT

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Aim. Many Australian public rheumatology services have adopted streamed clinics for rheumatoid arthritis (RA) and specific rheumatic diseases to promote best practice care. Our RA clinic has been operating for a decade and serves a large population in Southeast Victoria. Patient attitudes to such streamed clinics have not been extensively examined. This study aims to evaluate the level of patient satisfaction in an established tertiary hospital streamed RA clinic.

Methods. A cross-sectional study of 106 patients in a public RA clinic was performed utilising an 8 question survey. The questions evaluated clinic administration and the consultation itself using a rating scale from 1 to 5 (1 = very poor, 5 = very good). Qualitative comments were also obtained.

Results. Patient attitudes towards the clinic were predominately positive. 90.5% of patients scored their overall experience as good (4) or very good (5) (mean = 4.46), with 69.8% of these patients scoring 5. Many patients were dissatisfied with waiting times (mean = 3.25), and 36.4% of additional comments concerned wait times. However, within the consultation itself, patients were highly satisfied with explanations, addressing of patient concerns and length of consultation (average 4.5). 15.2% of additional comments regarded limited parking at the hospital, and 9.1% to difficulty locating the clinic within the hospital. 6.1% of patients wanted more information regarding complementary medications or lifestyle modifications. Despite this, 94.7% of all patients surveyed would recommend the clinic to friends or family.

Conclusion. High patient satisfaction with the streamed RA clinic consultation outweighed frustrations with wait times and parking. Patients were likely to recommend the clinic, demonstrating the priority of good communication for patient satisfaction. These findings can guide further improvement to the quality of patient experience.

P26
A RETROSPECTIVE ANALYSIS ON RITUXIMAB FOR RA – AT A DOSE OF 500 MG

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Aim. Rituximab is a chimeric monoclonal anti-CD20 antibody approved for treatment of rheumatoid arthritis (RA) in combination with methotrexate, in patients with active RA and DMARD failure.

Aim was to assess

1 Improvement of RA by DAS-28 ESR, when rituximab is given at a dose of 500 mg.
2 Association of RF positivity and disease improvement assessed by DAS 28
3 Improvement by DAS 28, with age at initiation of treatment

Methods. A retrospective analysis was done on clinic records of patients treated with rituximab 500mg over 3 years. 28 RA patients with DMARD failure treated with 500mg Rituximab two weeks apart six monthly were assessed. DAS-28 score was obtained from clinic records at baseline, and after three years of therapy initiation. Patient's age at treatment initiation and RF positivity were documented.

Results. Out of the28 patients, one had severe anaphylaxis and treatment was stopped. Two patients defaulted and one had poor response requiring switching to an alternate biologic. From the remained 24 patients, the mean age was 54± 9.92. Baseline DAS 28 was 5.34 ± 1.25 and DAS 28 at three years was 4.10 ±1.24. Improvement of DAS 28 at three years was significant at $p<0.05$ ($p = .001314$). Association between remission (DAS 28 <2.6) at three years was statistically significant ($p<0.05$) in people of ≤50years at treatment initiation (chi-square statistic = 6.4. $p=.011412$). RF was negative in three patients, and none of them had a DAS 28 score of <2.6 at 3 years. Association of RF positivity with remission at three years was not significant ($p <0.05$, Fisher exact test statistic =1).

Conclusion. Rituximab at a dose of 500 mg was effective in reaching remission at three years; there was no significant positive response in RF positive patients. A significant positive response was seen in patients aged ≤50years at therapy initiation.

P27
THE USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE BY RHEUMATOID ARTHRITIS PATIENTS IN A UNIVERSITY HOSPITAL CLINIC IN INDIA

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Background. There is a paucity of data regarding the use of and attitudes toward complementary and alternative medicine (CAM) among rheumatoid arthritis (RA) patients in Asia, especially India where these practices are highly prevalent. This study was performed to evaluate the pattern of utilization of CAM, related demographic and clinical factors, and attitudes among Indian RA patients. We focused on the CAM systems utilizing oral drugs and acupuncture.

Methods. We conducted a survey of patients in rheumatology clinics affiliated with a university hospital. 250 patients suffering from rheumatoid arthritis (RA), satisfying American College of Rheumatology (ACR) criteria were interviewed for the modalities of therapy and drugs used. All patients have been diagnosed with RA more than 5 years back. We analysed prescriptions of both conventional and CAM practitioners. Direct questionnaires regarding CAM were avoided. Fifty two percent (130 patients) had used CAM drugs and 60% of them had used more than two modalities.

Results. Ayurveda, homeopathy, Persian medicine and acupuncture were the four common CAM utilized by the patients in that order. About 80 percent patients using CAM believed conventional medicine has no cure for RA and adverse reactions were rare in CAM. These factors predominantly influenced their decision to use CAM. Family income, urban and rural living did not influence usage of CAM. The use of CAM significantly increased as the duration of disease increased. (detailed results will be presented)

Conclusion. The knowledge of CAM is essential to avoid drug interactions, recognise their reactions and also appreciate their risks and benefits. 'Alternative treatments' play an important role as self prescribed therapy in rheumatoid arthritis and their use should not be ignored nor underestimated. A scientific scrutiny to these practices and utilizing them carefully, if beneficial is needed.

P28
THE ROLE OF METHOTREXATE MONOTHERAPY ALONG WITH VITAMIN D IN NEWLY DIAGNOSED RHEUMATOID ARTHRITIS

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Introduction. Rheumatoid arthritis is a very common chronic inflammatory and autoimmune disease affecting approximately 1% of world population. The subsequent inflammatory changes lead to cartilage and bone destruction and the corresponding systemic inflammation may result in disorders of multiple organ systems.

Aim. To study the role of methotrexate monotherapy along with vitamin D in newly diagnosed cases of rheumatoid arthritis.

Materials and Methods. This is a prospective randomized controlled study . It comprised of two groups each having 50 patients of RA each. One group only methotrexate subcutaneously was given and in another group along with methotrexate vitamin D in a high loading dose was given. The dosage of Methotrexate was 25mg/week and 0.6 million IU Vitamin D was given. The maximum follow up was of about 2 years which was done by clinical evaluation, ACR and DAS scoring.

Results. On the basis of this study it was found that patients who were given vitamin D along with subcutaneous methotrexate, the relief to the symptoms was early, significant (P <0.05) and more dramatic as compared to patients receiving only subcutaneous methotrexate. A significant association between vitamin D levels and ACR scores, CRP levels and ESR was observed. Lower vitamin D levels were associated with higher ACR scores, CRP levels and ESR.

Conclusion. The findings of the present study thus showed that vitamin D deficiency was quite common in patients with rheumatoid arthritis and vitamin D deficiency was significantly associated with disease activity. Vitamin D supplementation helped to improve the outcome of methotrexate therapy among early cases of rheumatoid arthritis and also helped to eradicate the vitamin D deficiency in the targeted group. These findings suggest subcutaneous Injection Methrotrexate monotherapy along with high dose Vitamin D is an excellent treatment regime for adult patients diagnosed with early RA.

P29
Abstract Withdrawn.

P30
CAN SIMPLE EDUCATIONAL FLASHCARDS CHANGE ATTITUDES TO VACCINATION IN AN UNDER-VACCINATED RHEUMATOID ARTHRITIS COHORT?

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Aims. There is increased infection risk in RA and therefore a need to improve currently suboptimal vaccination rates reported globally. This study aims to re-examine vaccination rates and determine if simple education flashcards can change attitudes towards vaccination in a tertiary hospital RA clinic cohort.

Methods. 126 consecutive rheumatoid arthritis clinic patients (data collection ongoing) were surveyed regarding their vaccination status and attitudes. Patients were then shown two simple educational flashcards (targeted to address the main concerns previously expressed by unvaccinated patients in this cohort) and then surveyed to examine any shift in attitude to vaccination.

Results. The RA cohort was representative of a typical RA population. 67% of patients were female with a mean age of 57 years. 40% of patients were on biologic medication. 13% of patients have been previously hospitalised for influenza or pneumonia. 37% of patients had not received the influenza vaccine. In patients over 65 years old, 51% had not received the pneumococcal vaccine within the last 5 years. Reasons reported for not being vaccinated included "I forget", "I worry about the side effects", "I don't think I need the vaccine as I don't get the flu", and "I had the vaccine and it made me sick". After reading the education flashcards 49% of currently unvaccinated patients reported "I feel more informed and am more likely to get the vaccine next year". Rates of vaccination, infection and attitudes both pre and post flashcards did not differ between patients on biologics and not on biologics (all p-values >0.05).

Conclusion. This at-risk RA cohort continues to be under-vaccinated. Simple flashcards showed potential to change attitudes in unvaccinated patients. Insights from this study could be used to refine and reiterate this educational intervention for implementation in a larger cohort to impact on vaccination rates in subsequent years.

P31
REASONS FOR bDMARD CESSATION AND SUBSEQUENT PERSISTENCE OF SECOND LINE TREATMENT IN A LARGE REAL WORLD RHEUMATOID ARTHRITIS (RA) REGISTRY

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Aim. To identify reasons for stopping first-line biologic (b)/targeted synthetic (ts) DMARDs in RA patients treated in clinical practice setting, identify second-line b/tsDMARDs choices in patients who stop TNF inhibitors (TNFis) within 6-months (mo) due to lack of efficacy and the persistence on these treatments.

Method. Patients ≥18 years with confirmed RA who received first-line b/tsDMARDs (between August-2010 and June-2017) were included. Reasons for stopping b/tsDMARDs were recorded during routine visits. b/tsDMARDs included: abatacept (ABA), adalimumab, certolizumab pegol, etanercept, golimumab, infliximab and tocilizumab (TCZ), rituximab (RTX) and tofacitinib (TFB). Data were analysed using descriptive statistics (continuous variables) and frequency counts (categorical variables). Treatment persistence was summarised using Kaplan-Meier methodology. Individual TNFis were combined for simplicity.

Result. 6914 patients received first-line b/tsDMARDs. Median age: 61-years. Median disease: duration (onset to last visit) 10-years. The majority (75%) were females. Treatment was stopped in 2656(38%) patients; 914 (34%) of these stopped within 6mo of initiation. Of those that stopped, the highest and lowest percentage stopping within 6mo was in patients receiving TFB-(54%) and TCZ-(17%), respectively. The most common reasons for stopping within 6mo were lack of efficacy (45%-ABA, 44%-TNFis, 33%-TFB and 27%-TCZ) and adverse reactions (21%-TFB, 20%-TCZ, 15%-TNFis, 13%-ABA). Stopping due to lack of efficacy-primary failure was highest for TFB-(23%). The percentage of patients remaining on second-line b/tsDMARD treatment after stopping first-line TNFis due to lack of efficacy was the highest for TCZ-(78%) at 6mo and RTX-(75%) at 12mo. Median time to stopping second-line treatment was 48mo-RTX (95% CI:17-74), 21mo-TCZ (95% CI:11-62), 21mo-TFB (95% CI:6-21); 11mo-ABA (95% Cl:8-22) and 9mo-TNFis (95% CI:7-12).

Conclusions. Primary failure rate is lower than previously reported. Patients who failed first-line TNFis within 6mo due to lack of efficacy and switched to second-line TNFis showed the lowest treatment persistence. Data will assist clinicians with treatment choices post primary TNFis failure.

P32
DURATION OF RESPONSE IN A PHASE 3 STUDY OF SARILUMAB PLUS METHOTREXATE IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA)

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Aim. Sarilumab is a human mAb blocking the IL-6Rα. In MOBILITY (NCT01061736), sarilumab (150 or 200 mg SC q2w) plus methotrexate demonstrated efficacy in adults with moderate-to-severely active RA and inadequate response to methotrexate. Most common adverse events were

infections, neutropenia, injection site reactions, and increased transaminases. This post hoc analysis examined differences in duration of response based on various response definitions in MOBILITY.

Method. Patients achieving a response at any point during the study were included. Patients who did not respond at any visit were excluded. Five definitions of duration of response were used: time from initial response to loss of response; longest response; cumulative number of responder weeks; cumulative percentage of responder weeks; sustained response (binary analysis whether response was maintained until end of the double-blind). Duration of response was measured for ACR20, improvement in HAQ-DI ≥0.3 units, CDAI ≤2.8, SDAI ≤3.3, and DAS28-CRP <2.6.

Result. In patients achieving a response at any point in MOBILITY, those treated with sarilumab 150 or 200 mg q2w + methotrexate had significantly longer duration of response vs those treated with placebo + methotrexate regardless of definition of response used for ACR20, HAQ-DI, and DAS28-CRP. For example, with sarilumab 150 and 200 mg vs placebo, the duration of ACR20 response was 22.5 and 25.5 vs 16.0 wk (time to first loss of response), 28.2 and 30.8 vs 19.9 wk (longest response), and 31.8 and 33.9 vs 23.4 wk (cumulative responder weeks), respectively. Sarilumab-treated patients achieved significantly longer sustained response by both ACR20 and HAQ-DI, whether they achieved response at week 12 or 24.

Conclusion. Regardless of the five different definitions of response used, patients treated with either dose of sarilumab + methotrexate experienced longer duration of response vs those treated with placebo + methotrexate.

P33
EFFICACY AND SAFETY OF SWITCHING FROM ADALIMUMAB TO SARILUMAB IN AN OPEN-LABEL EXTENSION OF A PHASE 3 MONOTHERAPY TRIAL IN PATIENTS WITH ACTIVE RHEUMATOID ARTHRITIS (RA)

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Aim. Sarilumab is a human mAb blocking the IL-6Rα. In MONARCH (NCT02332590), where RA patients intolerant of, inappropriate for, or inadequate responders to methotrexate received monotherapy with SC sarilumab 200 mg q2w or adalimumab 40 mg for 24 weeks, sarilumab was superior to adalimumab in reducing disease activity and improving physical function. Safety profiles of both therapies were consistent with published data. Patients completing the double-blind phase could continue in the open-label extension (OLE) where patients received sarilumab 200 mg q2w monotherapy.

Method. This analysis assessed disease activity, physical function, and safety in patients switching from adalimumab and those continuing sarilumab. Data were used as observed.

Result. 320/321 patients completing MONARCH entered the OLE: 155 switching from adalimumab to sarilumab, and 165 continuing on sarilumab. At OLE entry, in the switch vs continuation group, mean DAS28-ESR was 4.46 vs 3.45 and DAS28-ESR ≤3.2 was 16.1% vs 47.9%, respectively (both P<0.0001). By Week 24 of the OLE, the proportion of patients in the switch and continuation groups who achieved DAS28-ESR ≤3.2 was 49.7% vs 58.8% (P=0.1033), DAS28-ESR <2.6 was 40.0% and 42.4% (P=0.6586), CDAI ≤2.8was 12.3% and 18.8% (P=0.1054), and HAQ-DI improvement ≥0.3 was 63.9% and 66.7% (P=0.6004), respectively. At Week 24 of the OLE, treatment-emergent adverse events (TEAEs; 63.9% vs 57.9%), discontinuations due to TEAEs (5.8% vs 3.6%), serious TEAEs (9.0% vs 1.2%), infections (34.2% vs 23.6%), and serious infections (1.9% vs 0%) were observed in switch and continuation groups, respectively, with one death (switch group: malignancy)

Conclusion. Patients switching from adalimumab 40 mg monotherapy to sarilumab 200 mg q2w monotherapy demonstrated improvements in physical function and signs/symptoms of RA, which became numerically similar to patients initially randomized to sarilumab 200 mg q2w. Safety observations in the OLE were generally consistent with those in the randomized portion of the study.

P34
EFFICACY OF SARILUMAB IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA) WHO PREVIOUSLY RECEIVED SARILUMAB OR TOCILIZUMAB

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Aim. ASCERTAIN (NCT01768572) was a 24-week, randomized, double-blind study in RA patients and inadequate response to or intolerance of TNF inhibitors receiving background csDMARDs. Patients were randomized 1:1:2 to subcutaneous (SC) sarilumab 150 mg every 2 weeks (q2w) or 200 mg q2w, or IV tocilizumab every 4 weeks (q4w) at 4 to 8 mg/kg. This post hoc analysis examined outcomes for ASCERTAIN patients who switched to SC sarilumab 200 mg q2w in the open-label extension EXTEND (NCT01146652).

Method. Clinical endpoints were summarized through Week 84 of EXTEND according to original randomized treatments. Patients who had not achieved ACR20/50/70, DAS28-CRP <2.6 and <3.2 and CDAI ≤2.8 and ≤10.0 at EXTEND enrollment were classified as initial non responders for that parameter.

Result. Of 175 patients completing ASCERTAIN, 93/96 from the tocilizumab group, 37/40 from the sarilumab 150 mg group, and 38/39 from the sarilumab 200 mg group entered EXTEND. Improvements in DAS28-CRP and CDAI in ASCERTAIN were maintained after switch to open-label sarilumab in EXTEND through Week 84. Regardless of initial treatment in ASCERTAIN, proportions of patients achieving ACR20/50/70 response, DAS28-CRP <2.6 and <3.2 and CDAI ≤2.8 and ≤10.0 increased after switch to sarilumab 200 mg. Generally, a greater proportion of non-responders switching from tocilizumab or sarilumab 150 mg to 200 mg achieved ACR20/50/70 response, DAS28-CRP <2.6 and <3.2 and CDAI ≤2.8 and ≤10.0 compared with non responders maintained on sarilumab 200 mg. Most common adverse events in the EXTEND safety population (patients from ASCERTAIN and four other sarilumab studies), were infections and neutropenia.

Conclusion. Efficacy was maintained or improved in patients rolling over from ASCERTAIN into EXTEND; largest increases in efficacy occurred in non responders initially receiving tocilizumab or sarilumab 150 mg. Although based on a limited population, findings suggest switching tocilizumab non responders to sarilumab may have favorable efficacy outcomes.

P35
SUSTAINED RESPONSE IN A PHASE 3 STUDY OF SARILUMAB PLUS NONBIOLOGIC DISEASE-MODIFYING ANTIRHEUMATIC DRUGS IN PATIENTS WITH ACTIVE, MODERATE-TO-SEVERE RHEUMATOID ARTHRITIS AND INADEQUATE RESPONSE OR INTOLERANCE TO TUMOR NECROSIS FACTOR INHIBITORS

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Aim. Sarilumab is a human mAb blocking the IL-6Rα. In TARGET (NCT01709578), sarilumab (150 or 200 mg subcutaneously [SC] every 2 weeks [q2w]) plus csDMARDs demonstrated efficacy in adults with moderately-to-severely active RA and TNFi-IR. Consistent with IL-6 inhibition and the safety profile of sarilumab, infections, neutropenia, injection site reactions, increased lipids, and increased transaminases were among the most common treatment-emergent adverse events. This analysis examined whether patients who achieved clinical response and improvements in physical function at Week 12 sustained that response until Week 24 (end of study).

Method. A sustained response was defined as a response at Week 12 continuous until Week 24. An additional definition allowed for a single visit without a response (excluding the last 2 visits at Week 20 and 24). Response was measured for the following clinical efficacy endpoints: ACR20/50/70 response, HAQ-DI≥0.22 units of improvement from baseline, CDAI≤2.8, CDAI>2.8 to ≤10, SDAI≤3.3, SDAI>3.3 to ≤11, DAS28-CRP<2.6, and DAS28 CRP≥2.6 to ≤3.2.

Result. At Week 12, the percentage of patients achieving ACR20/50/70 response was significantly higher for sarilumab 150 mg q2w (54.1/30.4/13.8%) or 200 mg q2w (62.5/33.2/14.7%) vs placebo (37.6/13.3/2.2%); those achieving HAQ DI≥0.22 units of improvement from baseline (200 mg q2w dose only) was also significantly higher vs placebo (58.7 vs 47.5%). From Week 12 to 24, the majority of sarilumab responders sustained response, or had ≤1 nonresponse; comparatively fewer patients in the placebo group achieved and sustained a response. These observations were similar regardless of whether responses were maintained at every visit from Week 12 to 24, or whether 1 nonresponse occurred. A similar trend was also observed for CDAI, SDAI and DAS28-CRP.

Conclusion. In TARGET, more patients with RA and TNF-IR who were treated with sarilumab + csDMARDs achieved and sustained a clinically significant response vs those treated with placebo + csDMARDs.

P36
THE EFFECT OF SARILUMAB IN COMBINATION WITH csDMARDs ON FASTING GLUCOSE AND GLYCOSYLATED HEMOGLOBIN IN PATIENTS WITH RHEUMATOID ARTHRITIS WITH AND WITHOUT DIABETES

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Aim. IL-6 involvement has been reported in glucose metabolism. Sarilumab, a human mAb blocking the IL-6Rα, was evaluated in two placebo-controlled trials of sarilumab plus DMARDs in RA: MOBILITY and TARGET. This post hoc analysis examined effects of sarilumab or placebo, plus csDMARDs, on fasting glucose and glycosylated hemoglobin (HbA1c) in patients with RA, with and without diabetes.

Method. Fasting glucose and HbA1c data were collected during MOBILITY and TARGET. Studies excluded patients with HbA1c ≥9.0%. Patients were categorized as diabetic (DIAB) or non-DIAB based on medical history and/or prior use of antidiabetic medication. Changes from baseline (BL) in fasting glucose, HbA1c, weight, and high-sensitivity (hs)-CRP were stratified by clinical response.

Result. At BL, the DIAB group (n=179) had higher mean body weight (84.8±21.4 vs 74.6±18.8 kg) and a larger proportion of patients with BMI≥30 kg/m2 (56.7 vs 31.9%) vs the non-DIAB group (n=1803); mean fasting glucose and HbA1c were similar across treatment groups, but higher in DIAB patients than in non-DIAB patients. At Wk 24, DIAB patients had a greater reduction in fasting glucose than non-DIAB patients. Decreases in HbA1c occurred in non-DIAB and DIAB sarilumab-treated groups, but not with placebo. The treatment effect was largest in DIAB patients. At Wk 24, the change in HbA1c in DIAB patients was -0.43% with sarilumab 200 mg and +0.17% with placebo (-0.69% mean difference; P<0.001). Reductions in fasting glucose and HbA1c in sarilumab-treated DIAB patients occurred independently of changes in hs-CRP, ACR50, or DAS28-CRP remission status, despite increases in mean body weight. The overall safety of sarilumab did not differ between DIAB and non-DIAB patients.

