PODIUM PRESENTATIONS

1

SUSTAINED T CELL ACTIVATION PROMOTES DISEASE ACTIVITY IN LUPUS Carolina Landolt-Marticorena, Charmaine Ferguson, Thulasi Unnithan, Dafna Gladman, Murray Urowitz, Paul R. Fortin, Joan. E. Wither (Toronto Western Research Institute, Toronto, ON, Canada)

Objectives: To define cellular biomarkers of disease activity in lupus.

Methods: Patients (n = 39) were recruited from the University of Toronto Lupus Clinic if they satisfied > 4 ACR criteria. Clinical and demographic information was obtained for all study participants. Cellular phenotyping of peripheral blood lymphocyte subsets was performed by flow cytometry and the statistical significance of comparisons between groups examined by the Mann-Whitney non-parametric test.

Results: 14 of the patients were categorized as having moderate to high disease activity (SLEDAI > 7, termed active, mean SLEDAI 13.9 +/- 7.1) and the remainder (n = 25) as low, predominantly serologic, disease activity (termed inactive, mean SLEDAI 1.9 +/- 2.0). The mean age of the populations were 34.2 +/- 12.3 for active and 45.8 +/- 15.4 for inactive patients, with the majority of both populations female (active = 86%, inactive = 92%). Active lupus was associated with a relative increase in the naive B cell compartment (CD20+ CD27-, $p < 0.05$) and a decrease in the memory B cell compartment (CD20+ CD27+ CD38-, $p < 0.001$), suggesting that there is increased recruitment of B cells out of the memory and into the "effector" compartments in active disease. In keeping with this conclusion a trend towards increased plasma cells (CD20+ CD19- CD27++ CD38++) was noted in active lupus patients. Polyclonal B cell activation, evidenced by elevated proportions of CD69+, CD80+ and CD86+ cells, was independent of disease activity, with even inactive patients having marked B cell activation. In contrast, an expansion of the T cell memory/"effector" compartments (CD4+ CD45RO+, $p < 0.05$; CD8+ CD45RO+, $p < 0.05$) but not recently activated (CD69+) T cells was noted in active lupus patients. These findings suggest that sustained T cell activation promotes disease activity. Notably, this increased activation was not associated with significant changes in the proportion of Treg or NKT cells, two populations that have been shown to regulate autoimmunity.

Conclusions: Active disease is associated with recruitment of B cells into effector B cell compartments and an increase in sustained T cell activation. Our findings suggest that perturbations in the T cell compartment in the context of a primed B cell compartment promote disease activity.

2

RELATIONSHIP BETWEEN SPINAL MOBILITY AND RADIOGRAPHIC DAMAGE IN ANKYLOSING SPONDYLITIS (AS) AND PSORIATIC SPONDYLITIS (PSP) Vinod Chandran, Finbar O'Shea, Catherine Schentag, Dafna Gladman, Robert Inman, INSPIRE study group (Toronto Western Hospital)

Objectives: To correlate various measures of spinal mobility used in the assessment of Spondyloarthritis with radiographic severity, and to compare axial AS and PSp in this clinical-radiographic correlation.

Methods: As part of an INternational SPondyloarthritis Inter-observer Reliability Exercise (INSPIRE), 20 SpA experts from 11 countries met together for a physical examination exercise assessing 19 SpA patients. 10 PsA patients with axial involvement (9 males, 1 female, mean age 52, disease duration 17 yrs) and 9 AS patients (7 males, 2 females, mean age 38, disease duration 16 yrs) participated in the study. The median of the spinal measurements that were demonstrated to be reliable in the INSPIRE study were compared with cervical, lumbar spine and pelvis X-rays on all 19 patients. Modified Stokes AS spinal score (mSASSS) and Bath AS radiology index (BASRI)-spine were calculated by consensus of 2 assessors. Spearman correlation with bias correction was used to correlate clinical spinal assessments and radiographic scores.

Results: The mean mSASSS score in AS and PSp were 16.6 (range 1-72) and 13 (range 0-46), respectively. The corresponding BASRI-spine scores were 7 (range 6-12), and 7 (range 1-10.5), respectively. The two radiographic measures performed comparably in relation to clinimetrics in the SpA group as a whole. There was very good correlation between mSASSS and the Occiput to wall distance, tragus to wall distance, modified Schober test and lateral spinal flexion in the entire group (Spearman correlation coefficient >-0.64, $p<0.05$). There was also good correlation between mSASSS and cervical rotation and chest expansion (correlation coefficients -0.58 and -0.54, $p<0.05$ respectively). The clinimetric-radiographic correlations were comparable in the AS and PsA for the following: occiput-to-wall, tragus-to-wall, chest expansion, Schober test and lateral spinal flexion. The physical measure which demonstrated a differential correlation with radiographic severity in AS vs. PSp was cervical rotation, which correlated better with mSASSS in PsA than in AS.

Conclusions: This study provides evidence supporting the application of radiographic and clinical measures used in AS to studies of PSp. This study also provides a framework to analyze these clinical measurements as surrogate markers for structural progression in long-term studies of both AS and PSp.

3

FAMILIAL AGGREGATION OF PSORIATIC ARTHRITIS (PSA): PRELIMINARY ANALYSIS OF 100 CONSECUTIVE FAMILIES OF PATIENTS WITH PSA Vinod Chandran, Fawnda Pellett, Catherine Schentag, Dafna Gladman (Toronto Western Hospital)

Objectives: To determine the recurrence risk of psoriatic arthritis (PsA) and psoriasis in first degree relatives (FDRs) of patients with PsA.