Conclusion. Sarilumab plus csDMARDs reduced fasting glucose and HbA1c in DIAB patients and HbA1c in non-DIAB patients with RA, independent of changes in body weight, hs-CRP, ACR50, or DAS28-CRP remission status at Wk 24.

P37
VALIDATION OF HEPATIC FIBROSIS MARKERS IN PEOPLE WITH RHEUMATOID ARTHRITIS ON METHOTREXATE

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Aim. For over 20 years, methotrexate has been recommended as a first line disease modifying anti-rheumatic drug in the treatment of rheumatoid arthritis (RA). A well-known, though relatively rare side effect of methotrexate is liver fibrosis, with an incidence of around 3%. Current screening practice is regular liver function tests, however these are not sensitive or specific to underlying liver fibrosis. The project aim is to investigate the role of other potential screening tools, by comparing hepascore, fibroscan and AST:Platelet ratio index (APRI) in the assessment of liver fibrosis in RA patients on methotrexate, and to see whether disease activity or dose and duration of methotrexate affect these markers.

Method. A quantitative observational study in RA patients recruited from Fiona Stanley Hospital, began in June 2017. Patients were recruited during routine outpatient follow-up, with DAS-28 measured, dose and duration of methotrexate noted, fibroscan performed and blood tests taken on the same day. Hepascore of >0.45 and APRI >0.7 were used as cut-offs for presence of fibrosis. The fibroscan measurements were based on those for Non-Alcoholic Fatty Liver Disease, with cut off for moderate-severe fibrosis >7kPa.

Results. As fibroscan is unreliable in people with a BMI over 30, a high percentage of patients failed screening. To date, only 12 patients have been recruited. 1 had evidence of moderate fibrosis based on fibroscan (8kPa) and hepascore (0.47) with negative APRI (0.1), and 1 had evidence of cirrhosis based on fibroscan (14.3 kPa), hepascore (1.00) and APRI (1.5). 2 patients had a positive hepascore (0.6, 0.52), but negative fibroscan (3.7 kPa, 4.4 kPa) and APRI (0.3, 0.3). There was no correlation between disease activity and fibrosis scores (APRI, hepascore or fibroscan). Further results are pending.

Conclusions. Fibroscan and hepascore may be useful in screening for liver fibrosis in patients with RA on methotrexate.

P38
CLINICAL IMPACT OF ARTICULAR ULTRASOUND IN DIAGNOSIS AND FOLLOW-UP OF PATIENTS WITH POLYARTHRITIS AT CHUS

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Aims. It is well established in the literature that joint ultrasonography (JU) is more sensitive than clinical examination in the detection of synovitis. JU can help rheumatologists with the diagnosis and follow-up of uncertain cases. The main objective of this study is to validate the added value of JU in the diagnosis and follow-up of patients presenting with arthritis in the rheumatology department of the CHUS.

Methods. We reviewed retrospectively the medical records of patients with an uncertain initial diagnosis of arthritis (Group 1: n=58) and patients with clinically uncertain disease activity on follow-up (Group 2: n=103). We examined the contribution of JU in the diagnosis of arthritis and its impact on treatment decision making.

Results. In group 1, 56.9% of patients were confirmed with polyarthritis after JU (n=33). 54.5% of them were diagnosed with rheumatoid arthritis (n=18). There was no statistically significant predictors for a positive JU. In the follow-up group, 27.2% had a positive JU (n=28). 67.9% had their treatment optimised (n=19). 44.4% of patients with positive ultrasound without treatment modification had articular infiltrations following the JU (n=4). Within patients with negative JU (n=75), 10% had a decrease in their medication (n=8) while 71% had no change in their treatment (n=53). The result of the ultrasound had a statistically significant impact on the treatment decision making (p <0.0001).

Conclusions. Our results support the added value of JU in the diagnosis and management of polyarthritis, mainly in patients whith a doubtful

clinical picture. Similar results can be found in the current literature. We did not succeed to identify predictive factors of a positive JU.

P39

ABLATION OF PAR1 AND PAR2 EXACERBATES COLLAGEN-INDUCED INFLAMMATORY ARTHRITIS IN MICE

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Activation of proteinase activated receptors (PARs) occurs in, and contributes to, the pathogenesis of rheumatoid arthritis (RA). Recently PARs have been proposed to act as a sensor system to detect infection. The increased infection and exposure to microbial products has been proposed as a trigger for RA onset in susceptible individuals. In this study, we investigated whether deficiency of PAR1 and PAR2 affects the onset and development of RA in a murine collagen-induced arthritis (CIA) model and the bacterial killing ability of neutrophils in vitro. CIA was induced in PAR1 and PAR2 gene knockout (KO) and wild type (WT) mice. Neutrophils were isolated from mouse spleens and used to test their bacterial killing ability at the presence or absence of interferon (IFN)-γ. In the CIA model, arthritis incidence and severity in PAR1 and PAR2 KO mice were more than 50% higher ($P<0.01$) than that in WT mice at week 3 after the second collagen immunization. Interestingly, after the second collagen immunization, arthritis onset was observed within 1 week in PAR1 KO mice, after 1 week in WT mice and after 2 weeks in PAR2 KO mice. PAR1 and PA2 KO mice also displayed higher serum levels of interleukin (IL)-17 than WT mice, with no detectable IFN-γ in any mice. In vitro, WT spleen cells produced higher levels of IFN-γ ($P<0.05$) than PAR1 or PAR2 KO cells in control conditions or in response to LPS. WT neutrophils showed greater bacterial killing ability ($P<0.05$) than either PAR1 or PAR2 KO cells. IFN-γ stimulated WT and PAR1 KO, but not PAR2 KO neutrophil bacterial killing ability. Our results indicate that deficiency in PAR1 or PAR2 exacerbates CIA with disease onset earlier in PAR1 KO and delayed in PAR2 KO when compared to WT mice, and reduces neutrophil bacterial killing ability in vitro.

P40

REAL-WORLD UTILIZATION AND OUTCOMES OF RHEUMATOID ARTHRITIS PATIENTS MANAGED WITH BIOLOGIC-DMARDS IN AN AUSTRALIAN TERTIARY OUTPATIENT CLINIC

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Aims. To evaluate the use and outcomes of RA patients commenced on BDMARDs including persistence of first-line, switching, and discontinuation.

Methods. A retrospective review of all RA patients commenced on a BDMARD at the rheumatology specialist biologic clinic at Princess Alexandra Hospital, Brisbane, between 2006 and 2016 is being conducted. Baseline data including demographics, disease activity, co-morbidities and concomitant DMARDs will be collected. Data regarding first-line persistence, discontinuation and switching (including inadequate response, adverse event, patient preference and co-morbidity) for all BDMARDs will be analysed.

Results. 182 RA patients were commenced on a BDMARD between 2006 and 2016 (129 active and 53 inactive), 60% (n=111) of patients are female, mean age is 55 (19 - 84 years) and 74% are seropositive. Average baseline joint count for small joint PBS criteria is 27 (n=124) and for large joint is 8 (n=52), Baseline mean ESR is 45 (n=156) and CRP is 30 (n=152). The BDMARDs currently in use within the cohort include Tocilizumab (n=26, 20%) Golimumab (n=26, 20%), Rituximab (n=24, 18%) Etanercept (n=20, 15%) Adalimumab (n=19, 15%), Tofacitinib (n=9, 7%) Abatacept (n=5, 4%).

Conclusions. BDMARDs have revolutionized the management of RA however there is a paucity of data regarding their real-world use. Understanding outcomes particularly related to BDMARD switching will allow for improved RA patient care.

P41

THE AUSTRALIAN ARTHRITIS AND AUTOIMMUNE BIOBANK COLLABORATIVE (A3BC) PROTOCOL

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The A3BC seeks safer, more effective and evidence-based prevention, diagnosis, treatment and prognosis strategy in arthritis and autoimmune disease. Key A3BC aims are to:

- Develop a higher level of capability by collaborating across multiple disciplines and sectors
- Progress precision medicine by growing capacity in open-access, data-linked biobanking
- Innovate preventive medicine by forming unique partnerships with population health research
- Demonstrate a new era of data linkage and use to inform policy and practice decision-making

The A3BC protocol was developed in consultation with leading researchers, clinicians, industry and best practices. Initial A3BC diseases are RA, JIA, PsA and AS; with Vasculitis, JDMS, OA and others to follow. The A3BC will merge with the Australian Rheumatology Association Database (ARAD), providing patient-reported outcomes and linked processes.

Recruited through over 40 sites nationally, participants donate blood (20-53mls) and synovial tissue/fluid, stored across 10 biobank nodes as plasma, serum, PBMCs, DNA and RNA. On a project basis, newborn screening cards, urine and/or faeces are accessed.

These samples are accompanied by standardised pre-analytical variables and clinical data, and linked datasets including the ARAD, electronic medical records, Commonwealth health (e.g. PBS), registries (e.g. cancer), longitudinal/lifecourse data (e.g. ANZ CLARITY), and consumer entry (My Health Record).

Using cutting-edge capture, real-time analytics and dashboarding processes and systems, all data is integrated and mined for patterns and associations, then effectively communicated to practitioners and policy-makers.

The A3BC protocol will result in new dataset integration systems, new multidisciplinary collaborations, and identification of new risk factors, biomarkers and cross-dataset associations. It will improve research by enabling innovative research questions and faster translation. And facilitate health policy/ practice decision-making in precision and preventive medicine.

The A3BC protocol provides best-practice, quality assured and validated methods to realise its aims. Current experience from recruiting and processing participants demonstrates that the protocol's methods and technologies are fit-for-purpose.

P42
PREVALENCE OF OSTEOPOROSIS AMONG RHEUMATOID ARTHRITIS PATIENTS IN TAIWAN: A SINGLE-CENTER RETROSPECTIVE STUDY IN SOUTHERN TAIWAN

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Aim. Osteoporosis has been long recognized in Rheumatoid Arthritis (RA) patients. In this study, we aimed to evaluate the prevalence of osteoporosis among RA patients and identify risk factors for osteoporosis in RA patients.

Methods. This is a retrospective study conducted in a regional hospital located in Taiwan. 363 RA patients under stable dose of glucocorticoid and csDMARDs were retrospectively review. All patients received dual-energy x-ray absorptiometry (DXA) for BMD evaluation. An age sex frequency-matched process was performed from the health examination Database.

Results. The study comprises 363 RA patients and 360 non-RA patients (77.8% female and 22.2% male). Age and sex were similar between RA and non-RA group.

The prevalence of osteopenia was 172 (47.5%) and 194 (53.9%) in RA and non-RA group respectively, $p<0.001$. The prevalence of osteoporosis was 121 (33.4%) and 70 (20.0%) in RA and non-RA group respectively, $p<0.001$.

Univariable associations with BMD showed strong negative association with age, female and previous fracture ($p<0.001$). Smoking was negatively associated with osteoporosis, RF-IgM and anti-CCP do not showed significant correlation with osteoporosis. Male, glucocorticoid and BMI were positively associated with BMD (all $p<0.05$).

Multivariate analysis showed age, female, previous fracture and BMI remained statistically significant, $p<0.001$. However, glucocorticoid usage and smoking were no longer statistically significant with BMD. Anti-CCP and RF-IgM remained non significant correlation with osteoporosis.

The multivariable sensivitiy analysis demonstrated that for every 1kg/m2 increase in BMI, T-score increased on average by 0.101. Compared to normal BMI (18.5-23.99) patients, underweight patients (BMI 14-18.49) possessed 5.26 times higher risk of osteoporosis.

Conclusion. Prevalence of osteopenia and osteoporsis are significantly higher in RA patients compare to non-RA population. The risk factors for osteoporosis for patients with RA were age, low BMI, female and previous fracture. Further investigation is need to clarify the relationship of anti-CCP with osteoporosis.

P43
MECHANISMS OF OSTEOPOROSIS PROGRESSION IN PATIENTS WITH CHRONIC PANCREATITIS

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Aim. to determine mechanisms of osteoporosis progression in patients with chronic pancreatitis.

Method. 87 patients with chronic pancreatitis were examined, of them 45 with mild (fecal elastase-1 200-150 μg/g) exocrine pancreatic insufficiency (EPI) and 42 with moderate (fecal elastase-1 150-100 μg/g) EPI. Bone density was measured by heel ultrasound densitometry. Pancreatic exocrine function was assessed using the fecal elastase-1 test. Tumour necrosis factor (TNF)-α was measured by ELISA. Statistical data has been performed on workstation by means of software "Microsoft Excel" and "Statistica 8.0".

Result. Of the 45 patients with mild EPI, 14 had normal bone mineral density (T-score of -1.0 or above), 29 had osteopenia (T-score between -1 and - 2.5), and 2 had osteoporosis (T-score of -2.5 or below). In patients with moderate EPI: 6, 27 and 10, respectively. The comparative analysis of the examined groups has proved the significant difference ($df=2$, $\chi2=8,604$, $p=0,014$). Level of TNF-α was also different between groups: $37,2\pm1,1$ ng/l in mild EPI and $41,7\pm1,3$ ng/l in moderate EPI ($p<0,05$). It has been found out that severity of disturbances in bone metabolism correlates with degree of EPI ($r=0,885$) and TNF-α level($r=0,673$).

Conclusion. Thus, as a result of studies, it has been found out that the severity of disturbances in bone metabolism in chronic pancreatitis is depends on the degree of exocrine insufficiency of the pancreas, which may be reflection of vitamin D malabsorption aggravation. Also an important factor of osteoporosis progression in chronic pancreatitis is a significant intensification of the proinflammatory cytokine response, which was expressed by hyperproduction of TNF-α, which is also implicates in bone resorption.

P44
OSTEOPOROSIS AS A COMPONENT OF GASTROINTESTINAL CONTINUUM

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Reducing mortality and increasing life expectancy have changed the face of civilization. Over the past century, considerably increased the number of people living to the elderly and senile, and their share in the total population. In addition, the requirements to the quality of life of men and women, the elderly and children have increased. The aging of the population in many countries necessitates the study of the physiology and pathology that occur in old age, as well as the development and improvement of specialized geriatric care.

Aims. to study bone mineral density of elderly and senile patients with pathology of gastroduodenal and biliary systems.

Methods. under our supervision were 50 patients aged from 65 to 85 years, who had a history of gastroduodenal and biliary system pathology: chronic calculous cholecystitis, biliary dyskinesia, chronic gastritis, duodenitis, ulcer duodenal ulcer, chronic pancreatitis. All patients underwent bone density testing: peripheral densitometers, central densitometers, determination of the level of 25-Hydroxyvitamin D.

Results. according to the results of the densitometry, all the patients that were examined showed a violation of bone mineral density: 20 had osteopenia, 18 had osteoporosis, 12 had severe osteoporosis, and 4 of them had compression fractures of the vertebral bodies. Obviously, this was due primarily to the presence in patients of syndromes of maldigestia and malabsorption with a violation of the assimilation of mineral and organic substances. In addition to violations of bone, remodeling also resulted in a violation of normal absorption of vitamin D what can be the consequence of long-term inflammatory processes in the digestive system.

Conclusion. the role of the digestive system in maintaining normal mineral density of bone tissue is obvious. It is sensible to carry out laboratory and instrumental investigations methods to assess bone metabolism in patients with pathology of the gastrointestinal tract and hepato-biliary system.

P45
THE CORRELATION BETWEEN KELLGREN LAWRENCE RADIOGRAPHIC SCORE AND RESPONSE TO CONSERVATIVE TREATMENTS IN PATIENTS WITH OSTEOARTHRITIS OF THE KNEE

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Aim. The aim of this study was to investigate the correlation between response to non-surgical treatment of knee osteoarthritis and patients' radiographic Kellgren & Lawrence (KL) scores and hence to guide the clinicians to decide which group of patients are more suitable to be managed conservatively.

Methods. This study recruited patients in orthopaedic waiting list clinic in a metropolitan hospital in Melbourne. Patients who have had their knee osteoarthritis managed conservatively with at least 6-month follow-up in this clinic were selected (n=154). Conservative managements include physiotherapy, weight loss with dietician support, intra-articular steroid injection and joint aspiration. The response to treatment of these patients including their own prospective, visual analogue scale (VAS) scores, walking distance and Multi-Attribute Arthritis Prioritisation Tool (MAPT) scores were recorded. Their radiographic Kellgren & Lawrence scores were recorded as well. The correlations between KL scores and MAPT change, KL scores and VAS change were then analysed with STATA package.

Results. Most patients (65%) have reported an improve in symptoms after conservative managements. However, the Kendall tau-b test have shown that there is no statistically significant correlation between KL grade and change in MAPT score (tau-b=0.1424, $p<0.05$), and between KL grade and change in VAS score (tau-b=0.0673, $p<0.05$). A wider range of MAPT and VAS change can be found in patients with higher KL grades. Also, for higher KL grades, it is more likely to obtain larger volume of synovial joint aspiration.

Conclusion. Most patients have responded well to conservative therapies. However, there is no statistically significant correlation between KL grade and response to conservative treatment of knee osteoarthritis.

P46
HOW DO MRI-DETECTED SUBCHONDRAL BONE MARROW LESIONS (BMLS) ON TWO DIFFERENT MRI SEQUENCES CORRELATE WITH CLINICALLY IMPORTANT OUTCOMES?

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Aim. Fluid-sensitive MRIs are preferred in scoring BMLs compared to gradient recalled echo-type MRI. However, whether one sequence correlates better with clinical osteoarthritis outcomes than the other is unknown.Therefore, we aimed to describe associations between BMLs present on two different MRI sequences and clinical outcomes, cartilage defect progression, cartilage volume loss over 2.7 years, and total knee replacement (TKR) over 13.3 years.

Methods. 394 participants (50-80 years) were assessed at baseline and 2.7 years. BMLs at baseline was scored on T1-weighted fat-suppressed 3D gradient-recalled acquisition (T1) and T2-weighted fat-suppressed 2D fast spin-echo (T2) sequences. Knee pain, function, and stiffness were assessed using WOMAC, and cartilage volume and defects using validated methods. TKR incident was determined by data linkage. Associations were assessed using ordinal logistic, linear, log binomial, and multilevel mixed-effects linear regressions, after adjusting for confounders.

Results. BMLs were mostly present on both MRI sequences (86%). BMLs present on T2, T1, and both sequences were associated with greater knee pain and functional limitation (odds ratio=1.49 to 1.70). Longitudinally, BMLs present on T2, T1, and both sequences were associated with worsening knee pain (β=1.12 to 1.37) and worsening stiffness (β=0.45 to 0.52) but not worsening functional limitation or total WOMAC. BMLs present on T2, T1, and both sequences predicted site-specific cartilage defect progression (relative risk=1.22 to 4.63) except at the medial tibial and inferior patellar sites. Lateral tibial and superior patellar BMLs present on T2, T1, and both sequences predicted site-specific cartilage volume loss (β= -174.77 to -140.67). BMLs present on T2, T1, and both sequences were strongly associated with incident TKR.

Conclusions. Subchondral BMLs were commonly detected on both T1- and T2 MRIs. They were associated with clinical outcomes including symptoms, cartilage damage and loss, suggesting that either MRI sequence could be used to measure BMLs.

P47
PATELLAR TENDON ENTHESIS ABNORMALITIES AND THEIR ASSOCIATION WITH KNEE PAIN AND STRUCTURAL ABNORMALITIES IN OLDER ADULTS

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Aims. To describe the associations of patellar tendon enthesis (PTE) abnormalities visible on magnetic resonance (MR) images; and knee pain, physical function limitations, and osteoarthritic structural abnormalities cross-sectionally and longitudinally over 10.7 years.

Methods. PTE abnormalities were defined as presence of abnormal bone signal and/or bone erosion. They were measured on T2-weighted fat suppressed fast spin echo MR images at baseline in 961 community-dwelling older adults and followed for 10.7 years. Knee pain and physical function limitation score were assessed using WOMAC. Bone marrow lesions (BMLs), cartilage volume and defects, tibial bone area, and infrapatellar fat pad (IPFP) area were assessed using validated methods. Associations were assessed using hurdle, log binomial, linear, and mixed models, after adjusting for confounders.

Results. 20% of participants had bone signal and/or erosion at PTE. Cross-sectionally, presence of PTE abnormalities were associated with greater intensity of pain while going up and down stairs (β=0.22 (95% CI; 0.03, 0.41)), greater risk of having a femoral BML (RR=1.46 (1.22, 1.90)), greater lateral tibial bone area (β =25.95 (1.00, 50.91)), smaller IPFP area (β =-0.26 (-0.46, -0.05)), and a worse tibial cartilage defects cross sectionally (RR=1.70 (1.16, 2.47)), after adjustment of demographic and structural confounders. Longitudinally, presence of PTE abnormalities at baseline predicted an increased risk of deleterious changes in tibial BML size (RR=1.52 (1.12, 2.05)) but not knee pain, function limitation, and other structural changes over 10.7 years.

Conclusions. Patellar tendon enthesis abnormalities are common in the elderly. The presence of cross-sectional but not longitudinal associations suggests they commonly co-exist with other knee structural abnormalities, but that they are not be a major player in symptom development or structural changes, excepting tibial BMLs.

P48
ASSOCIATION BETWEEN JOINT LAXITY AND DISEASE SEVERITY IN TRAPEZIOMETACARPAL OSTEOARTHRITIS

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Aim. Increased joint laxity and radial subluxation of the thumb metacarpal base has been shown to be a risk factor for the development of trapeziometacarpal osteoarthritis. Despite this, it is unknown whether joint laxity changes with disease progression from mild to severe osteoarthritis. This study aimed to investigate the relationship between the trapeziometacarpal subluxation ratio and osteoarthritis severity.

Methods. Baseline data was used from the first 100 participants included in the COMBO trial. All participants had bilateral posteroanterior and Eaton stress view radiographs, and grip and tip-pinch strength measurements. The stress view was used for joint subluxation ratios, and the posteroanterior view was used for Kellgren-Lawrence grades (KLG) and Eaton grades.

Results. Lower radial subluxation ratios were associated with higher KLG (B-coefficient -0.302, p-value 0.027), and lower grip strength (B-coefficient 2.06, p-value 0.006). No statistically significant relationships were identified between subluxation ratios and the Eaton score or tip-pinch strength.

Conclusion. Radial subluxation ratios decreased with increasing disease severity, contrary to the progression from a normal joint to one with mild osteoarthritis, wherein higher joint laxity is a risk factor for disease. This is potentially explained by the mechanical stabilization provided by osteophytes and capsular changes in worsening osteoarthritis, as has been shown to be the case in the knee, as well as the possibility that higher pain levels and decreased thumb abduction force limited the extent to which participants with severe disease could produce joint subluxation on a stress view radiograph. Care should therefore be exercised in studies of radiographic trapeziometacarpal osteoarthritis that use a reduction in subluxation as an indicator of the success of an intervention such as surgery or splinting. The natural history of the disease seems to be reduced subluxation with greater osteoarthritis severity, and decreased subluxation on a stress view may not reflect improved joint stability.

P49
EPIDURAL STEROID INJECTION FOR TREATMENT OF LOW BACK PAIN IN THE ELDERLY: A RETROSPECTIVE AUDIT OF SAFETY AND EFFICACY

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Introduction. Low back pain (LBP) is the most common cause of pain and disability in older adults. Treatment is often difficult as co-morbidities, reduced functional status, and polypharmacy can limit exercise participation, analgesic options, and suitability for surgery. Epidural steroid injections (ESI) were once commonly performed for LBP treatment, but their use has declined due to concerns about efficacy and safety. We examined the impact of ESI for LBP in elderly patients.

Methods. A retrospective audit was conducted of ESI performed for LBP in patients aged ≥80 years at the Royal Melbourne Hospital, from 1/01/2004 to 31/12/2014. Cases were identified using ICD-10 codes and patient records were reviewed for the subsequent 12 months for efficacy and complications. Patient details were linked to Stata admission data held by the Department of Health and Human Services (DHHS) to identify admissions to other hospitals. Complications were graded using the Incident Severity Rating (ISR) scale.

Results. A total of 117 ESI were performed in 87 patients. Median age was 82 (range 80-94) and 67.8% were female. 57% of ESI performed for spinal canal stenosis or lumbar radiculopathy reported an improvement in pain. Median duration of symptomatic improvement was 3.39 (SD 2.96) months. Thirteen potential complications were identified. Eleven occurred within 24 hours post-procedure and included hypertension(n=3), hyperglycaemia(n=1), and fall without injury(n=2). Two cases reported transient increase in pain in the first 6 weeks post-procedure. There were no unplanned admissions and all complications were mild (ISR 3-4, meaning no or mild harm). No long-term complications attributable to ESI were observed.

Conclusion. The study findings demonstrate that ESI is a relatively safe treatment option in elderly patients that can provide several months of modest pain relief for lumbar radiculopathy and spinal canal stenosis. These results should be validated in a randomised clinical trial.

P50
FOOT ORTHOSES AND FOOTWEAR IN INDIVIDUALS WITH PATELLOFEMORAL OSTEOARTHRITIS: A PILOT RANDOMISED TRIAL

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Aims. This phase II pilot study aimed to determine the feasibility of a full-scale randomised controlled trial (RCT) to determine whether foot orthoses and footwear were superior to footwear alone, in improving pain in people with patellofemoral osteoarthritis (PFOA).

Methods. Forty-six people with PFOA were randomized into one of two groups: (i) foot orthoses plus prescribed footwear (n=24); or (ii) prescribed footwear only (n=22). Participants completed patient-reported outcomes to assess pain at baseline and four months. Study feasibility was the primary outcome (e.g. recruitment rate, adherence, adverse events, drop-out rate). Secondary outcomes included change in pain at four months (primary end point). Treatment effect sizes and 95% confidence intervals were calculated for secondary outcome measures to compare between-group change at four months.

Results. Of 782 people who volunteered, 46 were eligible (6%) and 44 (5.6%) enrolled in the study. Five participants (11%) were lost to follow-up. Intervention adherence was high for both groups (9-10 hours wear per day). No serious adverse events were reported. More than 80% of all questionnaires were completed at the primary end point. Both groups reported a large within-group treatment effect for average and worst pain rated on a visual analogue scale (foot orthoses + footwear: d = 0.98, [-1.6 - -0.35], 1.11, [-1.75 - -0,48]; footwear only: d = 0.70, [-1.36 - -0.05], 0.83, [-1.49 - -0.17]). Using a between-group effect size of 0.04 (for average pain) to estimate sample size, 2312 people would be required for a full-scale RCT.

Conclusion. A full-scale RCT for PFOA is feasible, but due to the lack of between-group differences and large within-group effect sizes for both interventions, these findings indicate no full-scale trial is likely to find a clinically meaningful difference. Recruitment rates may be enhanced by less strict inclusion criteria.

P51
A CASE SERIES OF PATIENTS WITH RHEUMATOID ARTHRITIS EXPOSED TO TOCILIZUMAB DURING PREGNANCY

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Introduction. Current BSR and BHPR guidelines on prescribing drugs in pregnancy and breastfeeding state that tocilizumab should be ceased at least 3 months before conception, but unintentional exposure early in the first trimester is unlikely to be harmful. There is insufficient data to support the use of tocilizumab in breastfeeding.

Case Series. We present three pregnancies in three women who were exposed to tocilizumab during the first trimester of pregnancy. All patients

had active rheumatoid arthritis prior to starting treatment with intravenous tocilizumab. Successful treatment with tocilizumab allowed pregnancy in two patients, while one patient had unplanned pregnancy. Two patients had failed TNF inhibitors in the early phase of their disease. One patient was managed with tocilizumab as their initial treatment, following failure of treatment with synthetic DMARDs. When pregnancy was confirmed, tocilizumab therapy was ceased as soon as possible in all patients. One patient required low dose steroid during pregnancy. Two patients underwent Caesarian section and one had normal delivery. All three pregnancies had uncomplicated postpartum periods and all delivered full term infants with no adverse outcomes at 30 days. All patients resumed IV tocilizumab whilst breast feeding, and have remained on tocilizumab monotherapy. There were no subsequent adverse outcomes reported in the newborns at one year.

Conclusion. Tocilizumab exposure had a favourable risk-benefit profile in our three patients, with no adverse maternal and fetal outcomes during pregnancy and lactation. This case series further supports the safety of tocilizumab as an alternative treatment in pregnant patients with rheumatoid arthritis, as reported in previous case series and the tocilizumab safety database.

P52
NORMALISED TOXICITY TO PREGABALIN DID NOT INCREASE WITH CHANGES IN APPROVAL MECHANISM AND USE IN AUSTRALIA

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Aim. A change in authorisation for pregabalin through the Pharmaceutical Benefits Scheme (PBS) Streamline authority in March 2013 was associated with increased usage. It has been suggested that this has led to increased off-label use, therapeutic misuse and adverse drug reaction (ADR) rates. We sought to determine whether any such change was disproportionate to usage.

Method. We extracted pregabalin-associated ADRs reported in the TGA Database of Adverse Event Notifications (DAEN) between 1st January 2009 and 18th October 2017, and calls to the Victorian Poisons Information Centre (VPIC) between 1st January 2009 and 31st December 2017 involving pregabalin. ADR rates were annualised, with DAEN ADR reports after 19th October 2017 imputed using year-to-date ADR rates. The annual ADR rates were normalised by dividing by the estimated number of pregabalin prescriptions filled, to obtain a Toxicity Index (ADRs per million scripts).

Result. The estimated number of pregabalin prescriptions filled in Australia increased over the study period from 155,336 in 2009 to 3,739,421 in 2017. 886 ADRs were reported to VPIC, and 1056 reported to DAEN (1076 after extrapolation). The mean Toxicity Index (TI) for VPIC database was 539 ADRs/million scripts before PBS streamlined listing, and 298 ADRs/million scripts after; with no evidence that TI had increased ($p = 0.9$, one-tail t-test). Similarly, the TI calculated on the DAEN database did not increase after streamlined listing ($p = 0.98$, one-tail t-test), with 441 ADRs/million scripts before and 85 ADRs/million scripts after.

Conclusions. After adjusting for the total volume of scripts dispensed, the rate of ADRs involving pregabalin did not increase after the method of PBS authority approval was changed. These data do not support the emergence of undue adverse drug reactions from increased off-label use of pregabalin.

P53
HOSPITAL ADMISSION RATES AND OUTCOME FOR IgA VASCULITIS IN CHILDREN AND ADULTS IN WESTERN AUSTRALIA

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Objectives. Immunoglobulin A vasculitis (IgAV), formerly called Henoch-Schönlein purpura, is a necrotizing small-vessel vasculitis . More common in children, IgAV is not unusual in adults, where it has been associated with worse outcomes. We compared rates and outcomes for hospital admission between adult and pediatric inpatients with IgAV.

Methods. Data were extracted from a state-wide registry for all hospital admissions in Western Australia (WA) between 1980 to 2015 for patients with a primary or secondary diagnosis of IgAV (ICD-9-CM code 287.0/ICD-10-AM code D69.0). Pediatric cases were defined as those ≤ 19 yrs at first diagnosis.

Results. Of 764 patients admitted to hospital, IgAV was the primary diagnosis in 91.1 % of pediatric (n= 508) and in 48 % of adult cases (n=256) ($p<0.01$). Age at primary diagnosis was 5.6 yrs of age in children versus 50.2 yrs in adults. Both groups had similar proportions of Indigenous (3.5 vs 1.6 %, $p=0.4$) and male patients (59 vs 51.2%, $p=0.3$). Over time, annual rates/100.000 for a first admission for IgAV declined from 4.2 to 0.4 for children and from 0.42 to 0.2 for adults, while length of stay decreased from 5.8 to 1.8 days for children and increased from 10.5 to 21.1 for adults. Three adults (2.4%) but no child required ICU admission. One adult (0.7%) and no child died in hospital. Readmission rates for IgAV were slightly higher in children than adults (25.6% vs 18.7%, $p=0.1$).

Conclusions. Admission rates for IgAV in children in WA have declined steeply over the last decades and now almost equate admission rates for adults. Reduced length of stay and lack of mortality in children support the willingness (or necessity) to manage children with IgAV outside the hospital setting. In adults, IgAV associates with prolonged admissions and a slight risk of ICU admission and hospital death.

P54
A NATIONAL CLINICAL AUDIT OF EARLY ARTHRITIS MANAGEMENT: DRIVING EQUALITY IN HEALTHCARE

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Aims. Trial data indicate improved outcomes with timely diagnosis and treatment in early inflammatory arthritis (EIA). UK National guidelines state that patients with suspected EIA are reviewed within three weeks of referral to a rheumatologist. Many service providers have dedicated EIA clinics to meet guidelines. There is marked variation in uptake of the EIA clinic model, and in outcomes. We present data from a National Clinical Audit (NCA) to assess impact of EIA clinics and early review.

Methods. The NCA was conducted to assess EIA care in England and Wales. All NHS providers were required to participate. Follow up data were captured over 3 months. Trust and patient level variables were collected. Patients with a confirmed diagnosis of EIA were included. The time from first presentation with symptoms to rheumatology referral (referral time), and from receipt of referral to first rheumatology clinic visit (rheumatology clinic review time) were calculated. The analysis assessed the relationship between EIA clinic availability and referral times, and subsequent association with disease activity (DAS-28) response. We examined potential confounding influences of Trust and patient level characteristics through regression modelling.

Results. Of 146 eligible sites, 137 provided data. 7340 patients were diagnosed with EIA. 7313 were seen at Trusts that provided EIA clinic information, and 5622 were ultimately diagnosed with RA. 77/137 (56%) Trusts offered an EIA clinic, and had significantly shorter referral and rheumatology clinic review times, maintained after adjustment. Rheumatologist review within 3 weeks of referral was positively associated with achieving a good EULAR DAS-28 response [adjusted odds ratio of 1.30 (CI 1.06 to 1.60)].

Conclusions. EIA clinics associated with both quicker referral from primary care, and more rapid review in secondary care. Consistent with randomised controlled trials, rapid review predicted better outcomes.

P55
RHEUMATOLOGY TRANSITION. A COORDINATED APPROACH

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Background. Both paediatric and adult rheumatology services are available on the John Hunter Hospital campus, but operate independently and are located at opposite ends of the hospital. This presented an opportunity to develop an evidenced based, coordinated program to assist patients transitioning.

Aim.

- To set up a dedicated clinic for adolescents and young adults with rheumatic disease.
- To develop a specialised rheumatology package for patients requiring transition from paediatric to adult health services.

Method. Patients are identified from age 13 to attend the new AYARD (adolescent and young adult with rheumatic disease) clinic. The new clinic was introduced 12 months ago and is attended by both adult and paediatric rheumatology medical and nursing staff. After a systematic qualitative study and review of the literature, a rheumatology specific transition program was developed.

Results.

- Feedback from an exploratory survey of 11 patients and 12 parents/carers who had attended the new AYARD clinic, demonstrated positive support for the clinic.
- Implementation of the new transition program will commence in 2018. New resources include; a transition pathway, information booklet, skills assessments, clinician checklists and transition plan. The new program will be presented.

Conclusion. Paediatric and adult rheumatology services at one location allowed a coordinated approach to transition, through a dedicated clinic and rheumatology specific transition program.

P56
THE USE OF DIAGNOSTIC TESTING AND IMAGING FOR LOW BACK PAIN PRESENTATIONS IN A PRIVATE HOSPITAL EMERGENCY DEPARTMENT

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Aims. Our aim was to describe the characteristics of patients presenting with a primary complaint of low back pain (LBP) to the emergency department (ED) at Cabrini Health, a private not-for-profit facility, and to describe the investigations and pharmacological treatment they received. We also compared the characteristics and management of those admitted to hospital with those discharged from ED.

Methods. This was a retrospective review of ED presentations for acute LBP in 2015. Episodes with a presenting complaint of LBP or back pain (BP) were selected from the Patient Administration System. Records of pathology tests, pharmacy requests and spinal imaging ordered while in the ED were also extracted. Patient demographic and clinical characteristics, diagnostic tests and pain medication were summarised. Differences between admitted and discharged patients were assessed using parametric or non-parametric test as appropriate.

Results. A total of 461 patients (59.4% female) was included. 238 (51.6%) were admitted to hospital. Admitted patients were older (median age 77.5 years vs 56 years, $p<0.001$) and spent more time in the ED (6.3 hours vs 3.9 hours, $p<0.001$). There was no significant difference in triage scores for the two groups. Lumbar spine imaging was requested for 26.3% (12.6% discharged vs 39% admitted, $p<0.001$), over 60% (38.6% discharged vs 82.9% admitted, $p<0.001$) had at least one laboratory test of interest and 85% (75.3% discharged vs 93.7 admitted, $p<0.001$) received pain medication.

Conclusions. In this population there were high rates of imaging, pathology testing and hospital admission. Without further clinical information it is unclear whether these rates were appropriate in the ED setting and whether our ED population differs from patients presenting to primary care. Further research should explore whether specific ED guidelines for management of LBP are needed.

P57
EVALUATION OF A 'SHARED CARE LETTER' FOR USE OF LOW-DOSE METHOTREXATE FROM RHEUMATOLOGISTS TO GENERAL PRACTITIONERS (SHACLE-M)

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Aims. To evaluate the impact of the introduction of a 'shared care letter' for the use of low-dose methotrexate for treatment of rheumatological diseases sent from Rheumatologists to referring General Practitioners.

Methods. Qualitative survey. A 'shared care letter' for the use of low-dose methotrexate for rheumatological diseases was attached to outpatient clinic letters for patients prescribed methotrexate over a three-month period and sent to the referring General Practitioners. After the first 100 "shared care letters" had been sent, all recipient General Practitioners were asked to complete survey that asked: did they receive the letter; did they read it; did they find it useful; did it impact patient care; what do they feel could be done to improve it.

Results. Results are expected by February 2018, and will be reported as response rate, percentage of subjects replying yes/no with p-values where relevant, and a table summarising qualitative responses.

Conclusion. This study is expected to make conclusions regarding the effectiveness of implementing a shared care letter for use of methotrexate for rheumatological disease, acceptability and use by GPs, impact on patient care, suggestions for improvement, and possible broader use of this model of care within rheumatology for other DMARDs/biologic therapies and in other fields of medicine and healthcare.

P58
UNDERSTANDING GENERAL PRACTITIONER AND PATIENT PERSPECTIVES AND EXPECTATIONS OF LUMBAR SPINE DIAGNOSTIC IMAGING REQUESTS AND REPORTS IN PEOPLE WITH ACUTE LOW BACK PAIN: A QUALITATIVE STUDY

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Aims. Diagnostic imaging is over-used for people with acute low back pain (ALBP) presenting to general practitioners (GPs) in Australia. Strategies to address over-use of imaging have been largely unsuccessful. Novel strategies, and new research knowledge to inform their development, are needed to address this problem. This study aims to explore the perspectives, expectations and information needs of GPs and patients when requesting diagnostic imaging for ALBP, including in relation to the imaging request and the imaging report. Modifying the way in which imaging is requested and reported could discourage unnecessary imaging.

Methods. Semi-structured qualitative interviews were conducted with Victorian GPs and patients with ALBP. Interviews were audio recorded

and transcribed verbatim. Interview transcriptions were analysed using inductive content analysis.

Results. 15 participants (12 GPs, 3 patients) have been interviewed to date. Preliminary analysis demonstrates the majority of GPs request imaging to reassure themselves and their patients of the absence of sinister pathology. Some GPs expected descriptions of anatomy, alignment and pathology in the imaging report, which they said assisted with decision-making. Most GPs wanted greater clarity and consistency of imaging reporting, and reported that inclusion of data about the prevalence of common findings in people without back pain would aid interpretation. All patients sought reassurance from imaging and believed imaging was necessary to inform the GPs' management decisions.

Conclusions. Results from this study suggest that imaging requests and reports could be improved in ALBP. The inclusion of epidemiological prevalence data was acceptable to GPs and may improve interpretation of findings and reduce unnecessary imaging. The way in which epidemiological data is presented in reports, together with attempts to improve clarity and consistency, should be further explored. Interviews are continuing to data saturation and final results will be presented.

P59
STRAIN COUNTER STRAIN TECHNIQUE VERSUS KINESIO TAPE IN TREATING PATIENTS WITH MYOFASCIAL NECK PAIN SYNDROME

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Purpose. The purpose of this study was to compare the effects of strain counter strain technique and kinesio tape on Myofascial neck pain syndrome.

Backgrounds/Significance. Myofascial pain syndrome is one of the most common complaints in clinical practice. Strain Counter Strain technique is non-invasive therapeutic modality for treatment of soft tissue disorders. Kinesio tape is now widely used in management of musculoskeletal injuries.

Subjects. Forty five patients with myofascial neck pain syndrome assigned randomly into: strain counter stain technique group (n=15), kinesio tape group (n=15) and control group (n=15).

Methods and Materials. The strain counter stain technique was applied for two weeks (3 sessions/ week-20 minutes per session). kinesio tape was applied for upper Trapezius muscle for two weeks (3days on and one day off). Pressure algometry, Visual analogue scale (VAS) and Neck disability index (NDI) were used to evaluate participants before and after the corresponding interventions.

Analyses. Analysis of variance test (ANOVA) was used to determine differences between groups for all measured parameters. Paired t-test was used to compare between the pre- and post-treatment values within groups.

Results. For the 45 study participants (33 women and 12 men; mean age=44.1±7 years) statistical analysis revealed that Subjects in strain counter strain technique and kinesio tape groups experienced significant increase in pressure pain threshold, decrease in neck disability scale and pain level than those in the control group in favor of strain counter strain technique group ($p>0.05$)

Conclusions. The results suggest that treatment with strain counter strain technique and kinseo tape were effective however strain counter strain technique was more effective for management of myofascial neck pain syndrome.

P60
EFFECT OF SELECTED OSTEOPATHIC LYMPHATIC TECHNIQUES ON IMMUNE SYSTEM IN HEALTHY SUBJECTS

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Purpose. This study was designed to investigate the Effect of selected osteopathic lymphatic techniques on immune system in healthy subjects.

Method. Forty five subjects (33 males and 12 females), with age ranged from 20 to 30 years old participated in this study. They were assigned into three equal groups each one has 15 subjects: group A received sternal pump and sternal recoil techniques for 12 sessions, three sessions per week. Group B received thoracic lymphatic pump and splenic pump techniques for 12 sessions, three sessions per week. Group C (control group) did not receive any physical therapy modality. Absolute count of CD4 and WBCs count were used to evaluate participants before and after application of the osteopathic techniques, and for subjects in the control group before and after one month.

Results. Statistical analysis revealed that there was a significant increase in CD4 P value was ≤ 0.045 and WBCs count P-value was ≤ 0.006 between before and after treatment with the second group in the two experimental groups. While there was no significant difference in the same measuring variables in the first and control groups. Comparison between groups revealed that there was a significant difference between the first and second groups in CD4 and WBCs, P: probability< 0.05.

Conclusion. The second osteopathic manipulative treatment group was the effective method of enhancing the immune system in healthy subjects (thoracic lymphatic pump (TLPT) and splenic pump techniques (SPT).

Key words. Osteopathy, CD4, Thoracic lymphatic pump, splenic pump technique, Sternal pump technique and Sternal recoil technique.

P61
EFFECT OF KINESIO TAPE IN MYOFASCIAL PAIN SYNDROME RANDOMIZED CONTROL TRIAL

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Backgrounds. Myofascial pain syndrome is one of the most common complaints in clinical practice. Kinesio tape is now widely used in management of musculoskeletal injuries.

Purpose. The purpose of this study was to compare the effect kinesio Tape technique on neck myofascial pain syndrome of upper trapezius muscle. Setting: the study was applied in outpatient clinic of faculty of physical therapy – Cairo University.

Subjects and Method. Thirty subjects with myofacial pain syndrome (14 males and 16 females), with age ranged from 20 to 50 years old participated in this study. They were assigned into two equal groups each one has 15 subjects: group A kinesio tape for 3 days. Group B (control group) did not receive any physical therapy modality, Patients were randomly assigned into 2 groups using the simple randomization in selection. An almost infinite number of methods can be used to generate a simple randomization sequence based on a random number from the table of numbers of patients and the take odd and even number for equal allocation. Pressure algometry, Neck disability index and Visual analogue scale were used to evaluate participants before and after application kinesio tape technique, and for patients in the control group before and after 3 days.