Methods: All available FDRs (full siblings, parents, children) of 100 consecutive consenting patients attending a PsA clinic were evaluated for the presence of uncomplicated psoriasis, PsA, and other arthritides using a standard protocol. The protocol includes a questionnaire, physical examination by a rheumatologist, radiographic and laboratory examination, wherever indicated. Prevalence of PsA and psoriasis in FDRs (siblings) was determined and recurrence risk ratio [the prevalence of the disease in FDRs (siblings) divided by the prevalence in the general population - lambda1 (lambdaS)] was calculated, assuming a population prevalence of PsA of 0.25%, and population prevalence of psoriasis of 2%.

Results: To recruit 100 patients with PsA, 181 consecutive patients were approached. The mean ages of the probands (50 males)were 51.3 years, and the mean PsA duration was 18 years. The mean age at onset of psoriasis and PsA was 28.1 and 33.3 years, respectively. The mean actively inflamed joint count (JC) was 4.5, swollen JC was 1.6 and clinically damaged JC was 9.5. The mean radiographic damage score (modified Steinbrocker) was 8.9, and 60% had radiographic spondylitis. The mean PASI score was 3.2. The 100 probands had 529 relatives. 84 of them were deceased and 65 were unavailable (old age, age <15 years). Of the remaining 380 FDRs, 108 did not participate (living too far away, did not consent). Thus, 272/380 (71.6%) of the available FDRs participated in the study. There were 118 siblings, 103 parents and 51 children. 18 of the 272 FDRs had PsA, and 42 had psoriasis. Therefore, the prevalence of PsA and psoriasis among FDRs was 6.6% and 15.4%, respectively. The lambda1 was 26.4 for PsA, and 7.7 for uncomplicated psoriasis. 7 of the 118 siblings had PsA, and 22 had psoriasis. The prevalence of PsA and psoriasis in siblings was 5.9% and 18.6%, respectively. The lambdaS was 23.6 for PsA and 9.3 for psoriasis. When the lambda values were calculated for those FDRs and siblings of probands with early disease onset, there was no significant difference.

Conclusions: The recurrence risk ratio for both PsA and psoriasis is high in FDRs and siblings of patients with PsA. These results suggest that both PsA and psoriasis have a strong heritable component.

4

DIRECT AND INDIRECT COSTS OF RHEUMATOID ARTHRITIS ARE STRONGLY CORRELATED WITH DISEASE ACTIVITY AND FUNCTIONAL STATUS Wanruchada Katchamart, Xiuying Li, Claire Bombardier (Rheumatology division, Department of Medicine, University of Toronto, Toronto, ON, Division of Clinical Decision Making and Health Care Research, Toronto, ON)

Objectives: To investigate the effects of disease activity and functional status on direct and indirect costs for patients with rheumatoid arthritis (RA).

Methods: Fifty-three rheumatologists volunteered to recruit 272 consecutive RA patients. The rheumatologist completed the clinical data form including tender joint count (TJC), swollen joint count (SJC) and serum inflammatory markers (ESR). Two hundreds and fifty three RA patients completed a detailed questionnaire at baseline and 3 month. Information was collected on the demographics, comorbidities, health related quality of life and the Health Assessment Questionnaire (HAQ). Patients also completed a detailed, open-ended resource utilization questionnaire inquired about direct of medical and non-medical costs, indirect cost of patients' time lost from work and performing chores, and expenses incurred covering lost time for 6 months. Costs were derived as recommended by national and provincial database in 1999 Canadian dollars. The direct and indirect costs related to the Disease Activity Score 28 (DAS 28) were analyzed based on 138 RA patients who have complete DAS components including SJC, TJC, ESR and patient global assessment of disease activity.

Results: Of the 253 patients, 79.8% were women. Mean age was 57.1 13.3 years, disease duration 11.2 +/- 8.5 years, HAQ 1.2 +/- 0.7 and DAS 28 4.67 +/- 1.1. The 6 months direct, indirect and total costs were $ 2105, $ 2,498 and $ 4,604 CAD respectively. Both direct and indirect costs increased substantially with increasing disease activity determined by DAS 28 and severity of the functional disability determined by HAQ. The DAS28 was correlated with costs (Pearson r = 0.404, 0.388 and 0.251 for the total, direct and indirect cost respectively (P<0.003) But the HAQ showed stronger correlations with costs particularly with indirect cost (r = 0.562, 0.389 and 0.442 for the total, direct and indirect cost respectively: P<0.0001).

Conclusions: Disease activity measured by DAS 28 and functional status measured by HAQ are an important determinant of costs in RA patients. RA patients with higher disease activity or poor functional status incur higher costs.

5

HIGH RISK OF CARDIOVASCULAR EVENTS IN FIRST NATIONS WOMEN WITH COMBINED RHEUMATOID ARTHRITIS AND DIABETES Navjot K. Dhindsa, Diane S. Ferland, Andrea R. Craig, Hani S. El-Gabalawy, Christine A. Peschken (Univeristy of Manitoba, Winnipeg, Manitoba)

Objectives: Regional First Nations (FN) people have a high prevalence of both rheumatoid arthritis (RA) and diabetes mellitus (DM); cardiovascular disease (CVD) is the major cause of morbidity and mortality in both. The purpose of this study was to compare the frequency of CVD in FN and Caucasian (Cauc) RA patients with and without DM.

Methods: The Arthritis Centre maintains a prospective longitudinal database of all patients followed, including demographic, diagnostic, clinical, and laboratory data. A cohort of FN RA patients was abstracted from the database and matched 1:1-2 to Cauc RA patients for age, age of RA onset, gender and follow-up duration. Medical records were reviewed to determine presence of DM and CVD. DM was defined as per physicians report of the diagnosis or use of diabetic medications. CVD was defined as ACS event/CABG/angioplasty or CVA.

Results: The database contains records of 1612 RA patients, including 393 FN and 1102 Cauc. 302 FN patients were matched to 482 Cauc patients for a total of 784 RA patients. Mean age, disease duration and gender distribution were not different. Disease activity was higher in FN patients compared to Cauc (Physician Global Visual Analog Score (VAS) 35mm vs. 30mm, p=0.001; Lansbury Index 43 vs. 32, p<0.001). There were no differences in prednisone or DMARD use. 25% of FN were diabetic compared to 5% of Cauc (p<0.001), 8% of FN had had a CVD event compared to 4% of Cauc (p=0.023). CVD was associated only with male sex (11% vs 4% in females; p = 0.002), and higher VAS; 39mm vs. 31mm, p=0.018. In multivariate analysis, DM (OR = 4.6, p =0.003), and increasing age and VAS (OR = 1.1, p <0.001; and OR= 1.02, p=0.029 respectively), were significant predictors of CVD. There were interactive effects between sex, ethnicity and DM, with highest risk of CVD in diabetic FN females, (OR= 9.6, p=0.04). Prednisone use, DMARD use, ESR and CRP did not predict CVD.

Conclusions: This was a young cohort (75% under 60 years) with a high prevalence of CVD. DM was the single largest predictor of CVD, with highest risk in FN females. Given the high of DM and RA in FN, and further study is needed to identify modifiable CVD risk factors in this exceptionally high risk population.

6

1000 CANADIAN FACES OF LUPUS: A LOOK AT THE FIRST YEAR Steven Katz, Janet Pope, Paul Fortin, Earl Silverman, Gaelle Chedeville, Christine Peschken (University of Manitoba, University of Western Ontario, University of Toronto, McGill University)

Objectives: To investigate the influence of ethnicity, autoantibodies and socioeconomic factors on disease activity, organ involvement, and damage in this multicentre, multiethnic Canadian lupus cohort.

Methods: The 1000 Canadian Faces of Lupus study began enrolling both incident and prevalent lupus patients attending for care at participating sites in July 2005. Presented here are preliminary data on patients enrolled in the first year. Ethnicity, sociodemographic variables, autoantibodies, clinical features, damage and healthcare access were compared among patients from lupus clinics across Canada. Statistical analysis to compare demographic features, disease manifestations, and damage included T tests, one-way Anova, chi-square test, linear and logistic regressions.

Results: A total of 880 patients were enrolled from 5 centres, beginning in July 2005; 557 Caucasian Canadians (CC) (63%), 43 Aboriginal Canadians (AbC) (5%), 81 Asian-Canadians (AsC) (9%), 74 African Canadians(AfC) (8%), 22 of other ethnic backgrounds (3%), and 103 unknown (12%). This analysis includes only the 777 patients for whom ethnic background is recorded. Onset age was similar between CC, AbC, and AfC, but younger in AsC, while disease duration was shorter for all 3 minority groups compared to CC. Anti-Sm and anti-RNP were more frequent in all 3 minority groups, but highest in AfC and AsC patients. AbC patients had significantly higher smoking rates, higher BMIs, lower incomes and lower educational attainment compared to all other ethnic groups. Healthcare access (access to rheumatologists and primary care physicians, medication costs) were not different between the ethnic groups, and physicians reported no differences in care barriers such as language barriers, compliance, and medication access. Disease activity scores were higher in all 3 minority groups compared to Caucasians. Lupus nephritis was more frequent in AsC and AfC compared to CC and AbC patients, but total number of ACR criteria fulfilled were not different between any of the groups. Damage scores were highest in AbC patients compared to AsA, CC, and AfC. In multivariate analysis, only Aboriginal ethnicity and disease duration predicted greater damage, when age, disease activity, nephritis, and total ACR criteria were controlled for.

Conclusions: AbC lupus patients appear to accumulate the most damage compared to CC, AsC, and AfC patients, but this may be due to sociodemographic and behavioral factors rather than to greater lupus activity or severity. Aggressive risk management reduction and education may be of benefit in reducing damage accumulation, and further assessment is needed for this high risk group.

POSTERS

1

BRONCHIOLITIS OBLITERANS ORGANIZING PNEUMONIA (BOOP) IN A PATIENT WITH RHEUMATOID ARTHRITIS TREATED WITH INFLIXIMAB Rafat Faraawi (McMaster University)

Objectives: The role of anti-TNF therapy in inflammatory lung disease is unknown, but it has been reported that anti-TNF therapy in rheumatoid arthritis with underlying lung disease can cause severe fatal respiratory exacerbation.

Methods: We present a patient with rheumatoid arthritis, with no history of lung disease, treated with Infliximab and developed severe respiratory failure, secondary to bronchiolitis obliterans organizing pneumonia (BOOP).

Results: A 62-year-old, obese female with 6-years history of rheumatoid arthritis. She had been treated with combination of Methotrexate and Arava. In May 2002, Infliximab 3mg/kg was added to her treatment regimen due to

a flareup of her arthritis. Baseline chest x-ray was normal. There was no history of lung disease prior to Inflixmab therapy. A year later, she was hospitalized with severe respiratory failure. High resolution C-T scan revealed ground glass shadowing. Lung biopsy was consistent with BOOP. Bronchial wash and tissue culture showed no evidence of infection. She was intubated, ventialted and treated with high dose of steroid. She remained seriously ill for two weeks, then gradually improved and recovered.

Conclusions: Severe fatal exacerbation of interstitial lung disease in patients with rheumatoid arthritis treated with anti-TNF therapy have been well recognized. At least 12 cases with this complication have been reported. Peno-Green in Novemeber 2002 reported the first case of lung injury in a patient treated with Etanercept. Anti-TNF therapy should be used carefully in rheumatoid arthritis patients with underlying lung disease, as this is an important risk factor for this serious complication. We caution that this complication can also occur in patients with no underlying lung disease, similar to our case. Collection of these cases is important so a common pattern and risk factors of this serious complication can be established.