Results. Statistical analysis revealed that there was a significant increase in pressure pain threshold, decrease in pain level and function between before and after treatment with kinesio tape group with percentages of (46%, 40%, and 52%). while there was no significant difference in the same measuring variables in than control. Comparison between groups revealed that there was a significant difference between groups and between each groups in pressure pain threshold and visual analogue scale and neck disability index, P: probability< 0.05.

Conclusion. kinesio tape technique is effective method of treatment of neck myofascial pain syndrome.

P62
A SYSTEMATIC REVIEW OF THE UPPER LIMB SOFT TISSUE COMORBIDITIES IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Background. Soft tissue disorders affecting the upper limb are observed more frequently in patients with type 2 diabetes mellitus (T2DM) than the general population. This may result in poorer health outcomes in T2DM and increased health service related costs.

Aim. To determine the type and magnitude of upper limb soft tissue comorbidities in patients with T2DM.

Methods. A systematic literature review of MEDLINE and EMBASE databases was performed. Any study describing upper limb soft tissue

disease in patients with T2DM was included. Where the prevalence of a condition was available, the median and range was presented.

Results. 8035 manuscripts were identified. 36 articles were eligible for inclusion. We found that upper limb soft tissue disease is common in T2DM (median 32.1%, range 19-57.7%). The prevalence of any hand abnormality was higher in T2DM compared to controls (median 45% and 4.9% respectively). The median prevalence of limited hand mobility in T2DM was 26.7% (range 0-80%). Dupuytren's disease was more common in T2DM (median 18.8%, range 0-43.4%), than controls (median 8%, range 0-39%). Carpal tunnel syndrome was also more common in T2DM than controls, with a median prevalence of 14% (range 0.32-83.3%) and 3.1% (range 0-17.5%) respectively. The median prevalence of flexor tenosynovitis in T2DM was 7.2% (range 2-16.7%) compared to 2% (range 0-3.6%) in controls. The prevalence of any shoulder abnormality in T2DM was 19.5% compared to 4.4% in controls. Adhesive capsulitis in T2DM was more common (median 14.6%, range 7-29%), than in controls (median 2.5%, range 0.5-17%). The median prevalence of rotator cuff tendinitis in T2DM was higher (23.3% (range 9.5-43.3%)) compared to 8.7% (range 0.8-50%) in controls.

Conclusion. Upper limb soft tissue disease is more prevalent in patients with T2DM. These associations need to be further investigated and targeted in patients with T2DM to optimize health outcomes.

P63
THE EFFICACY OF CLASSICAL INDIAN YOGA IN THE TREATMENT OF FIBROMYALGIA: A RANDOMIZED CONTROLLED TRIAL

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Purpose. Fibromyalgia (FM) is a complex musculoskeletal disorder treated with multidisciplinary therapies. Classical Indian Yoga is an ancient life style healing technique which has an integrated mind-body approach to enhance both physical and mental health.

Methods. This study incorporated a 6 months, single-blind, randomized trial of Classical Indian Yoga (50 patients) versus attention control group (stretching and wellness education) of 50 patients for Fibromyalgia. The classical Yoga involved 60-minute group sessions thrice-weekly. The primary outcome measure was change in the FM Impact Questionnaire (FIQ) score at 1 year. Secondary outcome measures were tender point count, patient and physician global assessments, sleep quality (PSQI), 10-minute walk, timed chair stand, grip strength, depression and quality of life. These outcome measures were repeated at 1 year to test durability of response. Both groups were compared using an intent-to-treat analysis.

Results. Mean age of 100 patients was 55 years (SD 11), disease duration 10 years (SD 7) and BMI 30 kg/m2 (SD 8), 80 patients were females. Patients baseline expectations of benefit from an exercise intervention were similar: Classical Yoga =4.1 and the controls=4.3. After 6 months patients in the classical Yoga group had a significantly greater improvement in FIQ score: between-group change -20, 95% CI (-24.0 to -8.8); P= 0.0005). The Yoga group patients also had significant improvement in secondary outcome measures: reduction in pain scale (VAS), improved patient global assessment, physical function, depression, and health status. After 1 year patients compliant with the classical Yoga had sustained and durable benefits in FIQ score quality of sleep and quality of life. The two groups did not differ in medication usage. No adverse events were noted.

Conclusion. Classical Indian Yoga appears to be highly effective in the management of FM having a positive impact on physical, psychological and social aspects of FM.

P64
EVALUATION AND MANAGEMENT OF BACK PAIN ADMISSIONS TO HOSPITAL MEDICAL UNITS

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Aim. Hospital admissions for patients with back pain are increasing. Despite their significant contribution to the health-care burden they remain largely unstudied. This study aims to investigate the management and clinical outcomes of patients with acute back pain admitted to hospital under general medicine units when compared to a rheumatology unit.

Methods. A 36-month retrospective, observational study on patients presenting to the Emergency Department with back pain who were subsequently admitted to 1 of 3 General Medicine Units (GM) or a Rheumatology Unit (RU). Differences in patient demographics, management and clinical outcomes were assessed using Chi-Squared tests for categorical variables and Kruskall Wallis tests for continuous variables. Multivariate associations of two primary outcomes, length of stay (LOS) and complications were examined using generalised estimating equations.

Results. Data from 712 admissions from 594 patients across the 4 inpatient units were used for this study. Common discharge diagnoses were musculoskeletal/nonspecific back pain (41%), disc related illness (22%), crush fracture (14%) and sciatica (14%). Non-English speaking background, age ≥80 years, disc related disease, crush fracture and sciatica were statistically significantly associated with both increased LOS and complications. The presence of comorbidities was associated with more complications. GM admission was associated with a longer LOS and more complications than RU admission.

Conclusion. Multiple factors associated with an increased LOS and complications were identified, including older patients, patients of non-English speaking background. Given the observed variations in back pain management between general and specialty units, strategies to standardise care should be considered.

P65
FIBROMYALGIA TRIGGERED BY PSYCHOLOGICAL STRESS PRESENTS DIFFERENT CLINICAL PROFILE

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Aim. The onset of fibromyalgia is often triggered in situations of physical or psychological stress. We aimed to investigate the proportion of fibromyalgia patients reporting psychological stress triggers, and to compare their characteristics to those without reported psychological stress triggers in an Australian population.

Method. Consecutive fibromyalgia patients seen in the Monash Fibromyalgia Clinic were assessed using standard interview, examination and questionnaires.

Results. 719 patients were included (90.7% female, mean age 45.81 years, mean symptom duration 11.27 years). Of these, 72.3% reported an episode of significant emotional distress as a triggering factor at the onset of their illness. When compared to those patients who did not report this type of trigger, these patients had a higher number of associated central sensitivity conditions (eg. irritable bowel syndrome, migraine, temporomandibular joint disorder, multiple chemical sensitivities, etc) (p=0.000). They also had higher Fibromyalgia Impact Questionnaire (FIQ) scores (p=0.000), worse reported physical functioning (p=0.000), fatigue (p=0.004), anxiety (p=0.000), depression (p=0.000), Symptom Severity Score (SSS) (p=0.000) and Fibromyalgia Severity Scale (FSS) (p=0.005). A higher proportion of these patients were receiving pension support payments (43% vs 34.3% $p<0.05$). There was no significant difference between the groups in age, symptom duration, reported pain severity or level of sleep disturbance. When followed over time, those with psychological triggers had no significant difference in the change in FIQ and FSS measures when compared to those without.

Conclusion. Fibromyalgia patients with psychological triggers have a higher burden of central sensitivity symptoms other than pain, which is reflected in worse illness impact measures, including increased reliance on pension payments. It may be particularly important to target these patients early with psychological strategies to avert poorer outcomes.

P66
THORACIC SPINE PAIN – SYMPTOMS VS SCINTIGRAPHIC FINDINGS ON SINGLE PHOTON EMISSION COMPUTERIZED TOMOGRAPHY/COMPUTED TOMOGRAPHY (SPECT/CT) IN ADULTS

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Aim. To see if those with pain in the thoracic spine have increased scintigraphic uptake on SPECT/CT in the thoracic spine

Method. This was a prospective, observational study, where any consenting adult presenting for a bone scan completed a questionnaire followed

by an additional SPECT/CT of the thoracic spine. Patients were excluded if they had a known malignancy, previous spinal fracture or inflammatory spinal disorder. The primary outcome measure was a semi-quantitative score of scinitgraphic uptake in the thoracic spine.

Result. 26 participants have so far been enrolled in this ongoing study. Preliminary data indicates there is not difference in SPECT/CT uptake score in those with thoracic pain (38.6 +/- 10.8) compared to no thoracic pain (42.9 +/- 11.9), p = 0.826.

Conclusions. Preliminary data suggests that in this study, there was no difference in SPECT/CT uptake scores between patients with and without thoracic spinal pain.

P67
AUDIT ON THE INPATIENT DIAGNOSIS OF GOUT

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Aim. The aim of the study was to evaluate whether inpatients who had been diagnosed with gout met the 2015 American College of Rheumatology (ACR)/European League Against Rheumatism (EULAR) classification criteria for the diagnosis of gout.

Method. Data was collected from two tertiary hospitals in Perth, Western Australia. From each hospital 100 sequential inpatients were identified, who had been coded as per the International Statistical Classification of Diseases and Related Health Problems (ICD-10), as having a primary or secondary diagnosis of gout, or gout as a complication of the admission. Clinical and laboratory data was obtained from chart review to determine whether the diagnosis had been based on the demonstration of urate crystals in synovial fluid, or, if not, whether the patient met the 2015 ACR/EULAR clinical criteria for the diagnosis of gout (requiring a score of ≥8 out of 23).

Result. A total of 199 consecutive cases were reviewed. Gout was diagnosed based on a synovial fluid aspirate in 52 cases (26%). The other 147 cases (75%) either did not have a synovial fluid aspirate or the aspirate was negative. In these cases the diagnosis was made on clinical grounds. Only 70 of these 147 patients (49.2%) met the clinical criteria for the diagnosis of gout based upon the 2015 ACR/EULAR criteria.

Conclusions. The inpatient diagnosis of gout is predominantly clinical. However almost half of the clinically diagnosed cases did not meet the 2015 ACR/EULAR criteria for the diagnosis of gout. An incorrect diagnosis of gout has potential adverse consequences related to misdiagnosis and inappropriate treatment. This study would suggest that there is a need to improve the clinical diagnosis of gout in the inpatient population.

P68
REVIEW OF GOUT CLINIC IN A TERTIARY HOSPITAL SETTING

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Aim. To review outcomes of a monthly specialised Gout Clinic at a tertiary hospital.

Methods. Structured case note review of consecutive patients at The Queen Elizabeth Hospital Gout Clinic (November 2014 to September 2017) with the diagnosis of gout based on ACR criteria. The review included patient demographics, serum urate levels and gout treatment. Approval was obtained from the Central Adelaide Local Health Network Human Research Ethics Committee.

Results. Of 59 case notes reviewed, 54 were included (2 failed to attend, 3 admitted). Mean age was 67 years (range 29-92), 87% were male, and most had at least one co-morbidity. The source of referrals was inpatient, including other specialities (63%), and GP referral (37%). Mean baseline serum urate level was 0.50 mmol/L (0.31-0.69). At referral, 60% of patients were on urate lowering therapy (ULT), and 18% of those on ULT were taking prophylaxis against acute gout flares. Sixty-five per cent of patients reached target serum urate levels at or below 0.36 mmol/L by 52 weeks (competing risks analysis). The quarterly average serum urate level reduction was 0.12 mmol/L in patients attending the clinic at monthly intervals, compared with 0.03 mmol/L in patients seen every 3 months (random intercept/slope regression). Patients aged 70 and older required lower doses of ULT to achieve target, with females more likely to reach target (negative binomial regression). Twenty-five per cent of patients were discharged from the clinic at target by the end of the study period with no subsequent admissions nor emergency presentations with gout.

Conclusion. In addition to more rapid achievement of target serum urate levels and control of gout, the structured gout clinic provides an educative role for patients, general practitioners, medical students, junior doctors, rheumatology registrars, nurses, and pharmacists, and enables research into this common but often neglected disease.

P69
ACUTE GOUT IN HOSPITAL: AN AUDIT OF MANAGEMENT IN A NSW TERTIARY CARE HOSPITAL

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Background. Gout is a curable and preventable disease, yet treatment is inconsistent and often inadequate. In 2015-2016 there were over seven thousand hospitalizations with a principal diagnosis of gout (27 per 100,000 population). An even higher proportion had incident gout during admission.

Methods. We retrospectively analysed 98 patients admitted to a tertiary level hospital in NSW with a diagnosis of acute gout. This was based on both documentation of acute gout on medical records and crystal analysis data from the laboratory. We collected data such as age, sex, comorbidities, uric acid level and compared our management against established guidelines.

Results. Our cohort consisted of 80 (82%) males with the average age 73 years (range 34-94). 15 of the 98 patients were admitted under the Rheumatology service. Metabolic syndrome was common with 27 (28%) diabetes, 53 (54%) hypercholesterolemia, 71 (72%) hypertension. 32% were on allopurinol on admission, Uric acid level was sent for 70 patients (70%) and average first level was 0.5 mmol/L. Gout was confirmed with crystal analysis in 38 patients. Time to commencement of acute attack treatment was 0.8 days. Colchicine was given in 52 (53%) cases, non-steroidal anti-inflammatory in 24 (24%), oral corticosteroids in 51 (52%) with total cumulative dose of 72 mg (20mg– 870mg). Only half of patients were commenced on allopurinol on discharge and only 18 patients had education, and only 4 patients had target serum uric acid documented on correspondence to general practitioners.

Conclusions. Management of acute gout in our cohort was variable and differed from established guidelines. Specific areas for improvement include need for education about guidelines to those involved in the care of gout patients.

P70
Abstract Withdrawn.

P71
SOLUBLE ERYTHROPOIETIN RECEPTOR LEVELS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Objective. The erythropoietin receptor (EpoR) stimulates erythrocyte proliferation after Erythropoeitin binding. EpoR belongs to the cytokine receptor superfamily and is also found on macrophages and endothelial cells, which play a role in systemic autoimmune diseases. As there are no data on EPOR we studied soluble EpoR (sEpoR) in patients with Systemic Lupus Erythematosus (SLE) across clinical characteristics including anaemia, immunological biomarkers, disease activity and severity in SLE patients.

Material and Method. In a cross-sectional study, we recorded clinical characteristics, medications, disease activity (SLEDAI-2K) and organ damage (SDI) in 101 SLE patients. sEpoR, autoantibodies and cytokines were measured by ELISA while a Rheumatoid Arthritis (RA) cohort and healthy controls (HC) served as comparators. Data were analysed with nonparametric techniques.

Results. There was no significant difference in sEpoR levels across the SLE, RA and HC groups. In both cohorts sEpoR levels were similar in anaemic (6% of SLE and 31% of RA) and non-anaemic patients. sEpoR levels were unrelated to haemoglobin levels, SLEDAI-2K or SDI scores, but in both cohorts correlated with acute phase reactants (CRP, Rs. 0.28, p=0.007) and a range of proinflammatory cytokines.

Conclusion. Soluble EpoR levels are not associated with Epo resistance or ACD in SLE and RA patients, but closely mirror the underlying inflammatory process. This suggests that increased shedding of EpoR during inflammation occurs at other sites than bone marrow.

P72
HISTOLOGICAL AND SEROLOGICAL DIFFERENCES BETWEEN INDIGENOUS AND NON-INDIGENOUS PATIENTS WITH LUPUS NEPHRITIS MAY CONTRIBUTE TO DIVERGENT OUTCOMES

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Objectives. Outcomes for Indigenous Australians (IA) with Lupus Nephritis (LN) are worse than for other ethnic groups. We investigated whether histological findings could explain this discrepancy.

Methods. A single centre cohort study of 83 SLE patients undergoing a first renal biopsy. Histological evaluation included ISN classification, A/AC/C sub classification, NIH tubulointerstitial activity and chronicity indices, tubulointerstitial index, semiquantitative scores for Iimmune deposits, localization of electron dense deposits (EDD) and presence of thrombosis, vasculitis and tubuloreticular inclusions (TRI) . Comparisons between IA patients (n=11) and pooled data from Asian (n=29) and Caucasian (n=43) were through non-parametric statistical methods.

Results. IA patients were younger at diagnosis (31 vs 38.5 yrs., 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 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 non-survivors (27 vs 6%, p=0.01) and patients developing ESRD (18 vs 3%, p=0.02).

Conclusions. IA patients presented fewer glomeruli, an increased frequency of mesangial proliferation and no cellular crescents or isolated membranopathy. Although based on small numbers, this suggests that lower nephron mass and immunological pathways involving IFN-inducible SSA expression may contribute to LN development and worse renal outcome in IA.

P73
IMPACT OF ETHNICITY ON HISTOLOGY AND OUTCOME OF LUPUS NEPHRITIS IN WESTERN AUSTRALIA

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Background. Continuous demographic change and new mechanistic insights and treatment options necessitate regular updating of knowledge of Lupus Nephritis (LN). We investigated the current relevance of clinical and histological characteristics as outcome predictors for LN.

Methods. A retrospective single-center cohort study of all SLE patients undergoing a first renal biopsy between 1997-2017 at a metropolitan hospital in Western Australia (750.000 catchment area). Clinical and treatment data were collected at baseline and last follow-up and histological findings were re-evaluated. Kaplan Meier survival estimates (average follow-up 95 months) were analyzed by log-rank test.

Results. We included 90 SLE patients (age 31.5 yrs, 88% female, 0.3 yrs since diagnosis) of Caucasian (n=43), Asian (n=29), Aboriginal (n=11) and other ethnicity (n= 7, mainly SubSaharan Africans). The annual LN incidence was 0.6/100.000. All ethnic subgroups showed similar rates for renal and nonrenal SLEDAI (median 4), proteinuria (median PCR 300 mg/mmol), raised serum creatinine (31% overall), anti-dsDNA Ab (89%), hypocomplementemia (88%). Proliferative (Class III/IV: 66%) or membranous (Class V:19%) lesions and Corticosteroid (86 %), immunosuppressant (87% overall) and antihypertensive use (69%) (all p>0.2). Patient 5 and 10 and ten year survival was similar for Asian and Caucasian patients (95 %) and worst in Aborigines (81 % and 70%) (p=0.016) with no impact of gender, ISN class or PCR>300. Renal 5 and 10-year survival (endpoint dialysis) was 100 % for Asian, 100 and 96% for Caucasian vs 86% and 64% for Aborigines (p=0.02). PCR >350 (p=0.03) but not gender, increased baseline creatinin, ISN class, A/AC/C subclass or full house IF predicted worse renal survival.

Conclusions. LN incidence in WA is comparable with Europe. Asian and Caucasian patients in WA now have equally good renal and patient outcomes. The grim outlook for Indigenous patients deserves further detailed study.

P74
THE ROLE OF INFLAMMATORY MARKERS IN ASSESSMENT OF DISEASE ACTIVITY IN SYSTEMIC SCLEROSIS

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Aims. The pathogenesis of systemic sclerosis (SSc) includes fibrosis, vasculopathy and inflammation; hence the role of inflammatory markers in measurement of disease activity remains controversial. We evaluated the relationship between clinical features of SSc and raised erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) to determine if increased inflammatory markers correlate with features of disease activity.

Methods. Patients enrolled in the Australian Scleroderma Cohort Study who fulfilled 2013 ACR/EULAR criteria for diagnosis of SSc were included. Generalized estimating equations were used to determine the relationship between ESR≥20mm/hr and CRP≥5mg/L and clinical features of disease.

Results. There were 1,545 patients included in this study who were followed for a mean (SD) 3.52±2.91 years and a total of 6,119 study visits. Approximately half of the patients recorded elevated inflammatory markers on at least one occasion. Multivariable analysis showed that raised ESR was associated with fibrotic lung disease, indicated by reduced forced vital capacity (FVC)<80% (OR 1.34 p=0.004), and pulmonary arterial hypertension (PAH), diagnosed on right heart catheter (OR 1.89 p=0.003) and diffusing capacity of the lung (DLCO)<80% (OR 1.53 p<0.001). Proximal muscle weakness was also correlated with raised ESR (OR 0.67 p<0.001). Multivariable analysis of the clinical associations with raised CRP showed that respiratory involvement indicated by FVC<80% (OR 1.42 p=0.001) and DLCO<80% (OR 1.38 p=0.001), as well as cutaneous and articular manifestations of disease (mRSS>20 OR 2.00 p<0.001, synovitis OR 1.22 p=0.045, tendon friction rub OR 2.13 p<0.001) were associated with raised CRP.

Conclusion. Elevated ESR and CRP are associated with fibrotic and vasculopathic as well as inflammatory manifestations of disease. The association of inflammatory markers with cutaneous, respiratory and musculoskeletal features suggests ESR and CRP have a role in the assessment of SSc disease activity.

P75
SERUM BAFF IN ASIAN INDIAN PATIENTS WITH IDIOPATHIC INFLAMMATORY MYOSITIS : NOVEL CLINICO-PHENOTYPIC ASSOCIATIONS IN CHILDREN AND ADULTS

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Background/Purpose. We studied the sera levels of B-cell survival-factors BAFF and APRIL in patients with Idiopathic Inflammatory Myositis (IIM) and their relation with clinical and autoantibodies.

Methods. Seventy-five patients (51 females and 24 males) with IIM (Bohan and Peter's criteria 1975) and 25 healthy adults were analyzed for BAFF, APRIL and IL-17 by ELISA and myositis specific and associated antibodies using line immunoblot assay

Results. Of 75 patients, 59 were adults, 42 had DM and 17 PM. Median disease duration was 5 (3-12) months. BAFF levels were higher in IIM than healthy controls [p=0.001], and in children with jDM than adults [p=0.026]. BAFF levels were higher in adults with arthritis [p=0.018], weight-loss [p=0.007], and PAH [p=0.004]. Lower levels were associated with functional class 4 than class 2 or 3 [p=0.01] and bulbar weakness [p=0.103]. Among the various MSAs, lowest levels were seen in those with anti-SRP [p=0.043]. Median follow-up duration was 145 patient years. 12 patients relapsed while 9 were in drug free remission. BAFF were similar between these groups. Serum APRIL levels were higher in IIM than healthy controls [p=0.0001] but levels didn't differ amongst the clinico-serologic phenotypes. IL-17 levels were higher in individuals positive for anti-SRP [p=0.028] and exhibited trends to inverse correlation with BAFF (r=-0.3, CI -0.5 to -0.02, p=0.06).