2

NEW ONSET PUSTULAR PSORIASIS IN PATIENTS WITH ANKYLOSING SPONDYLITIS DURING THE COURSE OF TREATMENT WITH INFLIXIMAB. Rafat Faraawi (McMaster University)

Objectives

Anti-TNF alpha agents are effective in the treatment of Rheumatoid Arthritis, Ankylosing Spondylitis, Inflammatory Bowel Disease and Psoriatic Arthritis. There are a number of reported cases of new onset psoriasis in these diseases during the course of treatment with anti-TNF.

Methods: We describe a case of Ankylosing Spondylitis treated with Infliximab who developed severe diffuse, pustular psoriatic skin lesions after the second dose of Infliximab therapy.

Results: A 33-year-old man presents with a 10-year history of Ankylosing Spondylitis. His symptoms have been controlled with anti-inflammatory medications. In June 2005, he presented with a few months history of severe lower back pain and stiffness. Blood test showed ESR of 40 MM/H, C-reactive protein of 69 MG/L. X-ray showed bilateral sacroiliitis.

In September 2005 he was started on Infliximab 5 mg/kg. After the second dose he developed a few erythematous, scaly skin lesions with pustules on the palms and the feet. After the third dose, the rash worsened and spread to involve the abdomen, chest and scalp. He was seen by a dermatologist who established the diagnosis of pustular psoriasis. Infliximab was discontinued. He was evaluated three months later, and the skin lesions remained unchanged, despite local therapy. Patient remains off Infliximab.

Conclusions: New onset psoriasis has been reported during the course of anti TNF therapy in Rheumatoid Arthritis, Ankylosing Spondylisits and Inflammatory Bowel Disease. This is an unexpected event as psoriasis is expected to improve with anti-TNF treatment.This event, although rare, has been reported with all anti-TNF agents and represents an adverse event to these agents (class effect) rather than a specific drug effect.The exact mechanism is not clear, but it could be due to changes in the homeostasis of TNF in the skin, which favours activation of psoriasis-specific, auto reactive T-cells and an increased expression of chemokine receptor. On reviewing the reported cases, psoriasis was mild and did not require discontinuation of anti-TNF therapy. In contrary, our case the psoriasis was severe and widespread, requiring extensive local therapy and discontinuation of Infliximab. In all cases, including our case, this adverse event occurs early in the course of anti-TNF therapy.Collection of these cases is important so a common pattern of this event can be established.

3

CLINICAL OUTCOMES OF A COHORT OF EARLY RHEUMATOID ARTHRITIS (ERA) PATIENTS: A NEWFOUNDLAND AND LABRADOR EXPERIENCE Kassem Abouchehde, Fraser Clift, Majed Khraishi, Karen White, Michelle Young (Nexus Clinical Research)

Objectives: 1. To describe the characterestics of a Newfoundland cohort of early rheumatoid arthritis(ERA) and their response to therapy.

2.to demonstrate the effectiveness of the early diagnosis and management of ERA utilizing experienced health professionals in rheumatology

Methods: Data were collected from patients (n=102) who were admitted to the ERA clinic between 2003 and 2006. They were evaluated by an expert nurse and a GP with special training in rheumatology. The assessments were validated by the rheumatologist.

The following criteria were predetermined to assess the possibility of ERA when reviewing patients referrals:

Joint pain localized in the hands and feet

Swelling of the hand and feet joints

Prolonged AM stiffness

Presence of rheumatoid factor (RF) positivity and elevation of ESR

Diagnosis of RA by the referring physician

The patients who were diagnosed with RA according to the ACR 1987 criteria and had two or more visits were included. We collected the Health Assessment Questionnaire (HAQ), the swollen joint counts (SJC), duration of symptoms from onset until first visit, ESR and CRP. We collected their treatment and response. Data were collected prospectively and reviewed retrospectively and analyzed for statistical comparisons using Students t-test (paired and unpaired) and ANOVA where applicable.

Results: Thirty-eight patients were identified with ERA and had multiple assessments(mean 4.5 +/- 2.9) . Females to Males ratio = 4.4. The mean age 53.3 +/- 15.7 years. Mean waiting period was 88.2 +/- 66.5 days. The mean duration of patients' symptoms was 12.2 months (+/- 11.6).

82% of ERA patients have positive RF and 71% elevated CRP. Initial ESR was 41.1 +/-29.6 mm/hr. Initial SJC was 8.9 +/- 6.5 at initial presentation. The initial mean HAQ was 0.88 +/- 0.57. Treatment with traditional DMARD (mainly a combination of methtrexate and hydroxychloroquin) resulted in significant reduction in ESR and SJC and HAQ (ESRf = 22.0 +/- 7.7 mm/hr; SJCf = 3.8 +/- 4.7), their HAQf was 0.45 +/- 0.49.

. Fifteen ERA patients achieved an SJC of zero.

Conclusions: In our ERA cohort a significant proportion of patients achieved remission when treated effectively in an early stage. Our patients have a high percentage of females and high RF positivity.The utilization of well-trained health professionals (a nurse and a GP in this case) may be an effective tool in early diagnosis and management of ERA.

4

LONG-TERM OPEN LABEL EXTENSION OF A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED TRIAL OF CONTROLLED-RELEASE (CR) TRAMADOL (ZYTRAM XL IN PATIENTS WITH CHRONIC OSTEOARTHRITIS PAIN Carter Thorne, Andre Beaulieu, William O'Mahony, John Sibley, John Bartlett, Gunnar Kraag, Paula S. Piraino, John Eisenhoffer, Zoltan Harsanyi, Andrew C. Darke (The Arthritis Program Research Group, Inc., Newmarket, ON, Centre de Rheumatologie St-Louis, Ste-Foy, QC, Corunna Medical Research Centre, Corunna, ON, Royal University Hospital, Saskatoon, SK, London Road Diagnostic and Medical Centre, Sarnia, ON, The Ottawa Hospital, Ottawa, ON, Purdue Pharma, Pickering, ON)

Objectives: To evaluate the long-term efficacy and safety of CR tramadol in chronic osteoarthritis pain.

Methods: Patients who completed a double-blind, placebo-controlled crossover study were offered open label CR tramadol for up to 6 months. The primary outcome was pain intensity (VAS and ordinal). Other questionnaires included: WOMAC, Pain and Disability (0-10 ordinal), Pain and Sleep (VAS) and SF-36. All assessments were completed every 2 months.

Results: Of 75 eligible patients, 53 (70.7%) chose to continue CR tramadol; 29 (54.7%) completed 6 months of open label treatment. Mean treatment duration was 133.0 3.2 days. The mean final CR tramadol dose was 313.2 00.1 mg/day, compared with 330.2 3.7 mg/day at the end of double-blind treatment. Pain intensity significantly decreased to 36.3 7.9 mm in the double-blind phase. This was maintained during open label (35.4 2.7 mm, p=0.7809). WOMAC subscale scores for pain and physical function were significantly decreased at the end of the double-blind phase (177.2 1.6 mm and 582.7 87.5 mm, respectively). Both were maintained throughout open

label (185.6 01.8 mm, p=0.5735; 609.1 64.3 mm, p=0.5664, respectively). Significant double-blind reductions in overall pain and disability (21.6 0.1) and overall pain and sleep scores (89.2 8.8) were sustained throughout open label (21.5 3.4, p=0.9660; 96.7 5.1, p=0.4555, respectively). Significant deterioration in the Physical Functioning and Physical Component scales of the SF-36 may be attributable to osteoarthritis progression. Most patients reported moderate (44.2%) or a great deal of benefit (42.3%) from CR tramadol.
Conclusions: Long-term CR tramadol treatment provided sustained pain control for up to 6 months without evidence of analgesic tolerance.

5

PEDIATRIC SYSTEMIC LUPUS ERYTHEMATOSUS (PSLE) DISEASE PRESENTATION AND DISEASE ACTIVITY MAY BE INFLUENCED BY ETHNIC ORIGIN. Linda T. Hiraki, Susanne M. Benseler, Pascal N. Tyrrell, Earl D. Silverman (Division of Rheumatology, Hospital for Sick Children, University of Toronto, Toronto, ON)

Objectives: Systemic lupus erythematosus has been observed to be a disease more common among visible minorities and potentially a more severe disease among Blacks and Latin Americans. To date there have been no comparisons of disease presentation and severity among pediatric SLE patients. Our objectives were to:
1.Review the ethnic origin of pSLE patients in comparison to the population of Metropolitan Toronto.
2.Compare disease presentation, major organ involvement, disease activity and disease damage between ethnic groups.
Methods: Retrospective chart and database review of an inception cohort of 265 pSLE patients diagnosed between June 1985 and July 2005, and followed at the Hospital for Sick Children, Toronto. Patient demographics including age, gender and self-designated ethnic origin were reviewed and patients were subsequently categorized into subsets of Caucasian, Black, Asian, South Asian, Aboriginal, Latin American and Arab. Patients of mixed ethnicity were excluded from further analysis. Demographic data, presence of renal and CNS disease and disease activity (as measured by SLEDAI) at presentation were compared among the ethnic subsets.
Results: The cohort consisted of 259 of 265 pSLE patients. The majority of pSLE patients were non-Caucasian (59%) as compared to the metropolitan Toronto population (40%). The non-Caucasian group was diagnosed at a younger age than the Caucasian group with Black patients composing the youngest group at diagnosis (12.4y vs. 14y, p=0.006). Renal disease was more prevalent in the non-Caucasian population than the Caucasian population (62% vs. 44%, p=0.01) with Asian patients having a higher prevalence of renal disease when compared to Caucasian patients (62% vs. 45%, p=0.015). There was no difference in the gender ratio, SLEDAI scores or prevalence of CNS disease (24% vs. 25%, p=1.0). However, when subsets were compared for CNS disease, there was a trend toward greater prevalence in the Black patients when compared to Asian patients (32% vs. 18%, p=0.108).
Conclusions: The majority of pSLE patients were non-Caucasian as compared to the metropolitan Toronto population. Non-Caucasian patients were diagnosed at a younger age although gender ratio and disease activity at diagnosis did not vary across ethnic groups. Renal disease was statistically significantly more prevalent among the non-Caucasian group with the highest prevalence in Asian patients. There was a trend toward greater prevalence of CNS disease in Black patients when compared with Asian patients.

6

A NEWFOUNDLAND EXPERIENCE OF BIOLOGIC RESPONSE MODIFIERS IN RHEUMATOID ARTHRITIS(RA) Stephany Pritchett, Gerry Mugford, Majed Khraishi (Nexus Clinical Research, Memorial University of Newfoundland)