Conclusion. Serum BAFF levels are elevated in IIM, more so in children. Anti-SRP positivity and severe disease are associated with lower BAFF levels at baseline, suggesting alternate mechanisms such as IL-17 pathway are operative.

P76
MORE SEVERE DISEASE WITH RENAL AND CARDIOVASCULAR DAMAGE AMONG MALE PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) IN UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC)

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Aim. To determine the differences in the clinical manifestations, autoantibody profile, and organ damage between male and female patients with Systemic Lupus Erythematosus.

Method. This was a cross sectional study involving consecutive SLE patients who attended the Nephrology and Rheumatology Clinic in Universiti Kebangsaan Malaysia Medical Centre (UKMMC) from June 2016 until June 2017. Information on their socio-demographics, disease characteristics and treatment were obtained from the clinical record. Disease damage was assessed using the SLICC/ACR (Systemic Lupus International Collaborating Clinics/American College of Rheumatology) Damage Index (SDI) scores. Statistical analyses were performed to determine any difference in the disease characteristics, autoantibody profiles and damage between male and female SLE patients.

Result. A total of 370 patients were recruited and a total of 53 (14.3%) patients were male. Majority of the male patients were Malays (n=35, 63.6%), followed by Chinese (n=16, 29.1%) and Indians (n=3, 5.5%). Male patients tend to have earlier onset of SLE (27.1 $\pm$ 12.2 vs 30.7$\pm$13.1 years,p=0.06) with significantly more renal (78.2% vs 63.8%, p=0.05) and lesser musculoskeletal (45.5% vs 62.7%, p=0.02) involvement as compared to females. Immunologic profile revealed more male patients had Histone antibody (42.1% vs 20.7%, p=0.02) and tend to have positive lupus anticoagulant (27.6% vs 14.3%, p=0.06). In contrast, more female patients had positive anti-Ro (44.7% vs 21.1%, p=0.05). Disease damage was significantly higher among males (57.4% vs 39.6%, p=0.02) with higher renal damage (23.6% vs 9.2%, p=0.004) and cardiovascular event of ischaemic heart disease and stroke (20.0% vs 7.0%, p=0.004).

Conclusion. Male patients with SLE have more severe disease with more renal damage and cardiovascular event.

P77
GLUCOCORTICOID-INDUCED LEUCINE ZIPPER (GILZ) NEGATIVELY REGULATES TYPE 1 INTERFERON (IFN) PRODUCTION IN SLE

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Aims. Type I interferons (IFN), produced by plasmacytoid dendritic cells (pDC) in response to Toll-like receptor (TLR) ligands, are critical to systemic lupus erythematosus. Glucocorticoid (GC)-Induced Leucine Zipper (GILZ) is an endogenous anti-inflammatory protein induced by GC. However, whether GILZ regulates IFN production in SLE is not known. Therefore, we aimed to test the hypothesis that GILZ inhibits the production of Type I IFN in SLE.

Methods. We studied pDC and bone marrow-derived DC (BMDC), and WT and GILZ-/- mice in vivo, using stimuli of TLR7 (Imiquimod), TLR7/8 (Resiquimod) and TLR9 (CpG). IFN was measured using a luciferase assay, other cytokines with ELISA, and IFN-stimulated gene signatures (ISG) using qPCR. To determine associations of GILZ and IFN in human SLE, we mined a public gene expression dataset.

Results. Deletion of GILZ resulted in increased pDC and BMDC secretion of IFN, IL-6 and TNFα in response to TLR stimulation. Dexamethasone (DEX) induced GILZ in WT pDC and BMDC, but TLR stimulation suppressed GILZ expression and TLR-stimulated GILZ-/- cells failed to suppress IFN in response to DEX. Moreover, GILZ deficiency was associated with increased ISG in naïve spleen cells, naïve BMDCs and TLR7/9 stimulated pDC. Correspondingly, increased IFN was seen in GILZ-/- mice in response to TLR7/8 stimulation in vivo. In GSE10325(Becker et al., 2013), lower expression of GILZ was associated with high ISG (IFI44, IFI44L, RSAD2, IFI27) (p=0.0021) in SLE patient peripheral blood B cells, and GILZ mRNA was negatively correlated with IFN signature (r=-0.63,p=0.017) which in turn positively correlated with disease activity (SLEDAI2k) (r=0.77, p=0.002).

Conclusions. GILZ is an endogenous regulator of TLR-induced IFN, and is negatively correlated with ISG in human SLE. This suggests that GILZ negatively regulates type I IFN production in SLE and that a GILZ based therapy may be a therapeutic strategy in SLE.

P78
ECHOCARDIOGRAPHY IN DETECTION OF PRIMARY SYSTEMIC SCLEROSIS CARDIAC DISEASE

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Aims. Cardiac disease is a major contributor to mortality in systemic sclerosis (SSc). There is no consensus definition of SSc-cardiac disease (SCD) and no standard diagnostic test. We sought to determine the role of transthoracic echocardiography (TTE) in diagnosis of SCD.

Methods. Patients enrolled in the Australian Scleroderma Cohort Study at St Vincent's Hospital who fulfilled 2013 ACR/EULAR SSc diagnostic criteria were included. Patients with ischaemic heart disease, pulmonary arterial hypertension or moderate-severe valvular disease were excluded. Left ventricular systolic dysfunction was defined by ejection fraction (LVEF)<50%. Left ventricular diastolic dysfunction (LVDD) was defined according to 2016 ASE/EACVI Recommendations. TTE results were compared between diffuse (dcSSc) and limited (lcSSc) disease.

Generalised estimating equations related TTE parameters to an endpoint of all-cause mortality, cardiac transplant, cardiac device implantation, admission for heart failure, and LV dysfunction diagnosed by elevated pulmonary capillary wedge pressure>15mmHg.

Results. Among 251 patients, 1,062 TTE were analysed with mean±SD 4.23±2.42 TTEs per patient and 1.29±0.47 years between TTEs. Mean age at recruitment was 54.06±11.85 years and follow-up was 4.62±2.78 years. There was a low prevalence of LVEF<50% (3.59%) and no significant difference between dcSSc and lcSSc (5.63% vs 2.78%, p=0.273). Overall, 9.18% of patients had LVDD and there was a trend towards a higher prevalence in lcSSc (3.23% vs 11.72%, p=0.052). In patients with LVDD, 15.38%, 84.62% and 3.85% had Grades I, II and III LVDD, respectively. More than a third (39.13%) of patients had indeterminate LVDD, with no difference observed between disease subtypes. In univariable analysis, no association was found between systolic dysfunction, LVDD or other TTE parameters and the primary endpoint.

Conclusion. The prevalence of LVEF<50% is low. Patients with lcSSc more commonly have LVDD. Neither LVEF<50% or LVDD correlate with poor cardiac outcome or mortality suggesting SCD is not adequately captured by these echocardiography parameters.

P79
SERUM LEVELS OF MACROPHAGE MIGRATION INHIBITORY FACTOR AND INTERLEUKIN-1 FAMILY CYTOKINES ARE ELEVATED IN SYSTEMIC SCLEROSIS

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Aim. The pathogenesis of systemic sclerosis (SSc) remains unknown. Recent evidence suggests dysregulation of the innate immune system, particularly the interleukin-(IL)-1 family cytokines. Given the emerging role of macrophage migration inhibitory factor (MIF) in NLRP3 inflammasome mediated IL-1 family cytokine secretion, the aim of this study was to examine associations between MIF and IL-1 cytokines (IL-1α, IL-1β, IL-18), in SSc, and associations with clinical features.

Method. SSc patients (2013 ACR/EULAR criteria) attending Monash Scleroderma Clinic between August 2015 and August 2017 had annual visits entailing historical, physical and investigational assessment with corresponding serum collection. Serum MIF, IL-1α, IL-1β and IL-18 levels were quantified using ELISA and analysed alongside clinical data from the ASIG database.

Results. Serum samples from 115 SSc patients (84% female, median age 62y, 95% Caucasian) and 52 controls (75% female, median age 36y, 32% Caucasian) were analysed. SSc patients had significantly elevated serum MIF (p<0.0001) and IL-18 (p=0.0001) compared to healthy controls. A weak positive correlation was observed between MIF and SScHAQ score (R=0.2107, p=0.0437) which was stronger in the diffuse cutaneous (dcSSc) subgroup (R=0.457, p=0.0373). Patients with elevated IL-18 levels were more likely to have active disease (EUSTAR score ≥ 3) however IL-18 was lower in patients with pulp atrophy and sclerodactyly. IL-1β was elevated in dcSSc patients with pulmonary fibrosis and correlated with mRSS (R=0.213, p=0.0254) in all SSc patients. IL-1α was elevated in patients with joint contractures and pulp atrophy. Positive correlations were found between MIF and both IL-1α and IL-1β. However, there was no significant correlation between MIF and IL-18.

Conclusions. IL-1 family cytokines were variably associated with clinical manifestations of SSc. MIF and IL-18 were elevated, and a relationship between MIF and IL-1β was confirmed. Further investigation into the roles of MIF and IL-1 family cytokines in SSc is justified.

P80
IRON STATUS AND FATIGUE IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Aims. Iron deficiency is a common metabolic disturbance in patients with systemic lupus erythematosus (SLE) and may potentially contribute to fatigue. This association requires further study. Little is known about the role of functional iron deficiency in SLE. The aim of the present study was to assess the association between iron deficiency, iron deficiency anaemia, and functional iron deficiency (indicated by an increase in red cell distribution width – RDW), and fatigue in an Australian SLE cohort.

Methods. We performed a prospective cohort study of 62 SLE patients attending the Rheumatology Clinic in Liverpool Hospital, Australia. Each patient completed the FACIT-Fatigue scale for assessment of fatigue, a visual analogue scale (VAS) for pain and the fibromyalgia survey questionnaire for diagnosis of concomitant fibromyalgia. Blood samples were analysed for full blood count and iron studies. Disease activity was assessed by the physician using BILAG and SLEDAI-2K indices. Multiple regression analysis was conducted to assess the relationship between iron deficiency, iron deficiency anaemia and RDW with FACIT-Fatigue scores respectively whilst adjusting for confounding variables including disease activity scores, concomitant fibromyalgia and pain.

Results. Iron deficiency was significantly associated with greater levels of fatigue (p=0.044) and a higher RDW (p=0.015) in SLE patients, even after adjusting for confounders. RDW showed a significant inverse correlation with SLE-related fatigue (p=0.0017) and patients with a high RDW (>14%) reported higher levels of fatigue than those with normal RDW (p=0.0001), even in those without anaemia.

Conclusions. In patients with SLE, iron deficiency may potentially contribute to greater levels of fatigue and is strongly associated with a higher RDW. Additionally, a higher RDW predicts greater levels of SLE-related fatigue and may therefore be a potentially useful biomarker of functional iron deficiency and fatigue.

P81
VITAMIN D IN SYSTEMIC LUPUS ERYTHEMATOSUS: A ROLE IN DISEASE ACTIVITY AND FATIGUE?

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Aims. Vitamin D deficiency is highly prevalent in patients with systemic lupus erythematosus (SLE) and was recently identified as a potential contributor to fatigue and SLE disease activity. The aim of the present study was to assess the relationship between serum levels of 25-hydroxyvitamin D (25-D) and 1,25-dihydroxyvitamin D (1,25-D) and fatigue and disease activity in an Australian SLE cohort.

Methods. Patients fulfilling ACR criteria for SLE were recruited to a prospective cohort study at Liverpool Hospital, NSW. Blood samples were taken within a week from time of consultation and analysed for serum levels of 25-D and 1,25-D respectively. Serum 25-D levels less than 50nmol/L signified vitamin D deficiency whilst 1,25-D deficiency was defined by serum 1,25-D levels less than 60pmol/L. Fatigue was quantified by the FACIT Fatigue scale. Disease activity was assessed using BILAG and SLEDAI-2K indices. Correlation analysis was performed on serum levels of both 25-D and 1,25-D with FACIT-Fatigue scores and disease activity scores respectively. Multiple regression analysis was also conducted to adjust for confounding variables including disease activity scores, concomitant fibromyalgia and pain.

Results. Sixty two SLE patients were recruited in this study. Eighteen patients (29%) presented with 25-D deficiency whilst nine patients (15%) had 1,25-D deficiency. Vitamin D deficiency (25-D) was not associated with fatigue (p=0.104).There was no association seen between 1,25-D deficiency and fatigue (p=0.380). No significant correlations were seen between fatigue, BILAG scores, SLEDAI-2K scores and serum levels of 25-D and 1,25-D respectively.

Conclusions. Vitamin D deficiency and 1,25-D deficiency are common in patients with SLE. Vitamin D deficiency was not associated with fatigue or increased disease activity in this cohort. Further study is needed to determine whether vitamin D deficiency contributes to the pathogenesis of SLE.

P82
EFFECT OF STORAGE DURATION ON CYTOKINE STABILITY IN HUMAN SERUM

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Aim. Quantification of analytes such as cytokines in serum samples is intrinsic to translational research in immune diseases. Optimising pre-analytical conditions is critical for ensuring study quality, including evaluation of cytokine stability. We aimed to evaluate the effect on cytokine stability of storage duration prior to freezing of serum samples obtained from patients with systemic lupus erythematosus (SLE).

Methods. Protein stability was analysed by simultaneously quantifying 18 analytes using a custom multi-analyte profile in SLE patient serum samples that had been prospectively stored at 4°C for pre-determined periods between 0 – 30 days, prior to freezing.

Results. Six analytes were excluded from analysis, because most tested samples were above or below the upper limit of detection. Amongst the 12 analysed proteins, 11 did not show significant signal degradation. Significant signal degradation was observed from the fourth day of storage for a single analyte, CCL19.

Conclusions. Based on this, a maximum 3 days of storage at 4°C for unseparated serum samples is recommended for biobanked samples intended for cytokine analysis in studies of human immune disease.

P83
LUPUS LOW DISEASE ACTIVITY STATE IS ASSOCIATED WITH REDUCED DIRECT MEDICAL COSTS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Aims. High health care utilization and direct costs have been documented in multiple studies of systemic lupus erythematosus (SLE). The recently described lupus low disease activity state (LLDAS) has been associated with reduced flares and damage accrual. We hypothesized that LLDAS attainment would be associated with reduced healthcare cost.

Methods. This study utilized data from SLE patients who attended a single, tertiary centre between October 2013 and June 2016. Baseline demographics, and per visit disease activity (SLEDAI-2K, physician global and flare index) and medication use were matched to healthcare utilization and cost data obtained from hospital information systems. LLDAS was defined as described (Franklyn K, et al. Ann Rheum Dis 2016;75:1615). We performed univariable and multivariable linear regression analyses to identify factors associated with healthcare utilisation and associated costs.

Results. Two hundred patients (88% female, median age 42 years) were followed for 357.8 person-years. A history of lupus nephritis was present in 42%, anti-dsDNA antibodies in 70%, and SLICC damage index (SDI)>0 at study commencement in 57.3%. During the observation period, median (range) time adjusted mean SLEDAI was 4.0 (0–16.9), there were 571 hospitalizations (24.2% multi-day), and 31% of patients had at least one emergency room attendance. The mean (standard deviation) annual direct medical cost per patient was US$7,413 (US$13,133)/year. In multivariable analysis, baseline organ damage, and moderate–high corticosteroid use (>7.5 mg/day) were significantly associated with increased cost. In contrast, meeting LLDAS criteria for >50% of the observed time was associated with a 25% reduction in annual direct medical cost (p=0.041).

Conclusion. Baseline organ damage, high disease activity, and corticosteroid use were associated with increased cost; where as LLDAS attainment was associated with significantly reduced health care cost among patients with SLE.

P84
ROUTINE CLINICAL PATHOLOGY MEASUREMENTS ARE ASSOCIATED WITH ORGAN DAMAGE TRANSITION IN SLE

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Aims. Prevention of permanent organ damage, a major predictor of morbidity and mortality, is a key goal in the treatment of SLE patients. Physician-measured disease activity is associated with damage accrual, but there are few reliable objective indicators of organ damage risk. Routine pathology measurements provide objective biological data, but their association with damage accrual has not been studied. We evaluated the association of these measurements with organ damage transitions in SLE.

Methods. A dataset of SLE patients between 2007-2017 from the Australian Lupus Registry and Biobank was studied. Variables measured included disease activity (SLEDAI-2k), organ damage (SLICC-SDI), drug treatment and 16 routine pathology measurements. Longitudinal patient data was split into annual periods, and each visit classified as being in a "transition" or "non-transition" period based on whether SDI increased during that period. Time adjusted means (TAMs) of the variables were calculated, and multivariable logistic regression analysis (adjusting for age, gender, race, previous organ damage and prednisolone dose) was performed with Holm-Bonferroni correction. An "odds ratio plot" was generated to depict the effect on damage transition risk at each threshold of the continuous variables.

Results. 893 periods comprising 5082 visits from 245 patients (85.6% female, 50.2% Caucasian) were analysed. Estimated glomerular filtration rate (eGFR), creatinine (p<0.01), urine protein:creatinine ratio (p<0.01), ESR (p<0.001), and haemoglobin (p<0.001) were significantly associated with damage transition. Moreover, the odds of damage transition increased with the deviation of each parameter from its respective normal range. SLEDAI-2k was also significantly associated with damage transition (p<0.001), but the association with damage did not exhibit this proportionality.

Conclusions. Routine pathology measures were found to be proportionally associated with organ damage risk. The potential for the use of these measures as biomarkers, for example to generate an organ damage risk calculator for SLE, warrants further research.

P85
THE CONSISTENCY OF OUTCOMES REPORTED IN TRIALS OF SYSTEMIC SCLEROSIS. IMPROVING OVER TIME?

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Aim. We aimed to assess the scope, and consistency of outcomes reported in trials of systemic sclerosis (SSc), and the uptake of the OMERACT core response set reported in 2008.

Method. MEDLINE, Cochrane CENTRAL, Embase and clinicaltrials.gov were searched to identify randomised clinical trials published between 2000 and June 2016 in adults with SSc. Outcomes and measures were recorded for each trial and compared between trials published from 2000 to 2010 and 2011 to mid2016 to determine whether has been uptake of the core set.

Result. Overall 114 trials (4860 patients, median sample size of 33) were identified. A total of 2736 measures (of 78 domains), with a mean of 24 measures per trial. The proportion of trials reporting any outcome from the each domain is listed: (% of 2000-2010 trials, % of 2011-2016 trials, change in %): health-related quality of life and function (42.6, 56.5, +13.9); skin (39.7, 47.8, +8.1); pulmonary (33.8, 43.5, +9.7); global health (14.7, 21.7, +7.0); gastrointestinal (4.4, 10.9, +6.5); ; cardiac (13.2, 15.2, +2); biomarkers of ESR/CRP (7.4, 8.7, +1.3) musculoskeletal (5.9, 6.5, +0.6); Raynaud's phenomenon (20.6, 19.6, -1.0) renal (14.7, 10.9, -3.8); digital ulcers (23.5, 19.6, -3.9%). Six measures had a greater than 5% increase in reporting frequency across trial periods: HAQ-DI (38.2% to 47.8%), SF-36 (17.6% to 28.3%), Modified Rodnan Skin Score (38.2 % to 47.8%), pulmonary function tests (30.9% to 43.5%), measures of dyspnoea (4.4% to 10.9%) and patient global disease (10.3% to 21.7%).

Conclusion. There was a wide range of domains reported in trials in systemic sclerosis. The uptake of domains and measures as per the core response set is low in SSc trials compared to other rheumatic diseases. Improvements in reporting of specific measures align with the recent development of a composite response index in systemic sclerosis

P86
OBSTETRIC OUTCOMES IN INDIAN WOMEN WITH INFLAMMATORY MYOSITIS

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Objectives. Inflammatory myositis is a heterogenous group of diseases, which commonly affects women, often in the childbearing age group. We sought to explore obstetric outcomes in myositis patients before and after disease onset.

Methods. Women aged more than 18 years with inflammatory myositis (Bohan and Peter's criteria) were included. Apart from demographic data, menstrual status, history of conception and maternal and fetal outcomes were recorded. All results are expressed in median and IQR.

Results. 81 women with myositis of age 40 (32-49) years and disease duration 4 (26-43) years were included. Median age at disease onset was 32 (26-43) years. 35 were postmenopausal women, of whom 5 had an early menopause. 45 patients had dermatomyositis (DM), 20 each had polymyositis and 16-overlap myositis. (Table 1). 15 patients wanted to get pregnant, of which 3 did not do so due to disease. Of the 12 who tried, 6 had spontaneous conception (50%). 24 pregnancies in these culminated in 5 live births, 16 abortions, and 2 MTPs. Of the live births, 1 had cleft palate, 1 was LBW and 1 preterm. All successful pregnancies were seen in those who had had previously borne children. None were positive for antiphospholipid antibodies. In adjusted analysis, age on disease onset, disease duration, type of myositis, number of times conceived, education and residence did not affect outcome or maternal or fatal complications. 63 patients conceived before disease onset, resulting in 205 pregnancies and 151 live births. 76 had (64) maternal and (12) fetal complications. In 7 women the disease started after pregnancy after median time 1 (0.75-1.0) year.

Conclusion. Apart from poor global obstetric outcomes, women with inflammatory myositis suffer from high spontaneous abortion rates in the absence of clinical or serologic APS.

P87
CARDIAC MAGNETIC RESONANCE IMAGING AND CARDIAC BIOPSY FINDINGS IN SCLEROMYXOEDEMA

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Aim. Scleromyxoedema is a rare multisystem disorder characterised by abnormal deposition of mucin. It is a clinical mimic of scleroderma and may thus come to the attention of rheumatologists. This is the first known description in the literature of cardiac magnetic resonance imaging (MRI) findings in scleromyxoedema.

Method. We present the case of a 45 year old female with scleromyxoedema, the findings on cardiac MRI and the histopathological correlations of an endomyocardial biopsy. Her treatment and clinical course are discussed.

Result. Cardiac MRI in scleromyxoedema can show a diffuse myocardial infiltrate consistent with inflammation and fibrosis. This is correlated with an endomyocardial biopsy demonstrating myocarditis with interstitial fibrosis and a colloidal iron stain confirming abnormal deposition of mucin. Under treatment guided by her rheumatologist, this patient's clinical status stabilised with prednisolone, thalidomide and IVIg.

Conclusions. Scleromyxoedema is a rare disease and mimic of scleroderma. Cardiac involvement can be demonstrated on cardiac MRI and correlates with histopathological findings of increased mucin deposition and fibrosis, the key pathological processes in this disease.

P88
INCIDENCE OF MAJOR INFECTIONS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Aim. Major infections are a cause of morbidity and mortality in lupus patients and a key concern when considering immunosuppression. There is limited information on the relationship of infections and disease characteristics. Our aim is to examine the incidence of major infections and describe the types of infections that occur in a cohort of lupus patients

Methods. The study included 192 lupus patients who attended the Monash Lupus Clinic over 5 years. Major infections included infections resulting in hospitalization, major viral infection, tuberculosis or any opportunistic infections. Patient and disease characteristics were compared to 86 rheumatoid arthritis (RA) patients on a similar level of immunosuppression. Associations between a number of patient and disease variables and infection were examined using Wilcoxon rank-sum tests (continuous variables) and Person's chi squared tests (binary/categorical variables).

Results. 57 (30%) lupus patients reported 97 episodes of infection compared to 15(17%) RA patients who reported 28 infection events. RA patients with infections were older than lupus patients ($P<0.001$). 61% of lupus patients and 54% of RA patients were on prednisolone. No organism identified was the most common in lupus whereas in RA multiple pathogens was the most common ($p<0.001$). VZV reactivation causing shingles was the most common viral infection in lupus patients, and was more frequent than the RA patients. In those requiring hospitalization, infection site did not differ between lupus and RA patients. In patients with major infection there was a higher SLEDAI (p 0.04), higher ESR (p 0.005) and lower haemoglobin (p 0.003).

Conclusions. The likelihood of infection is higher in lupus patients when compared to RA patients on similar immunosuppression. Higher disease activity measures were associated with increased likelihood of infection. Given that medication exposure was similar in both groups, other factors other than medication use may play an important role in driving infections.

P89
Abstract Withdrawn.

P90
ELEVATED SERUM LEVELS OF THE ALARMIN "HIGH MOBILITY GROUP BOX PROTEIN 1" (HMGB1) IN PATIENTS WITH DERMATOMYOSITIS, POLYMYOSITIS AND NECROTISING MYOPATHY

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Aims. HMGB1 is a ubiquitous nuclear DNA-binding protein that can translocate to the cytoplasm and extracellular space and act as a proinflammatory mediator. Elevated serum HMGB1 in dermatomyositis (DM) and polymyositis (PM) has been described and levels correlate with survival and the presence of interstitial lung disease (ILD). Herein we determine serum HMGB1 levels in patients with IIM and healthy controls. To our knowledge, this is the first study evaluating serum HMGB1 in necrotising myopathy (NM), inclusion body myositis (IBM) and non-specific IIM (NSIIM).

Methods. A commercially available ELISA kit was used to measure serum concentrations of HMGB1 in 81 IIM patients and 50 healthy controls.

Clinical and serological information was prospectively collected for a number of patients. Median values and the interquartile range are reported.

Results. Serum was collected 158 (86-805) days post diagnostic muscle biopsy and most patients (40/57; 70%) were immunosuppressed. HMGB1 was significantly elevated in patients with NM (44.8 ng/ml, 35.6 – 63.8 ng/ml; $p < 0.001$), DM (47.3 ng/ml, 31.5 – 66.8 ng/ml; $p < 0.001$) and PM (46.3 ng/ml, 31.2 – 82.2 ng/ml; $p < 0.001$) but not IBM (31.9 ng/ml, 22.0 – 36.7 ng/ml; $p = 0.12$) or NSIIM (26.5 ng/ml, 22.6 – 35.6 ng/ml, $p = 0.34$) when compared to controls (27.5 ng/ml, 12.5 – 33.0 ng/ml). The presence of Raynaud's phenomenon and ILD were associated with elevated serum HMGB1, although the latter was not statistically significant. There was no association with clinical measures of disease activity.

Conclusions. These data confirm elevated serum levels of HMGB1 in PM, DM and NM but not IBM or NSIIM. Whether this protein could be used clinically to differentiate IIM subtypes or indicate the likelihood of underlying ILD warrants further study.

P91
HAEMORRHAGIC MYOSITIS: LESSONS FROM A LOCAL COHORT AND A LITERATURE REVIEW

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Aim. Haemorrhagic myositis is an uncommon but feared complication of inflammatory myopathy. This study aims to characterize patients affected by this complication in a local cohort of inflammatory myositis.

Method. A retrospective chart review of patients diagnosed with inflammatory myopathy from year 2013 to 2017 at St George Hospital was conducted. Cases complicated by haemorrhage were identified. A literature review was performed using the search terms "haemorrhagic myositis", "hemorrhagic myositis", "haemorrhage" OR "haematoma" AND "myositis" in MEDLINE, including studies from 1990 to 2017.

Result. 17 cases of inflammatory myopathy were identified from retrospective chart review. There are 5 cases of dermatomyositis, 6 cases of amyopathic dermatomyositis, 3 cases of necrotising autoimmune myopathy, 1 case of juvenile dermatomyositis, 1 case of anti-synthetase syndrome and 1 case of inclusion body myositis. 2 of the 17 cases were complicated by haemorrhagic myositis. A literature review identified 8 reports of haemorrhagic myositis in the context of a diagnosis of an inflammatory myopathy. 25% were positive for anti-Ro52 antibodies2, 25% were ANA negative, and 50% had positive ANA with no myositis antibody result. 75% of cases had retroperitoneal bleeding, of which only 1 survived2. 60% of cases resulted in death.

Conclusions. This review highlights the importance of recognising haemorrhagic myositis as a complication of inflammatory myopathies and caution with the use of heparin in dermatomyositis. It also is the first description of haemorrhagic myositis occurring in a patient with anti-Mi2 antibodies, in addition to the newer anti-SAE1 antibodies, with histopathological evidence of complement damage to capillaries on muscle biopsy. Prophylactic heparin was ceased on discovery of haemorrhagic complications, with good survival outcomes for both patients.

P92
WEIGHT LOSS IN LUPUS PATIENTS ASSOCIATED WITH HIGHER GLUCOCORTICOID EXPOSURE

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Aim. DEXA scans allow for measurement of body composition (fat mass, lean muscle mass, bone mineral content(BMC)) and also specify distribution of each component. To determine body composition changes in lupus patients that gained/lost significant weight over time, and determine effect of glucocorticoids.

Method. Patients of the Monash Lupus Cohort 2007-2015 that were enrolled for at least 12 months and had at least two DEXA with minimum 1 year separation. Body Composition data was extracted from radiological files. Significant weight change was defined as >7% change from baseline.

Result. 68 patients were included in this study. Mean time between scans was 3.4 years. 16% gained significant weight and 15% lost significant weight during the study. Comparing the three groups (weight gain; weight loss; minimal change) there were no significant differences in body composition at baseline. Overall, there was very little difference in change in body composition and distribution. The weight loss group had lower total fat mass and total lean muscle mass (-7909g and -2777g respectively) compared to baseline. There was a reduction in both android and gynoid fat percentages compared with baseline (-9.6%, -5.31% respectively). Significant weight loss was positively associated with time-adjusted-mean-prednisolone >4.42mg/day (OR 4.66, p=0.02) and negatively associated with Asian ethnicity (OR 0.07, p=0.01) in multivariate analysis. The weight gain group had increases in total fat mass with minimal change in other components. There was an increase in both android and gynoid fat percentage compared with baseline (10.3% and 6.4%). Significant weight gain was negatively associated with Asian ethnicity (OR 0.23, p=0.02) and positively associated with higher baseline ESR (OR6.28, p<0.01) and neutrophilia (OR 6.58, p<0.01) in multivariate analysis.

Conclusions. Weight loss occurred in both fat and muscle components and was associated with higher glucocorticoid exposure. Asian ethnicity was protective against weight gain or weight loss.

P93
METABOLIC SYNDROME IN SLE IS INDEPENDENTLY ASSOCIATED WITH BASELINE LUPUS DAMAGE

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Aim. The Metabolic Syndrome is a disorder of energy utilisation and storage, associated with an increased risk of cardiovascular disease. Metabolic Syndrome may contribute to the increased CV disease in SLE. To characterise the prevalence and features of Metabolic Syndrome in a cohort of SLE patients, and determine predictors of development of the Metabolic Syndrome.

Method. SLE patients (ACR≥4) were studied from 2007-2015. Baseline demographic data, disease activity, and treatment data were captured as per protocol. Components of Metabolic Syndrome were attained from patient records. Metabolic Syndrome defined as ≥3 criteria: BMI >30kg/m2; triglycerides>1.7mmol/L; HDL-cholesterol <1.3mmol/L; BP >130/85mmHg or treatment; fasting glucose >5.6mmol/L or treatment.

Result. There were 286 patients in the study, with median age at diagnosis 29.5years (IQR 22.6-42.8). Median baseline SLEDAI was 4 (2-6) and the time-adjusted disease activity (AMS) was 3.7 (2-5.3). 209/286 (73%) of patients were exposed to glucocorticoids. The prevalence of components of the Metabolic Syndrome were hypertension 57%, obesity 20%, hyperglycemia 23%, low HDL 50%, hypertriglyceridemia 35%. Multivariate analysis revealed that hypertension was associated with male gender (OR 3.58, p=0.02), older age at diagnosis (OR 2.47, p=0.02), obesity at baseline (OR 2.76, p=0.01) and MMF exposure (OR 3.13, p<0.01). Asian ethnicity was found to be significantly negatively associated with obesity in multivariate analysis (OR 0.34, p=0.03). Obesity was more prevalence in patient group not exposed to glucocorticoid (14% vs 32%, p=0.04). No association was found between glucocorticoid exposure and hyperglycemia. Hydroxychloroquine was positively associated with low HDL (OR 6.66, p=0.02). Metabolic Syndrome was diagnosed in 37% of cohort. Patients with Metabolic Syndrome had older age at diagnosis (45 vs 38years, p<0.01), more damage at baseline (SDI=1 vs 0, p<0.01), and no association with glucocorticoid exposure.

Conclusion. The prevalence of Metabolic Syndrome was 37%, with baseline SDI damage an independent predictor of its development.

P94
INSULIN LIKE GROWTH FACTOR-1 (IGF1) IN SYSTEMIC LUPUS ERYTHEMATOSUS: RELATION TO DISEASE ACTIVITY, ORGAN DAMAGE AND IMMUNOLOGICAL FINDINGS

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Aim. Given the limited data on the relationship between IGF1 and SLE, we aimed to investigate the potential contribution of overall and free IGF1. This was to be accomplished by assessing a broad range of SLE features, including clinical characteristics, SLE related autoantibodies, immunological parameters, cytokine levels, disease activity and organ damage.

Method. In a cross-sectional study, we recorded clinical characteristics, medication, disease activity (SLEDAI-2K) and organ damage (SDI) in 94 SLE patients. Autoantibodies and cytokines were measured by ELISA and levels of IGF1 and IGF Binding Protein 3 (IGFBP3) by chemiluminescence with healthy controls as the comparator group. Free IGF1 was estimated by the IGF1/IGFBP3 ratio.

Results. There was a significant age-related decline in IGF1, IGFBP3 and free IGF1 (IGF1/IGFBP3 ratio), that was similar in SLE patients and controls with very few outliers. Free IGF1 was inversely related to blood pressure (Rs = -0.327, p<0.01) and HbA1c (Rs = -0.31, p<0.01). Free IGF1 was higher in DMARD treated patients (p<0.01), but there was no significant association between the IGF1 axis and autoantibody profiles, cytokine levels or SLEDAI-2K or SDI categories. IGF1 did correlate inversely with BAFF level and B-, NK - and CD8+ cell counts.

Conclusions. Free IGF1 levels in SLE patients declined appropriately with age. IGF1 levels were not associated with disease activity, severity or autoantibody levels in SLE. Free IGF1 had positive metabolic effects in SLE and may play an indirect role in dampening the cellular immune response by downregulating B and T cell activity.

P95
EVALUATING THE EXPRESSION OF MIR-155 AND MIR-146A IN PATIENTS WITH BD AND THEIR RELATIONSHIP WITH THE EXPRESSION OF TNF-ALPHA AND CTLA4

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Aims. The aim of this study is to investigate the changes of miR-146a and miR-155 expressions in Behçet's disease (BD)

Methods. For this purpose, blood samples of 40 patients and 40 normal subjects as controls were collected. Then, rate of expression between the healthy and patient samples is measured using the Real-Time PCR technique. Therefore, TNF-α and CTLA4 genes expression in these samples can be investigated as internal control at the mRNA level using the Real Time-PCR technique.

Results. The results of the study were reported using descriptive statistics. The mean CTLA4 in the patient group is 0.54 ± 1.7 and in the control group is 2.4 ± 0.76, which is 0.7 units more in the control group. The mean of mir155 in the patient group was 4.2 ± 1.6 and in the control group was 2.03 ± 0.94, which was 2.21 units lower in the control group than in the patient group. In addition, among the genes and microRNAs, only mir-146a was not significant and the rest showed a significant difference.

Conclusion. According to our results, serum levels of the microRNAs are one of the possible mechanisms involved in regulating the TNFα and CTLA4 gene expression in patients with BD. In present study, significant difference was observed in serum mir-155 level between BD patients and healthy subjects.

P96
NEGATIVE BELIEFS ABOUT BACK PAIN ARE ASSOCIATED WITH PERSISTENT, HIGH LEVELS OF LOW BACK PAIN AND DISABILITY IN COMMUNITY-BASED WOMEN

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Aim. While pessimistic beliefs about back pain are associated with low back pain and disability, our understanding of their role in the natural history of the condition is limited. This study examined the association between beliefs about back pain and the development and progression of low back pain and disability over a 2 year period in community-dwelling women.

Study Design. 506 women were recruited to participate in a two-year cohort study. Beliefs about back pain were measured at baseline using the Back Beliefs Questionnaire (BBQ), and low back pain and disability were assessed at baseline and 2 years using the Chronic Pain Grade Questionnaire (CPG). Participants were categorised into the following groups based on their CPG scores; no, developing, resolving and persistent high intensity pain and disability.

Results. Of the 444(87.8%) participants, 108(24.3%) and 69(15.5%) reported high levels of low back pain and disability respectively. Negative beliefs about low back pain were associated with both persistent, high levels of low back pain (M(SE)= 28.7(1.01) vs. 31.2(0.33), p=0.02) and disability (M(SE)= 26(1.4) vs. 31.3(0.31), p=0.001), after adjusting for confounders. Women with persistent high intensity pain and disability had more negative responses to belief statements about the future consequences of the condition compared to those with no or resolving/developing pain and disability (p<0.001-0.03).

Conclusion. This study found that pessimistic beliefs about back pain were associated with persistent high levels of low back pain and disability, suggesting that strategies aimed at improving negative beliefs may reduce the chronicity associated with this condition.

P97
ASSESSMENT OF ACR AND SLICC CLASSIFICATION CRITERIA IN THE ASIA PACIFIC LUPUS COLLABORATION COHORT

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Aims. To compare the clinical characteristics of SLE patients meeting the American College of Rheumatology (ACR) classification criteria (1997) with those meeting the Systemic Lupus International Collaborating Clinics (SLICC) classification criteria (2012) in the Asia Pacific Lupus Collaboration (APLC) cohort.

Methods. All patients fulfilled either the ACR criteria (≥4 of 11 items) or SLICC criteria (≥4 of 17 items, including ≥1 clinical and ≥1 immunologic criteria, or biopsy-proven lupus nephritis (LN) + ≥1 immunological criterion), evaluated at enrolment. Demographic and clinical data were compared using Kruskal Wallis (for medians) or chi-squared (proportions) tests.

Results. 1735 patients were studied with a median ([IQR] (range)) follow up of 795 [532, 1087] (0, 1443) days. 1716 (98.9%) and 1668 (96.1%) patients met SLICC and ACR criteria respectively. 1649 (95%) patients met both criteria (ACR-SLICC group), 67 (3.9%) SLICC criteria only and 19 (1.1%) ACR criteria only. Patients in ACR-only and SLICC-only groups were significantly older than the ACR-SLICC group (median age (IQR); 50 (37, 59), 46 (34, 55), 40 (31, 50), respectively; p=0.003). At recruitment, both ACR-only and SLICC-only patients had lower SLEDAI-2k score compared to ACR-SLICC group (2 (0, 4), 2 (1, 4), 4 (2, 6) respectively (p-value=0.003), and fewer SLICC-only patients were in flare. During the observation period, SLICC-only patients had the lowest time-adjusted mean (TAM) SLEDAI-2k (P<0.01) and prednisolone dose (P<0.01), lowest proportions of flares (P<0.01) and damage accrual (P=0.4), and highest proportion of patients achieving Lupus Low Disease Activity State (LLDAS) at least once (P=0.07). In contrast, ACR-only

patients had the highest proportion of patients experiencing flares and least proportion of achieving LLDAS.

Conclusion. We observed a high overlap between the two classification criteria, but the use of both criteria captured a larger cohort overall. In this cohort, patients meeting SLICC but not ACR criteria had significantly less active disease.

P98
TIME DEPENDENT ASSOCIATION OF ACTIVE RENAL DISEASE WITH IRREVERSIBLE ORGAN DAMAGE ACCRUAL IN SYSTEMIC LUPUS ERYTHEMATOSUS

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Aims. To examine time-dependent associations of active lupus nephritis (LN) with organ damage accrual in patients with systemic lupus erythematosus (SLE).

Methods. Patients from the Asia Pacific Lupus Collaboration (APLC) cohort were used in the analysis. SLE Disease Activity Index-2000 (SLEDAI-2k) is collected per-visit and SLICC-ACR Damage Index (SDI) annually. Analysis was restricted to patients with ≥2 SDI scores. Active LN was defined if patients had urinary casts, proteinuria, haematuria or pyuria as indicated in the SLEDAI-2k descriptor. Organ damage accrual was defined as a change of SDI (ΔSDI>0) between baseline and final visit. Glucocorticoid (GC) categories were defined according to cumulative GC exposure at each visit as either no GC (cum.GC=0); low GC (cum.GC≤median) or high GC (cum.GC >median). Cox regression analyses were performed.

Results. 1735 patients and 5593 visits were included in the analysis. 93% of patients was female with a median ([inter-quartile range (IQR), (range)] age of 40 years [31, 51] (18, 77). Median study observation period was 853 days [621, 1094] (98, 1443). 82% of patients were exposed to glucocorticoids. 40% had active LN at least once during the study period, and active renal disease was observed in 22% of visits (n=1,238 visits). 41% of patients had organ damage at baseline and 14% accrued organ damage (272 damage accrual episodes in 250 patients). Patients with active LN were 66% more likely to accrue organ damage compared to those without active LN (adjusted hazard ratio = 1.66 (95% CI: 1.26, 2.19), p-value<0.01). High cumulative GC and age were also significantly associated with damage accrual.

Conclusion. Active LN is an independent risk factor for damage accrual in SLE. The additional independent association of GC exposure with damage accrual indicates the need for non-GC treatments to treat LN and reduce damage burden.

P99
INVESTIGATIONS FOR THE DIAGNOSIS OF SEPTIC ARTHRITIS IN THE ACUTE SETTING. RESULTS FROM A SINGLE TERTIARY CENTRE OVER 5 YEARS

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Aim. To examine the predictive value of investigations used to diagnose septic arthritis in the acute setting.

Methods. A retrospective chart review was conducted on all patients referred from the emergency department to the orthopaedic surgery service with a potential diagnosis of septic arthritis between June 2010 and December 2015 at the Austin Hospital in Melbourne, Australia. Data was collected regarding demographic details, risk factors, pathology results, antibiotic prescribing, joint aspirate and theatre samples.

Results. The study included 126 patients with 132 emergency department presentations involving 141 joints. The median age of patients was 70 (IQR 52.3-79.8); 86 (68.3%) were male. The most common joints involved were the knee (49.6%) and hip (17.7%). In 88 of the 132 presentations (67%), culture of the synovial fluid was positive. 19 of these 88 (22%) culture positive presentations had no classical risk factors for septic arthritis (joint prosthesis, previous septic arthritis, immunosuppressed, previous joint disease, intravenous drug use). 12 of the 88 (13%) culture positive patients had symptoms for longer than 4 weeks on presentation in contrast to 2 of the 44 (5%) in the culture negative group. There was no evidence of a relationship between WCC and culture status (p=0.56) or CRP and culture status (p=0.64), either singly or when combined. In the culture positive presentations 25 (28.4%) did not have a joint aspirate performed prior to surgical washout. Crystals were seen in 19 (30.2%) culture positive patients. 26 (29.5%) culture positive presentations had no growth on aspirate culture but had positive theatre cultures.

Conclusion. While septic arthritis is a common emergency presentation, there are few useful non-invasive diagnostic tests. Although risk factors aid in stratifying risk, duration of symptoms and inflammatory markers are poor differentiators. Neither the presence of crystals nor the absence of growth on aspirate culture exclude septic arthritis.

P100
IXEKIZUMAB IMPROVES PATIENT-REPORTED OUTCOMES THROUGH 52 WEEKS IN PATIENTS WITH ACTIVE PSORIATIC ARTHRITIS AND PREVIOUS INADEQUATE RESPONSE TO TUMOR NECROSIS FACTOR-INHIBITORS

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Aim. Up to 24 weeks, ixekizumab (IXE) was superior to placebo (PBO) in patients with active psoriatic arthritis (PsA) and inadequate response to TNF inhibitors (TNFi) (phase 3 trial; SPIRIT-P2).1 We report Week 52 interim patient-reported outcomes (PROs) of IXE, during the SPIRIT-P2 Extension Period (EP).