Objectives: To review the profile of biologic therapies utilization, response and adverse events in RA in a rheumatology clinic in Newfoundland and Labrador
Methods: A retrospective study performed by auditing the charts of RA patients in a rheumatology practice in Newfoundland. Inclusion criteria were a diagnosis of RA and current treatment with a biologic agent. One researcher audited the selected charts and recorded the following information: basic patient data (age, gender, co-morbidities); disease data (duration of disease, RF factor status); past use of DMARDs and adverse effects; current and past use of Biologics (dosage, duration of use, adverse effects); serology before and after treatment [RF, ANA, CRP, ESR, hemoglobin(Hgb)]; disease status measures before and after treatment (joint counts and HAQ scores); PPD Tuberculin Test results.
Basic statistics were calculated on the collected data, including means, medians, modes, ranges and standard deviations.
Results: Seventy-five patients (48 female and 27 male), mean age of 53.5, were included in the study, the majority (73.3%) were RF positive. The mean duration of disease was 13.6 years. The mean number of DMARDs used was 3.9. Adalimumab was the biologic most utilized, followed by Etanercept. Adverse events were reported by 21.3% of subjects, the most common was viral illness (respiratory tract infections). The mean ESR was 38.6 mm/hour before treatment and 24.2 afterwards. The mean swollen joint count (SJC) was 10.7 and 5.5 before and after treatment respectively. The mean initial HAQ was 1.43 before treatment and 0.99 post-treatment. Mean pre-treatment Hgb was 119.22 gm/L for women and 135.21 gm/L for men. The post-treatment values are: 124.37 gm/L and 143.47 gm/L for women and men respectively. The patients with low pre-treatment Hgb had a mean change of 15.61 gm/L. Of patients who had PPD tests, 24% were positve (more than 5mm) and all were treated with Isoniazide.
Conclusions: Biologic agents utilized for the treatment of RA in a community clinical practice are effective and safe . The efficacy and safety outcomes in this setting were similar to data reported in the phase 2 and 3 studies. The patients in real life practice are probably less severe .We report that treatment with TNF antagonists can improve anemia associated with RA significantly. Our cohort has a high percentage of patients with positive TB test.

7

PATHWAYS TO PEDIATRIC RHEUMATOLOGY SUBSPECIALTY CARE IN BRITISH COLUMBIA Natalie Shiff, Reem Abdwani, David Cabral, Peter Malleson, Ross Petty, Kristin Houghton, Victor Espinosa, Lori Tucker (Division of Rheumatology, British Columbia Children's Hospital (BCCH), Vancouver, British Columbia)

Objectives: Early recognition of pediatric rheumatic diseases and prompt initiation of treatment are important to ensure a good outcome. The route by which patients come to the attention of pediatric rheumatologists in Canada is not well delineated. The aim of this study is to document the pathways taken by children in British Columbia referred to the Pediatric Rheumatology clinic at BCCH prior to receiving a definitive diagnosis and subspecialty care.
Methods: A prospective audit was conducted of new patients seen in the outpatient Pediatric Rheumatology Clinic at BCCH from March to August 2006. A questionnaire designed for this study was completed by parents accompanying their child through a guided interview.
Results: We report data from 60 new patient referrals, 37 with a rheumatic disease (including 5 with pain syndromes), and 23 with a non-rheumatic disease. The time from onset of first symptoms to the first healthcare provider visit was a median of 35.5 days (range 0 to 365 days), and the median time from this first assessment to referral to pediatric rheumatology was 116 days (range 2-2231days). The median time from referral to being seen in the pediatric rheumatology clinic was 45 days (range 1-365), the median time from the first symptom to the pediatric rheumatology referral was 160 days (range 2 to 2383), and the median time from the first symptom to the first pediatric rheumatology clinic appointment was 238 days (range 40 to 2476). A mean of 2.5 healthcare providers were seen (range 1-7) prior to pediatric rheumatology assessment, with an average of 6 healthcare provider visits (range 1-23). In children ultimately diagnosed with rheumatic diseases (excluding pain syndromes), there was a median of 209 days (range 27 to 2383) from the first complaint to a referral to pediatric rheumatology, while in those with non-rheumatic diseases the median was 109 days (range 2 to 1178) (p=0.055). In those with pain syndromes the median time from first complaint to pediatric rheumatology referral was 527 days (range 113-608).
Conclusions: Preliminary data document a delay between symptom onset

and referral to pediatric rheumatologists, which appears to be longer in patients with final diagnoses of rheumatic diseases than those with non-rheumatic diagnoses. Further study to determine modifiable factors contributing to these delays is important.

8

HETEROTOPIC OSSIFICATION FOLLOWING INTRA-ARTICULAR CORTICOSTEROID KNEE INJECTIONS IN JUVENILE IDIOPATHIC ARTHRITIS Sajdi Almutairi, Robyn Cairns, Richard Beauchamp, Christopher Reilly, Ross Petty (Division of Rheumatology, Department of Pediatrics, British Columbia's Children's Hospital, Vancouver, BC, Department of Radiology, British Columbia's Children's Hospital, Vancouver BC, Department of Orthopaedics, British Columbia's Children's Hospital, Vancouver, BC)

Objectives: To describe the previously unreported occurrence of periarticular heterotopic ossification following intra-articular corticosteroid injection in two children with juvenile idiopathic arthritis (JIA)

Methods: The medical records and imaging studies of two children with oligoarticular juvenile idiopathic arthritis and heterotopic ossification were reviewed.

Results: Two girls with oligoarticular JIA aged 11 and 12 years were noted to have hard peripatellar masses on clinical examination. There was no history of trauma or prolonged immobilization. Both had been treated with intra-articular triamcinolone hexaceonide. In one child, there were no symptoms; in the second, there was pain and restriction of range not attributable to inflammatory joint pain. Standard radiographs of the affected knees revealed the presence of heterotopic ossification.

Conclusions: Unlike periarticular calcification (which is quite common), heterotopic ossification may be a rare complication of intra-articular corticosteroid injection in children with JIA.

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SOLUBLE IL-2 RECEPTOR, A MARKER FOR T-LYMPHOCYTE ACTIVATION, IS INCONSISTENTLY ELEVATED IN PEDIATRIC PATIENTS WITH MACROPHAGE ACTIVATION SYNDROME Paivi Miettunen, Aarthi Jayanthan, Aru Narendran (Division of Pediatric Rheumatology, University of Calgary and Alberta Children's Hospital, Department of Oncology, University of Calgary, AB, Canada)

Objectives: Macrophage activation syndrome (MAS) in pediatric rheumatology refers to a set of symptoms caused by excessive activation and proliferation of mature macrophages, leading to an overwhelming inflammatory reaction. Clinically, MAS has strong similarities to familial hemophagocytic lymphohistiocytosis (FHLH) and has been recently reclassified as a reactive hemophagocytic lymphohistiocytosis (rHLH). Excessive activation of T-lymphocytes (TL) characterizes FHLH, and results in increased soluble interleukin-2 receptor (sIL2r) level which has become part of FHLH diagnostic criteria. There is limited data regarding sIL2r levels in rheumatic disease associated MAS. We hypothesized that if abnormal macrophage activation in MAS was primarily a result of abnormal TL activation, sIL2r level would be increased compared to healthy children with no evidence of MAS.