Methods. During Double-Blind Treatment Period (DBTP; Weeks 0-24), 363 patients with inadequate response or intolerance to TNFi were randomized 1:1:1 to subcutaneous administration of either 80 mg IXE every 4 weeks (Q4W; N=122) or 2 weeks (Q2W; N=123) following a 160 mg starting dose, or PBO (N=118). On completion of DBTP, 310 patients entered EP (Weeks 24-156).Patients in IXE arms continued the same dose regimen in EP. PBO patients were re-randomized (1:1) to IXE Q4W or Q2W at Week 16 (inadequate responders) or Week 24 after a 160 mg starting dose. At baseline and week 52 in EP, descriptive statistics were used to summarize PROs: Short Form-36 Health Survey (SF-36) Physical Component Summary (PCS) and Mental Component Summary (MCS), European Quality of Life 5 Dimensions Visual Analog Scale (EQ-5D VAS; 0-100 scale), Work Productivity and Activity Impairment-Specific Health Problem (WPAI-SHP), fatigue Numeric Rating Scale (NRS; unvalidated), and the itch NRS (in patients with baseline psoriatic lesion ≥3% body surface area (BSA; N=175)).

Results. The EP population had impaired physical and mental function, QoL, and work productivity at baseline. Patients receiving IXE up to 52 weeks reported improvements in SF-36 (PCS and MCS), EQ-5D VAS, WPAI-SHP (presenteeism, work-productivity, and activity-impairment), fatigue NRS and itch NRS.

Conclusions. In patients with active PsA and previous inadequate response to TNF-i, IXE provided sustained improvement up to 52 weeks

in all measured PROs, including physical and mental function, QoL, work productivity, fatigue, and itch (≥3% BSA psoriasis).

1 Kavanaugh et al. EULAR. 2017 June 17; Madrid, Spain; [abstract SAT0446]

P101
EVALUATION OF THE CORRELATION BETWEEN ROUTINE ASSESSMENT OF PATIENT INDEX DATA 3 (RAPID3) AND BATH ANKYLOSING SPONDYLITIS DISEASE ACTIVITY INDEX (BASDAI) SCORES, TO ESR, CRP AND JOINT COUNTS IN PATIENTS ON BIOLOGIC AGENTS IN A VICTORIAN TERTIARY CENTRE

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Aim. The RAPID3 and BASDAI scores are two patient reported indices used in the routine disease activity assessment of patients with rheumatoid arthritis (RA) and ankylosing spondylitis (AS) respectively. They are often used in conjunction with clinical indicators such as erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and joint count to evaluate overall disease activity. There are few studies investigating the correlation between RAPID3 and BASDAI scores with other clinical indicators. The aim of this study was to assess the correlation between these two indices and CRP/ ESR and joint count in patients on biologic agents in a Victorian tertiary-referral hospital.

Methods. A retrospective analysis of all patients on biologic therapy attending the St Vincent's Hospital rheumatology outpatient clinics in 2017 was performed. 1052 clinic appointments for 109 patients were included. RAPID3 and BASDAI scores, CRP, ESR, joint counts and prednisolone dose at each clinic visit, where available, were collected. Correlations between these variables were analysed with Spearman's correlation coefficient.

Results. Joint count was found to have a moderately positive correlation with RAPID3 scores (Spearman $r = 0.542$, $p < 0.001$). RAPID3 scores were weakly correlated with CRP ($r = 0.356$, $p < 0.001$) and ESR ($r = 0.336$, $p < 0.001$). In contrast, BASDAI scores were more strongly correlated with CRP ($r = 0.502$, $p < 0.001$) and ESR ($r = 0.462$, $p < 0.001$). Additionally, RAPID3 scores ($r = 0.508$, $p < 0.001$) were more likely to be associated with higher doses of prednisolone compared to the BASDAI ($r = 0.352$, $p < 0.001$).

Conclusion. RAPID3 and BASDAI scores are self-administered tools which are moderately correlated with CRP, ESR and physician assessed joint count. Whilst such indices cannot replace these commonly used clinical measures, they can add another level of precision in evaluating disease severity in patients with RA or AS.

P102
ANCA-ASSOCIATED VASCULITIS/IgG4 RELATED DISEASE: A NEW OVERLAP SYNDROME WITH AN AUSTRALIAN CASE REPORT

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Aim. We present an Australian case of ANCA-associated vasculitis/IgG4 Related Disease (AAV/IgG4-RD) overlap in a patient with progressive FDG-avid prevertebral fibrosis on a background of granulomatosis with polyangiitis (GPA). We discuss the case with respect to recent reviews and reports.

Method. Literature search of Ovid MEDLINE by two independent authors to January 2018. Multidisciplinary review of the case to prepare for presentation, including obtaining histopathological review with respect to criteria for diagnosis of IgG4-RD.

Results. A 42 year old male presented in 1999 and GPA was confirmed by renal biopsy and fulfilled criteria by the Chapel Hill Criteria. GPA manifestations have included; a persistent PR3-ANCA, two episodes of glomerulonephritis, inflammatory arthropathy and sinopulmonary disease requiring pleurodesis in 2008. In 2006 a heterogenous FDG-avid, posterior mediastinal, pre-vertebral mass was initially identified which has progressed, now encroaching on the pulmonary artery. Serum IgG4 1.5 g/L. The results of a literature search revealed two case reports, two reviews and one multicentre observational study relating to ANCA/IgG4-RD. A European multicentre observational study identified eighteen patients who met criteria for both AAV and IgG4-RD. In 50% of cases IgG4-RD manifested as chronic periaortitis, 22% each presented with orbital masses and tubulointerstitial nephritis, and 17% with prevertebral fibrosis. In 72% AAV and IG4-RD were diagnosed concomitantly. ANCA positive in 83% with a specificity against PR3 in 50%.

Conclusions. This is a description of an Australian case of AAV/IgG4-RD overlap. Each condition should be considered in cases where the clinical suspicion is high. It also highlights the potential role for establishing an Australian Vasculitis Registry to expand knowledge and improve understanding of possible shared pathophysiology and optimise therapeutic strategies.

P103
A VALIDATION OF THE 2017 EULAR/ACR IDIOPATHIC INFLAMMATORY MYOPATHIES CLASSIFICATION CRITERIA IN AN EXPERT-DEFINED SINGLE-CENTRE TEN YEAR INCIDENT COHORT

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Aim. To perform an external validation of the recently published EULAR/ACR classification criteria in an incident idiopathic inflammatory myopathies (IIM) cohort and examine how classification criteria-assigned IIM subtype correlates with expert opinion.

Method. Adults with newly diagnosed IIM attending Salford Royal NHS Foundation Trust Neuromuscular services were identified. A retrospective review of all putative cases was performed, and cases fulfilling a consensus expert-opinion diagnosis of definite IIM included. A broad range of clinical, serological and histological data were collected and each case assigned a single IIM subtype by expert opinion. The EULAR/ACR classification criteria were applied and sensitivity, specificity, positive and negative predictive value calculated, presented with 95% confidence intervals (CI).

Results. A total of 922 cases were screened with 255 expert opinion definite IIM identified. The sensitivity to diagnose an IIM was 99.6% (97.2-100) and 80.9% (76.0-85.8) for the classification criteria cut-points of 'probable' and 'definite' respectively. The sensitivity for 'definite' IIM improved to 90.2% (86.5-93.8) when biopsy data for 24/34 initially missed cases were excluded. In 94/255 cases the IIM subtype differed between expert opinion and classification criteria, most strikingly in the group subtyped 'polymyositis' using the EULAR/ACR criteria, where there was discrepancy in the majority (87/161).

Conclusions. The criteria performed with high sensitivity in identifying IIM in an external cohort of IIM patients. However, substantial disagreement exists in subtype assignment, especially resulting in a larger proportion of cases of 'polymyositis' with heterogeneous features, important to consider in the application of these criteria to subsequent research.

P104
THE INCREASING INCIDENCE OF ADULT IDIOPATHIC INFLAMMATORY MYOPATHIES IN THE CITY OF SALFORD, UK: A TEN YEAR EPIDEMIOLOGICAL STUDY

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Aims. Identify and characterise all incident adult cases of idiopathic inflammatory myopathies (IIM) between Jan 1st 2007 and Dec 31st 2016 in the City of Salford, UK.

Method. Adults first diagnosed with IIM within the study period were identified by: i) a Salford Royal NHS Foundation Trust (SRFT) inpatient episode IIM-specific ICD-10 coding search; ii) all new patient appointments to SRFT neuromuscular outpatient clinics; iii) all Salford residents enrolled within the UKMYONET study. All patients with 'definite' IIM by 2017 EULAR/ACR classification criteria were included, as were 'probable' cases if expert opinion agreed. Cases were excluded if <18 years at disease onset, if they did not meet 'probable' criteria, or when 'probable' but expert opinion concluded a non-IIM diagnosis.

Results. The case ascertainment procedures identified 1,156 cases which, after review and application of exclusion criteria, resulted in 32 incident cases during the study period. 23/32 were female with a mean age of 58.1 years. The mean incidence of adult IIM was 17.6/1,000,000 person years (py), higher for females than for males (25.2 versus 10.0/1,000,000py respectively). A significant incidence increase over time was apparent (13.6 versus 21.4/1,000,000py; p=0.032). Using EULAR/ACR classification criteria, the largest IIM subtype (21/32) was polymyositis, followed by dermatomyositis (8/32), inclusion body myositis (2/32) and amyopathic dermatomyositis (1/32). Expert opinion subtype differed from EULAR/ACR Classification criteria in 19/32 cases.

Conclusions. The incidence of adult IIM in Salford is 17.6/1,000,000py, higher in females and is increasing over time. Disagreement exists between EULAR/ACR-derived and expert opinion-derived IIM subtype assignments.

P105
RELATIONSHIP OF SERUM 25(OH)D (CHOLECALCIFEROL) LEVEL WITH MUSCULOSKELETAL SYMPTOMS

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Aim. To assess the relationship between musculoskeletal complaints and serum 25(OH)D

Method. This prospective cross-sectional descriptive study was conducted during July 2017 to December 2017 in Chittagong, Bangladesh. Patients complaining any of myalgia, muscle cramp, fatigue, general weakness, proximal muscle weakness, bone pain and pain in weight bearing joints were enrolled. Each patient was screened to exclude common other possibilities. Serum 25(OH)D was measured for each patient. Race, occupation, skin complexion, body mass index, sunlight exposure, clothing's and use of sunscreen were taken under consideration in final analysis.Visual analogue scale (VAS; 1-10) was used to quantify all complaints. Correlation of serum 25(OH)D with VAS score of individual complaints was analyzed.

Result. A total of 110 patients (79 Female and 31 Male) were enrolled. All of them were Bangladeshi of multi-ethnic Asian origin. Mean age was 46.5 ± 12.8 years. Most had (90.9%; n =100) inadequate sunlight exposure and 77.2% (n = 61) women used veil. Mean serum 25(OH)D was 25.2±7.3 ng /ml. Cholecalciferol deficiency was (mean 17.3 ± 2.8 ng/ml) observed in 30 (27.3%), insufficiency (mean 25.1 ± 2.7 ng/ml) in 62 (56.4%) and normal level (mean 34.8 ± 4.4 ng/ml) in 18 (16.4%). After classifying 25(OH)D level in relation to symptoms it was found that majority of patients (81.2 to 90.3%) had insufficient or deficient cholecalciferol level. Significant negative correlation was found between the serum 25(OH)D level and VAS for proximal muscle weakness (r = -0.253, p = 0.008) and positive correlation was found for muscle cramps (r = 0.220, p = 0.021). No significant correlation was found with other variables.

Conclusions. Musculoskeletal health is influenced by vitamin D. Patients complaining muscle cramp should be evaluated with cholecalciferol.

P106
TRANSLATION, CROSS-CULTURAL ADAPTATION AND VALIDATION OF THE PAIN CATASTROPHIZING SCALE (PCS) INTO BENGALI IN PATIENTS WITH CHRONIC NON-MALIGNANT MUSCULOSKELETAL PAIN

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Aim. Translation and cross cultural adaptation of Pain Catastrophizing Scale (PCS) to Bengali for the people of Bangladesh and to determine whether the culturally adapted Bengali version of the PCS is a valid tool to assess catastrophizing in adult patients with chronic non-malignant musculoskeletal pain.

Methods. This was an observational study conducted in the department of Rheumatology of Bangabandhu Shiekh Mujib Medical University, Bangladesh. Forward-backward translation was applied to translate the questionnaire from English to Bengali. Ninety-five patients suffering from chronic non-malignant musculoskeletal pain participated in the study. Reliability and validity were assessed using internal consistency and convergent validity respectively. Factor analysis was performed to examine the scale structure.

Results. The internal consistency for 'helplessness,' 'magnification,' 'rumination,' and 'total' of the Bengali PCS were Cronbach's α =0.87, 0.72, 0.90 and 0.92 respectively; test–retest reliability of the scale were ICC = 0.93, 0.79, 0.87 and 0.78 respectively. Moderate negative correlations were observed between the Bengali PCS and physical and psychological functioning. Factor analysis demonstrated the adequacy of the three-factor structure of the Bengali PCS; 'helplessness,' 'magnification,' and 'rumination.'

Conclusions. The Bengali version of PCS is a valid and reliable tool to measure pain catastrophization. PCS scores in our population were found harmonious with the original scale and other available studies. This scale can now be used in our Rheumatology practices planning for therapeutic interventions who are suffering from pain.

P107
INTEGRATED EFFICACY AND SAFETY RESULTS FROM SPIRIT-P1 AND SPIRIT-P2, TWO PHASE 3 TRIALS OF IXEKIZUMAB FOR THE TREATMENT OF PSORIATIC ARTHRITIS

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Aim. Ixekizumab (IXE) is a high-affinity monoclonal antibody that selectively targets interleukin-17A. We present integrated efficacy and safety data at Week 24 from two phase 3 trials of IXE for psoriatic arthritis (PsA) treatment.

Methods. Patients (bDMARD-naïve) with active PsA (SPIRIT-P1) and with prior lack of efficacy or intolerance to TNF-inhibitor(s) (SPIRIT-P2) were randomized to placebo (PBO, N=224), 80 mg IXE every 4 weeks (IXEQ4W, N=229) or every 2 weeks (IXEQ2W, N=226), after a 160 mg starting dose. At Week 16, PBO-treated inadequate responders were re-randomized to IXE and received rescue therapy. Continuous data were analyzed using mixed-effects model for repeated measures; categorical data, using a logistic regression model with missing values imputed by non-responder imputation. Safety data was analyzed using Fisher's exact test.

Results. At Week 24, significantly more patients treated with either dose of IXE (p<.001) compared to PBO achieved primary endpoint of ACR 20, as well as ACR 50 and ACR 70, and had a greater change from baseline (p<.001) in HAQ-DI score. Significantly greater resolution rates for enthesitis and dactylitis were seen in IXE-treated patients compared to PBO. Greater skin clearance (PASI improvement) was significantly higher for IXE-treated patients (p<.001). Treatment-emergent adverse events (AEs; injection site reactions, serious infections, oral candida infections, and non-anaphylactic hypersensitivity reactions) were higher in one or both IXE group(s) compared to PBO (p<.05). Serious AEs were slightly higher in both IXE groups compared to PBO. Discontinuations due to AEs were higher in IXE2W compared to PBO. There were no deaths.

Conclusions. Patients treated with either dose regimen of IXE achieved significantly greater improvements in arthritis, physical function, and skin conditions compared to PBO at Week 24. Safety was generally consistent with published data from IXE psoriasis and PsA trials.

P108
SAFETY SUMMARY RESULTS OF BARICITINIB FOCUSING ON SERIOUS INFECTIONS EVENTS AND PRESELECTED COMORBIDITIES

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Aim. Baricitinib (BARI) is an oral selective JAK1/JAK2 inhibitor for the treatment of patients with Rheumatoid Arthritis (RA) with an acceptable safety profile. Objective is to evaluate the incidence rate (IR) of serious infection events (SIE) and selected comorbidities.

Methods. Exposure adjusted IR of SIE were summarized in 6-study- and 4-study- PBO-controlled sets, 0-24 weeks (wks), plus in ALL-BARI-RA set (any BARI dose for ≤5years (Ph 1-3/LTE studies)). Potential risk factors for SIE were investigated in ALL-BARI-RA set using Cox models. Sensitivity analysis for comorbidities included patients (N=1683) from 5 studies (BARI 4mg/PBO) up to 16wks,

Results. The most frequent SIE observed in the ALL-BARI-RA-set (N=3492; 5133 patient-years (PY) of exposure [PYE]) were pneumonia, herpes zoster, urinary tract infection, and cellulitis (all <1%), 150 patients reported SIE (IR=2.9/100PY), and 2 patients with SIE died (IR=0.04/100PY). During wks0-24, similar SIE rates were observed in BARI 4mg (N=997;417PYE) and PBO (N=1070;403PYE) groups in the 6-study-set, and between BARI 2/4 mg (N=479;192PYE/ N=479;194PYE) dose groups in the 4-study-set. Prior biologic use, advancing age, region of Asia (excluding Japan), abnormal body mass index (BMI), and corticosteroid use were identified as independent factors for SIE in the ALL-BARI-RA-set, and none differed significantly between BARI 4mg and PBO in the 6-study-set (data not shown).

The presence of selected comorbidities did not affect the incidence of treatment emergent adverse events (TEAEs), serious adverse events (SAE), discontinuations, or deaths caused by SAEs for BARI 4mg vs PBO. The most common TEAEs were nasopharyngitis and upper respiratory tract infection.

Conclusions. SIE incidence was similar between BARI- and PBO-and BARI 2mg/4mg treated RA patients up to wk24. No trends were noted for patients in each preselected comorbidity subgroup for increased risk of events after treatment with BARI 4mg compared with PBO up to wk16.

P109
EFFECTS OF BARICITINIB ON HAEMATOLOGICAL LABORATORY PARAMETERS IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Aim. Rheumatoid arthritis is associated with an increased neutrophil and platelet count, and decreased lymphocyte count.

Methods. To summarise changes in absolute neutrophil counts (ANC), absolute lymphocyte counts (ALC), platelet counts, and haemoglobin (Hgb), and associated adverse events, with baricitinib (BARI [JAK1/2 inhibitor]) treatment. Data were pooled from completed Phase 1/2/3 studies and an extension study.

Results. BARI treatment was associated with a decrease in ANC and an increase in ALC and platelets, which stabilized and returned to baseline with prolonged treatment or treatment discontinuation. Neutropaenia (<1000 cells/mm3) was rare (<1%) and was not associated with higher risk of overall or serious infections. Lymphopaenia was associated with slightly higher rate of overall infections. Incidence of overall and serious infections in ALL BARI-RA set was 29.9 and 2.9 per 100 patient-years, respectively. More BARI 4-mg (2.3%) as compared to placebo-treated (1.3%) patients had platelet count ≥600x109/ L. In 6-study placebo-controlled set (0-24 weeks), 5 BARI 4-mg-treated patients (vs 0 placebo-treated) had "deep vein thrombosis" (DVT) and/or "pulmonary embolism" (PE). Incidence of overall and serious DVT/PE in ALL BARI-RA set remained low at 0.5 and 0.3 per 100 patient-years, respectively. The proportion of patients with high platelet levels (≥600 × 109/L) was comparable between patients with DVT/PE vs those without DVT/PE (at baseline: 0 vs 0.5%; post-baseline: 6.5% vs 3.3%). With long-term BARI treatment, Hgb levels decreased transiently before returning to levels slightly higher than baseline at Week-52. Incidence of severe treatment-emergent shifts in Hgb (grade <3 to grade ≥3: <8 and ≥6.5 g/dL) was low across all treatment groups (<0.5%).

Conclusions. No associations were observed between ANC decrease and infections or thrombocytosis and DVT/PE. BARI treatment was not associated with an increased incidence of erythropaenia-related events or anaemia as compared to placebo. Few patients interrupted/discontinued BARI due to TE laboratory abnormalities.

P110
SUMMARY OF BARICITINIB EFFECT ON PATIENT-REPORTED OUTCOMES (PROS) IN METHOTREXATE–INADEQUATE RESPONDER PATIENT POPULATION

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Aim. Patient-Reported Outcomes (PROs) have become increasingly important in the evaluation of rheumatoid arthritis (RA) patients (pts). This is a summary of the effect of baricitinib (BARI) on PROs.

Methods. In RA-BEAM (NCT01710358), 1305 pts with inadequate response to MTX were randomised 3:3:2 to PBO QD, BARI 4mg QD, or ADA 40mg EOW. Post-hoc analyses focused on the impact of BARI on PRO measures such as the Pain visual analogue scale (VAS), Health

Assessment Questionnaire-Disability Index (HAQ-DI), Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F), duration of morning joint stiffness (MJS): i) the proportion of patients who achieved pain improvement of ≥50% of their baseline pain (VAS: 0-100mm) in each treatment arm; ii) differences in PROs, at week (Wk)24, among pts with DAS28-ESR defined low disease activity (LDA) and remission per treatment group.

Results. A significantly greater proportion of patients treated with BARI achieved ≥50% pain improvement as early as Wk1 compared to PBO (26% vs 13%; p≤0.001) and as early as Wk4 compared to ADA (48% vs 37%; p≤0.01); improvements were sustained through Wk24 (BARI 61% vs ADA 52%; p≤0.05). Patients in LDA at Wk24, treated with BARI, reported significantly greater improvements in pain and HAQ-DI than those with ADA and PBO. Among patients in remission at Wk24, significantly greater improvements in HAQ-DI scores were reported with BARI than with PBO; among patients with LDA, significantly greater improvements in morning joint stiffness duration were also observed with BARI and ADA than with PBO (data not shown).

Conclusions. BARI demonstrated rapid and sustained improvements in pain. Attainment of remission or LDA is associated with improvements in pain, physical functioning and health-related quality of life for patients treated with BARI, ADA or PBO but with most marked improvements on BARI and ADA.

P111
DURABILITY, MAINTENANCE AND EFFECTS OF DOSE REDUCTION FOLLOWING PROLONGED TREATMENT WITH BARICITINIB

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Aim. It is clinically relevant to understand the durability and maintenance of response to baricitinib (BARI), a selective Janus kinase (JAK)1/JAK2 inhibitor, over prolonged use, and the dose tapering strategies available after achieving disease control.

Objective and Methods. Upon completion of BARI Phase 3 originating studies (OS) (RA-BEGIN, RA-BEAM, RA-BUILD, and RA-BEACON), patients could enter the long term extension (LTE) study, RA-BEYOND. Durability of response was evaluated as proportion of patients achieving SDAI≤11 in the OS and through 96 weeks in the LTE. Maintenance of response was evaluated as proportion of patients who had responded to BARI at entry into LTE and maintained the response at Week 96. Within RA-BEYOND, patients who received BARI 4-mg for ≥15 months and who achieved sustained LDA (CDAI≤10) or remission (CDAI≤2.8) at 2 consecutive visits, were re-randomised in a blinded manner to continue BARI 4-mg or step down to 2-mg.

Results. Durability of response was evident as response rates were higher 96 weeks after entry into RA-BEYOND as compared to Week 12 of the OS. Most responders at entry into LTE maintained their response through Week 96 (data not shown). Dose reduction to BARI 2-mg once daily (QD) resulted in small increases in disease activity up to Week 48, as compared to BARI 4-mg. CDAI≤10 rates at Week 48 were 68.2 for BARI 2-mg (vs 80.8 for 4-mg, p≤0.01]). By Week 48, a majority of patients (in both the groups) recaptured (data not shown) or maintained the state of LDA or remission.

Conclusion. Effectiveness of BARI, as measured by durability and maintenance of response, is maintained with prolonged therapy. In line with the observations from OS, 4-mg QD is the most efficacious dose. Dose tapering to 2-mg QD may be a reasonable consideration according to treatment goals and responses of an individual patient.

P112
ASSOCIATED FACTORS OF VITAMIN D DEFICIENCY AMONG THE FEMALE RHEUMATIC PATIENTS IN BANGLADESH

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Aim. Vitamin D deficiency is reported to be common in patients with rheumatic diseases. The objective was to determine associated factors of vitamin D deficiency in female rheumatic patients in Bangladesh.

Method. This cross-sectional study was conducted on 384 adult female rheumatic patients in a rheumatology clinic of Dhaka. Socio-demographic, behavioural factors and clinical data were obtained from each participant via face-to-face interview using a standard semi-structured questionnaire during the period of May 2016 to March 2017. Vitamin D level estimation was done using Chemiluminescent Microparticle Immunoassay (CMIA) method. The deficiency and insufficiency of vitamin D level were defined as <20 ng/ml and 20-29 ng/ml respectively. Associations of vitamin D deficiency with patient characteristics were analyzed using logistic regression.

Result. Analysis was done in 363 patients. Mean vitamin D level was 18.57 (SD±5.39) ng/mL and prevalence of vitamin D deficiency 65.6%. There were 175 premenopausal and 188 postmenopausal patients, out of them 128 (73%) and 110 (59%) were vitamin D deficient respectively. Diagnosis of rheumatic diseases was 109 (30.03%) osteoarthritis knees, 105 (28.93%) spondyloarthritis, 78 (21.49%) rheumatoid arthritis, 22 (6.06%) osteoporosis, 14 (3.86%) psoriatic arthritis, 12 (3.31%) systemic lupus erythematosus and 23 (6.34%) others. By univariate analysis, unmarried 20 (90%, p=0.046), nullipara 41 (84%, p=0.003), higher education level 124 (76%, p=0.000) and from urban area 253 (72%, p=0.000) had significant vitamin D deficiency. In logistic regression, higher secondary and above education level (OR= 2.67, p= 0.019) and living in urban area (OR= 2.07, p= .004) were significantly associated with vitamin D deficiency.

Conclusions. Vitamin D deficiency appears to be common in Bangladeshi females with rheumatic diseases. Engagement in daylong academic activities and less sun exposure of urban subjects may responsible for this deficiency. Vitamin D deficiency might be a contributory factor of chronic pain rheumatic patients.

P113
THE ROLE OF INFLAMMATION IN NON-SPECIFIC LOW BACK PAIN: A SYSTEMATIC REVIEW

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Aims. Low back pain (LBP) is ranked highest in terms of disability in the Global Burden of Disease study, with the majority being non-specific LBP. One of the modifiable risk factors for LBP is obesity. However, the association between obesity and LBP is weak. Recent studies showing the fact that fat mass highly related with LBP suggests that chronic low grade systemic inflammation may play a role in the pathogenesis of LBP. Thus we aimed to systematically review whether systemic inflammation is associated with LBP, which may assist in identifying potential novel targeted treatment for LBP.

Methods. A comprehensive search of CINAHL, Medline and EMBASE (from inception to October 2017) was performed to identify the relationship

between LBP and inflammation. National Heart Lung and Blood Institute study quality assessment tools were used for risk of bias assessment. Two reviewers performed the bias assessment and extracted data independently. Best evidence synthesis was performed to present the results.

Results. Twelve papers were included in this systematic review. The quality of the included studies varied from fair (n=2) to low (n=10). There was consistent evidence for an association between tumour necrosis factor (TNF), including TNF-α and soluble TNF-receptor 1 and LBP. There was also consistent evidence for an association between interleukin (IL)-6 and LBP. There was evidence for an association between C-reactive protein (CRP) and LBP, with CRP positively correlated with higher pain intensity. However, there was conflicting evidence for an association between IL-1β, fibrinogen and LBP. Taken altogether, these findings support the notion of a positive association between non-specific LBP and inflammation.

Conclusion. This review provides evidence for an association between inflammation, in particular TNF, CRP, IL-6 and non-specific LBP. Further research needs to be done to assist in understanding LBP pathogenesis and identify any potential new targeted therapies for LBP.

P114
GIANT CELL ARTERITIS MIMICS – A CASE SERIES OF THREE PATIENTS WITH CONDITIONS MIMICKING GCA

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Introduction. GCA is the most common Primary Vasculitis in the elderly. Under recognition and failure to treat can lead to irreversible damage, including Blindness. However, it is also mindful to consider other conditions that mimic Giant Cell Arteritis. We present a case series of three patients who were seen in Rheumatology clinic with a possible diagnosis of GCA.

Case Series. Our first patient, a 61 year old male, had sudden onset vision loss, elevated inflammatory markers and a normal temporal artery biopsy with a final diagnosis of Neuro Syphilis on serological testing. Our Second patient, 57 year old female, had headaches, jaw claudication, postural hypotension, small joint arthritis and a temporal biopsy suggesting GCA, however a tongue biopsy confirmed a diagnosis of AL Amyloidosis. Our Third patient, 75 year old female, had headaches, rashes, Numb chin, elevated inflammatory markers & a biopsy confirming Poly Arteritis Nodosa. All patients were treated appropriately for their final diagnosis with good resolution of symptoms

Conclusion. Whilst early recognition and prompt treatment is paramount in the management of GCA, it is important to have a broad differential and identify GCA mimics.

P115
ARE THE RHEUMATOLOGY ADVANCED TRAINEES RECEIVING APPROPRIATE CLINICAL TRAINING?

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Aims. To determine the case mix and number and type of procedures managed by advanced trainees during training.

Method. An audit of the rheumatology advanced trainee's 2016 and 2017 logbooks of patients managed submitted to the RACP Advanced Training Committee. This included inpatients, outpatients and ward consultations. A similar audit was made for procedures, which were joint and soft tissue injections.

Results. The commonest joints injected were the knee, average per year and range, 39 (18-106), and sub-acromial bursa 13 (0-33). Less common were wrist 5 (0-15), ankle 5 (0-12), and trochanteric bursa 6 (1-27). The elbow, small joints of the hand and foot were rarely injected. The trainee managed an average of 34 patients a week consisting of 9 new patients, 17 follow up patients, 5 ward consultations and 3 inpatients. Over a training year the numbers of consultations for the commonest disorders were, average and range, rheumatoid arthritis 406 (102-564), osteoarthritis 166 (24-492), gout 160 (30-276), ankylosing spondylitis 101 (6-450), psoriatic arthritis 111 (6-204), systemic lupus erythematosus 110 (24-180), back pain 80 (12-138) and fibromyalgia 80 (0-306).

Conclusions. The advanced trainees are probably only competent to inject knees and sub-acromial bursae. After two or three years training they may also be competent for wrists, ankles and trochanteric bursae. The low numbers are likely to be due to improved control of inflammatory arthritis and an increasing number of injections being done by radiologists. The clinical case mix is satisfactory with trainees receiving adequate experience in the commonest rheumatological problems. However, there was considerable variation between hospitals, with some hospitals providing only minimal experience in some diseases. Hospitals with a special interest in a disease provided better experience in these conditions. This supports the rotation policy with trainees spending only one year at a hospital.

P116
APPLICATION OF THE OMERACT DEFINITION OF MINIMAL DISEASE ACTIVITY IN A REAL-WORLD COHORT OF PATIENTS WITH PSORIATIC ARTHRITIS

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Aim. The aim of this study was to determine the proportion of patients classified as having low disease activity or remission using DAS28, DAPSA, and MDA, and to assess what factors led to failure to meet MDA criteria.

Method. Patients from two tertiary centres with a diagnosis of PsA defined by physician impression and CASPAR criteria were included in a cross-sectional analysis. Disease activity was assessed using 68 tender and 66 swollen joint count, psoriasis area and severity index (PASI), Spondyloarthritis research consortium of Canada (SPARCC) and Leeds (LEI) enthesitis indices. Patient global disease activity was recorded using a 100mm VAS. Composite measures DAS 28-ESR, DAPSA and MDA were calculated and disease activity defined according to pre-defined cut-offs. Linear regression analysis was performed to identify factors associated with failure to meet MDA.

Results. 49 patients were included. Eight (16%) patients were in MDA. Rates of low disease activity or remission were 12 (25%) and 25(51%) using the DAPSA and DAS28-ESR respectively. In patients who were not in MDA, 39(91%) had >1 tender joint/s, 29 (67%) had > 1 swollen joint/s, 28 (74%) had a PASI score > 1, 37 (86%) had a patient global >20/100, 23(54%) had a HAQ > 0.5, and 18 (42%) had > 1 tender entheseal point. Linear regression analysis did not identify significant predictors of MDA.

Conclusions. DAS28-ESR underestimated disease activity when compared to the more disease specific indices DAPSA and MDA in this study. Most patients who were not in MDA did not meet tender joint, patient pain, and patient global criteria. Patient co-morbidities such as osteoarthritis and fibromyalgia may influence components of the MDA. Further exploration into how these criteria can be applied in real-world settings is needed.

P117
DISCORDANCE BETWEEN PHYSICIAN GLOBAL AND PATIENT GLOBAL IN PATIENTS WITH PSORIATIC ARTHRITIS

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Aim. To determine the degree of correlation between patient (PtGl) and physician (PhGl) global impression of disease activity in patients with psoriatic arthritis and to explore what clinical, and patient and physician reported outcome measures might influence the global scores.

Methods. Patients from two tertiary centres with a diagnosis of PsA were included in a cross-sectional analysis. The core outcomes of PtGl and PhGl were assessed using a 100mm visual analogue scale (VAS). Explanatory subjective variables of patient and physician skin and arthritis

assessments and patient pain VAS were recorded. Objective clinical variables assessed were 66 swollen (sjc66) and 68 tender (tjc68) joint count, SPARCC and LEI enthesitis indices, and PASI. The correlation between PtGl and PhGl was calculated. The association of the explanatory variables, and potential confounding variables with PtGl and PhGl global was assessed using simple and multiple linear regression.

Results. Fifty-nine patients were included in the analysis. There was a weak correlation between PtGl and PhGl (r=0.33,p=0.01). PhGl showed a stronger association with physician arthritis (R2=0.82,p<0.001) vs physician skin (R2=0.41, p<0.001) in simple regression. PhGl was associated with sjc66 (R2=0.40;P<0.0001,) tjc68 (R2= 0.21,p=0.0003) and PASI (R2=0.27,P < 0.0001). Multiple linear regression revealed sjc66 and PASI accounted for 60% of the variability in PhGl. PtGl was strongly associated with patient arthritis (R2=0.79,P < 0.0001) and patient pain (R2=0.71,P < 0.0001). Patient pain and patient arthritis were strongly correlated (r=0.91). After multiple linear regression patient arthritis was identified as the strongest determinant of the PtGl.

Conclusion. There was discordance between PtGl and PhGl assessment in patients with PsA. Both were associated with subjective assessments of arthritis. The PhGl was strongly associated with objective clinical measures (sjc66 and PASI) and PtGl with subjective assessment of pain. The impact of this discordance on clinical outcomes requires further evaluation.

P118
PROSPECTIVE STUDY ON AGREEMENT BETWEEN MANUAL AND AUTOMATED SYNOVIAL FLUID WHITE CELL COUNTS IN ACUTE JOINT EFFUSIONS

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Aim. To determine degree of agreement between manual and automated synovial fluid white cell counts.

Method. Prospective study of adult patients with acute inflammatory arthritis who underwent diagnostic joint aspirate. Aspirated synovial fluid was sent for both manual and automated white cell count. Statistical methods, including Spearman's correlation and Passing-Bablok method were used to estimate agreement between the two analytical methods.

Result. Seventeen samples have met the inclusion criteria. Fourteen were knee aspirates. There was good correlation between the paired samples, Spearman's r = 0.93; (p-value <0.0001). Passing Bablok equation: y = -83 + 1.1x 95% CI for slope: (0.54, 1.36) indicating good agreement. Individual results were tabulated to reflect non-inflammatory, inflammatory and very inflammatory samples. There was only one misclassification of a inflammatory aspirate as non-inflammatory with automated cell count.

Conclusions. There is good agreement between manual and automated synovial fluid white cell counts. The differences between the two methods don't appear to be clinically significant.

P119
18F-FDG WHOLE BODY PET/CT AS A DIAGNOSTIC TEST FOR POLYMYALGIA RHEUMATICA IN PATIENTS WITH NORMAL INFLAMMATORY MARKERS

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Objective. To report the utility of whole body PET/CT for diagnosing PMR in patients with normal inflammatory markers and compare the clinical and radiologic characteristics of this subgroup with patients from the Melbourne Predictors of Relapse in PMR (MPR-PMR) study.

Methods. Patients presenting with clinical features of PMR according to the 2012 EULAR/ACR classification criteria but normal CRP and ESR underwent 18F-FDG PET/CT as part of their diagnostic work-up. A whole body scan from skull vertex to feet (including dedicated hand views) was performed using the Phillips T/F machine prior to prednisolone commencement. Qualitative and semi-quantitative (standardised uptake value maximum [SUVmax]) scoring of abnormal 18F-FDG uptake was undertaken. Newly diagnosed and untreated PMR patients who underwent the same 18F-FDG PET/CT protocol as part of the MPR-PMR study were used as the comparator group. Statistical analysis was conducted using Stata 13.1 (StataCorp, College Station, TX, USA).

Results. Three patients with normal inflammatory markers (Median CRP 1 [0.9 – 2], median ESR 6 [1 – 7]) underwent 18F-FDG PET/CT. Mean age was 60.15±7.55 years, two patients (66.67%) were male and all were Caucasian. Shoulder and hip pain was present in all cases, but only one patient reported peripheral joint involvement. Median early morning stiffness (EMS) was 30 minutes (15 – 60). On whole body PET/CT, characteristic 18F-FDG uptake was visualised in each patient at the shoulder capsule, trochanteric bursae and adjacent to the ischial tuberosities, with hip capsule involvement similarly present in 2/3. When compared with 35 patients from the MPR-PMR study, there were no statistically significant differences in the clinical characteristics nor the distribution or intensity of abnormal 18F-FDG uptake between the two populations.

Conclusions. In patients with suggestive clinical features but normal inflammatory markers, whole body PET/CT may be utilised to confirm a diagnosis of PMR.

P120
FIRST DOCUMENTATION OF RS3PE AFFECTING THE HANDS ON 18F-FDG WHOLE BODY PET/CT IN POLYMYALGIA RHEUMATICA

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Objectives. To document the clinical and radiologic appearance of RS3PE syndrome affecting the hands on MRI and whole body PET/CT in PMR patients.

Methods. Patients with newly diagnosed PMR were prospectively recruited as part of the Melbourne Predictors of Relapse in PMR (MPR-PMR) study. A standard physical examination was carried out with specific focus upon the presence of peripheral synovitis and pitting oedema. In patients with findings suggestive of RS3PE, clinical photography was undertaken. All study participants underwent a whole body PET/CT scan including dedicated views of the hands using the Phillips T/F machine prior to prednisolone commencement. To precisely identify anatomic correlates of abnormal 18F-FDG uptake in patients with RS3PE, MRI of the wrist and hand was performed using a 1.5 Tesla magnet.

Results. 3/35 patients (0.86%) were noted to have distal synovitis and pitting oedema of the hands at enrolment. Mean age was 70.9±10.1 years, two patients were male, and all were Caucasian. RhF and anti-citrullinated peptide autoantibodies were negative in all cases. On whole body PET/CT, intense 18F-FDG uptake was visualised at the wrist joint and hand in a distinctive volar distribution. MRI of the wrist and hand in two participants (contraindicated in the third) confirmed flexor tenosynovitis (white arrows) and intercarpal synovitis (yellow arrow) in keeping with RS3PE syndrome.

Conclusions. On whole body PET/CT, RS3PE syndrome is associated with a distinctive volar pattern of abnormal 18F-FDG uptake at the wrist and hand, which correlates with flexor tenosynovitis and intercarpal synovitis as previously described on MRI.

P121
INCIDENCE OF MUSCULOSKELETAL AND SKIN IMMUNE-RELATED ADVERSE EVENTS WITH IMMUNE CHECKPOINT INHIBITORS

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Aim. Although immune checkpoint inhibitors (ICIs) targeting the programmed cell death 1 (PD-1) and cytotoxic T-lymphocyte associated protein 4 (CTLA4) have demonstrated better survival in multiple cancer

entities by enhancing pre-existing immune responses, clinical trials reported that the anti-PD-1 antibody and anti-CTLA4 antibody can also induce immune –related adverse events (irAEs) involving various organs. However, the incidence of musculoskeletal and skin irAEs are not well known in the real world setting. The aim for this study is to find out the incidence and characteristics of above irAEs with the anti-PD1 antibody – nivolumab and pembrolizumab or anti-CTLA4 antibody – ipilimumab.

Methods and Result. In total, 154 patients with NSCLC, metastatic melanoma or metastatic RCC from Gold Coast University Hospital were treated with the anti-PD1 antibody – nivolumab or pembrolizumab, or anti-CTLA4 antibody - ipilimumab or combination of ipilimumab and nivolumab. Thirteen musculoskeletal (7.7%) and 34 skin (20.1%) irAEs were identified. Ten patients with musculoskeletal irAE (5.9%) and 9 patients with skin irAEs (5.3%) received oral or intravenous corticosteroids due to their severity.

Conclusion. ICIs can induce musculoskeletal and skin irAEs. The knowledge of these irAEs will allow prompt diagnosis resulting in the better management outcome in the evolving new cases as ICIs are increasingly used.

P122
EFFICACY OF ZOLEDRONATE IN TREATING OSTEONECROSIS OF THE FEMORAL HEAD: A RANDOMISED CONTROLLED TRIAL

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Aim. Osteonecrosis of the femoral head (ONFH) is an increasingly common condition where necrotic bone can lead to femoral head collapse and ultimately require total hip replacement (THR). Our aim was to assess the efficacy of zoledronate as treatment for ONFH compared to placebo in reducing progression to femoral head collapse and need for THR over 1 and 3 years, in addition to the effect on pain and function.

Method. In this double-blind randomised controlled trial at eight Australian sites 44 patients with early-stage ONFH were randomised by centre 2:1 to receive infusion of 5mg zoledronate or normal saline at baseline, 12 and 24months. MRI assessed femoral head collapse at baseline, 12 and 36months, in addition to outcomes of THR, pain and function.

Results. From 2009-2013, 28 participants received zoledronate and 15 received placebo. 15(54%) of the zoledronate group reported mild flu-like symptoms following infusion. Groups were well matched for pain, function and MRI grading at baseline. By November 2017 (mean follow-up 59mths), 9(36%) of zoledronate group and 7(47%) of placebo group had THR (not statistically different). At 12months, pain and function were significantly better in zoledronate group than placebo (Harris Hip Score: 92.1 vs 81.9, p=0.010), however improvement between groups did not reach statistical significance. Preliminary MRI readings showed improvement in Ficat staging in 2(10%) of zoledronate group but none of the placebo group. Of those who had 12mth MRI, 16/17(94%) zoledronate participants showed no change in cortical collapse from baseline, compared with 4/10(40%) in the placebo group(p=0.002).

Conclusion. Zoledronate and placebo groups did not differ in progression to THR, although significantly more zoledronate patients had no change in degree of cortical collapse than placebo over 12mths. There was a trend for clinical improvement in pain and function at 12months after zoledronate infusions however not statistically different to placebo.

P123
BIOSIMILAR MEDICINE IS ACCEPTABLE TO PATIENTS IF RECOMMENDED BY A RHEUMATOLOGIST IN AN AUSTRALIAN TERTIARY RA COHORT

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Aims. Biosimilars are being adopted in Australia and worldwide to improve affordability and access to treatment. Current literature has focussed on physicians' confidence in biosimilars. An effective introduction of biosimilars requires an understanding of patient acceptance of these agents. This study aims to investigate patient awareness and attitudes to biosimilar medicine in a tertiary hospital RA clinic.

Methods. A cross-sectional study of 127 patients with RA was performed. A brief education on biosimilars was provided. Patients rated concerns regarding biosimilar efficacy, side-effects and general concerns on a ten-point scale.

Results. 45.2% of our cohort have received biological DMARDs. Only 5.6% have some knowledge of biosimilars, 75.4% would accept biosimilars if their rheumatologist recommends it, with only 5.6% refusing to switch. 19% of patients were unsure. Of those refusing biosimilars, the main concerns related to efficacy and general concerns about change. In our RA cohort, 61.9% took generic medicines regularly and 84.6% of these would also be comfortable taking biosimilars. In those refusing generic medicines (27%), 61.8% would be still comfortable taking biosimilars. 15.9% and 12.7% of patients had great concerns about the efficacy and safety profile of biosimilars, respectively. 26.2% were worried that their physician may be unaware if they were receiving the biosimilar or reference product.

Conclusion. Despite being unfamiliar with biosimilars, most patients in our cohort would be comfortable taking biosimilars if recommended by their rheumatologist, highlighting the role of trust in doctor-patient relationships. Of patients usually refusing generic medicines, nearly two-thirds would still accept biosimilars. Australian pharmacists can substitute biological DMARDs without informing the prescriber. This concerns prescribers in Australia and overseas (88-95%). The majority of patients in our study were not concerned, whilst approximately one quarter were worried about unrecognised switching.