Objective: To test known MAS patients' sera for sIL2r level as a marker for T-lymphocyte activation.

Methods: Sera were collected from 6 patients with MAS (4F; 2M: ages 4, 5, 6, 12, 15 and 16 years) and from 2 patients with genetically confirmed FHLH (1F; 1M: ages 7 months and 7 years) and from one infantile patient with rHLH (F: age 21 days). The sera were collected at the time of MAS/HLH diagnosis, before treatment was initiated. All MAS patients met the criteria for (reactive) HLH as per Histiocytosis Society's 2004 criteria. 5/6 MAS patients had systemic onset JRA (SoJRA), and 1/6had Churg Strauss (CS). Sera from age and sex matched healthy children was used as controls. Blood was allowed to clot in 4 degrees of Celcius and serum was aspirated and stored at -20 C.

SIL2r level was measured by ELISA (Human soluble IL-2 receptor kit, Biosource).

Results: 3/6 patients with MAS (2 with SoJRA, one with CS) had elevated sIL2 r level (278, 506 and 172 U/ml respectively) compared to healthy controls (no measurable sIL-2r). The sIL2r values in MAS patients were lower than those in FHLH patients (4120 and 2393 U/ml). The infantile patient with rHLH had no measurable sIL2r.

Conclusions: 1) Soluble IL2 receptor level, an indicator of T-lymphocyte activation, was elevated in 3/6 MAS patients compared to healthy controls; although the level was much lower than in patients with FHLH. 2) While MAS is clinically similar to FHLH, the immunologic mechanisms may differ between inherited and reactive forms of HLH, as documented by inconsistently present sIL2r in patients with active MAS/rHLH.

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EFFECTIVE USE OF PAMIDRONATE IN SEVERE REFLEX SYMPATHETIC DYSTROPHY: A PEDIATRIC CASE REPORT Paivi Miettunen, Elaine Joughin (Division of Pediatric Rheumatology, University of Calgary and Alberta Chidren's Hospital, Calgary, AB, Canada, Department of Orthopedics, University of Calgary and Alberta Children's Hospital, Calgary, AB, Canada)

Objectives: Reflex Sympathetic Dystrophy/Complex regional pain syndrome I (RSD) is a painful condition with a protracted course in 20-40% patients. Increased bone turnover is postulated to play a central role in RSD. Antiosteoclastic agent, pamidronate, has been reported to be beneficial to adult patients with RSD . We now report a pediatric patient with severe RSD who was successfully treated with pamidronate; and provide data on urine N-telopeptide (NTX), a marker for collagen 1 breakdown, as a measure of bone turnover.

Case: A 13-year old girl was diagnosed with RSD of right leg in 2000. She developed pain and swelling around right knee after minor injury, which progressed to involve entire lower limb up to upper thigh. Deep vein thrombosis was ruled out. Her symptoms were unresponsive to NSAIDs, corticosteroids, clonidine, diuretics, local sympathetic nerve blocks and continuous epidurals. In 2003, she presented with ongoing pain, swelling and locally increased hair growth. There was 10cm difference in diameter between the right and left calves. Bone scan obtained prior to pamidronate treatment revealed hyperemia involving the right lower extremity, compatible with RSD.

Methods: IV-pamidronate was administered as 3 day cycles: 0.5 mg/kg on day 1, and 1mg/kg/day for each subsequent infusion. Frequency of dosing was once monthly x 4, then every 3 months x 4.

Additional data collected included:

1. Clinical photographs every 2 months.
2. Serial measurements of thigh and calf diameters.
3. VAS for pain, urine NTX, ESR, CRP, CBC, Ca and alkaline phosphatase were measured at baseline and at monthly intervals during pamidronate treatment.

The primary endpoint was disappearance of pain; the secondary endpoint was normalization of physical findings.

Results: 1. VAS for pain decreased from 10/10 to 3/10 by 3rd pamidronate infusions.

2. The difference between right and left calf diameters decreased from 10 cm to 1.5 cm by 6th pamidronate infusion.
3. Urine NTX decreased from baseline value of 109 to 27nmol/mmol creatinine by 1st pamidronate infusion. Other laboratory investigations were normal. Patient remains well with symmetrical leg diameters 18 months after discontinuation of pamidronate.

Conclusions: 1. IV pamidronate resulted in rapid and sustained pain relief, improved function, and soft tissue swelling resolution in a pediatric patient with recalcitrant RSD.2. Urine NTX was elevated at baseline, and rapidly decreased with 1st pamidronate infusion. This reduction correlated with decrease in soft tissue swelling, and with resolution of pain.

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PEDIATRIC TO ADULT TRANSITION CLINICS IN RHEUMATOLOGY: MAINTAINING QUALITY OF CARE Anne Marie Crawford, Nicole Fahlman, Nicole Johnson, Terri Lupton, Whitney Steber, Paivi Miettunen (Division of Rheumatology, University of Calgary, Calgary, AB, Canada,

Division of Pediatric Rheumatology, University of Calgary and Alberta Children's Hospital, Calgary, AB, Canada)

Objectives: To establish a structured transition clinic between the pediatric and adult health care systems for patients with childhood onset rheumatologic diseases requiring ongoing care into adulthood. Traditionally, patients with childhood onset chronic illnesses have a poor follow-up record once they graduate from the pediatric institute.

Methods: A practice audit of the four rheumatologists participating in the pediatric rheumatology clinic at the Alberta Children Hospital was conducted to identify the total number of patients over 16 years of age. To meet transition clinic guidelines patients had to have an inflammatory rheumatic condition with age of onset at < 16 years of age and fulfill one or more of the following inclusion criteria: active disease, polypharmacy, therapy with biologic agents or IV infusions, or care involving multiple specialties (nephrology, cardiology, endocrinology, ophthalmology, gastroenterology) +/- allied health care involvement. A clinic algorithm was created to transition patients from the pediatric to adult setting.

Results: 195 patients (pts) were identified > 16 years of age (72 pts > 18 years; 67 pts 17 years, and 56 pts 16 years of age). Of the 195 patients, 39 (54%) of >18-year old, 42 (63%) of 17-year old and 41 (73%) of 16-year old patients met the transition clinic guidelines.

The transition clinic opened in February 2006 and is held twice monthly with both pediatric and adult rheumatologists attending and with allied health support (nurse clinician, occupational therapist, physiotherapist, psychologist, social worker). Over the first 8 months, 51 patients were seen (41 female and 10 male), for a total of 91 patient visits. There were 5 o-shows Patients > 18 years of age were transitioned first, followed by the younger age groups. 14 /51 patients received ongoing allied health care. Diagnoses included ankylosing spondylitis (16 pts), juvenile indiopathic arthritis (16 pts) mixed connective tissue disease (3 pts), juvenile dermatomyositis (3 pts), systemic lupus erythematosus (3 pts), vasculitis (2 pts), and ther (8 pts). Patients follow a care algorithm that includes Boston ransition readiness questionnaire, disease specific measures and Health Assessment Questionnaire (HAQ).

Conclusions: Our results confirm the need for a transition clinic for patients with childhood onset rheumatic diseases in our region based on volume of patients meeting the inclusion criteria. o-show rate was low (5.2%). Allied health support was required by 27.4 %. By recognizing the differences between pediatric and adult services and implementing a coordinated care plan, successful transition can be achieved.

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RHEUMATOID ARTHRITIS AND GOUT OCCURRING TOGETHER: A NEW REALITY? Jesse Pewarchuk, Suki Dhillon, Elaine Yacyshyn (University of Alberta, Edmonton, Alberta)

Objectives:

Rheumatoid arthritis and gout rarely co-exist in the same patient, according to widespread belief. Less than 10 such cases have been reported in the English literature. We report a case series of five patients in whom both conditions were found to coexist.

Methods: Five patients with histories consistent with both Gout and Rheumatoid arthritis were found upon a practice review. The complete medical records of each patient were reviewed, with specific interest to symptom history, exam findings, serological tests and biopsy findings. Joint aspirate results were reviewed where possible. X-rays were reviewed by a radiologist for the presence of radiographic evidence of disease to evaluate for abnormalities of Rheumatoid Arthritis or gout.

Results: Four of the five patients with positive histories were shown to have objective findings clearly supportive of the diagnosis of both Rheumatoid arthritis and Gout. The clinical findings of Rheumatoid arthritis in all patients was further supported by serological findings of strongly positive anti-cyclic citrullinated peptide (CCP) antibody titers. Four of five patients demonstrated positive rheumatoid factors. Additionally, three patients were found to have nodules consistent with rheumatoid nodules, one of which was biopsy proven. Three of five patients were found to have compelling laboratory evidence supporting the diagnosis of Gout, including multiple positive joint aspirations and in one case, biopsy proven tophi; in two cases aspirations were not performed. Radiographic evaluations revealed 3 cases of minor changes with erosions consistent with Rheumatoid Arthritis over time.

Conclusions: Diagnosing Rheumatoid Arthritis versus gout is a difficult task. We conclude that we have uncovered the largest convincing series of coexistent Gout and Rheumatoid arthritis cases reported to date. We suggest that the coexistence of these two conditions is much more common than is reported and is under recognized. Biopsy proven tophi and rheumatoid nodules are unnecessarily strict criteria in other studies that have artificially suppressed reported cases. Using anti-CCP antibodies provides a unique means of helping diagnose Rheumatoid Arthritis. In the setting of an appropriate history and physical examination, cases of aspirate-proven gout and anti-CCP positive rheumatoid arthritis should be considered to be proven cases of disease coexistence.

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IMPROVING THE EFFECTIVENESS OF DIAGNOSIS AND TREATMENT OF OSTEOPOROSIS IN MEN AND WOMEN Carter Thorne MD, Ieva Fraser DipOT, Edward Ng MD (Southlake Regional Health Centre)

Objectives: To assess the impact of implementation of a combined multidisciplinary shared care approach to effective diagnosis and treatment of patients admitted with low impact fractures.

Methods: Osteoporotic fragility fractures are one of the most common causes of disability and a major contribution to medical costs. Recent reports have indicated that patients who sustain fragility, low-trauma fractures of the spine, hip are frequently not diagnosed, evaluated, or treated for osteoporosis. We present the data on a retrospective analysis of patients admitted to the community based hospital at Southlake Regional Health Centre in Newmarket, Ontario ,Canada secondary to low impact spine or hip fractures. In this study, we evaluated the efficacy of an intervention designed to improve detection and treatment of osteoporosis following a multidisciplinary hared-care model, from both the orthopedic and rheumatology service

Results: The change in rate of diagnosis and treatment for osteoporosis are highlighted between the two study periods, 1999 (pre shared care) compared with 2004, demonstrating a higher rate of diagnoses, workup and treatment of osteoporosis with a combined orthopedic/rheumatology shared-care model. Subsequent analysis at one year follow-up suggest that treatment and ongoing monitoring for osteoporosis should remain vigilant for the best treatment model in high-risk patients for osteoporosis.

Conclusions: A multidisciplinary, "shared-care" effort between the orthopedic service and rheumatology service is a viable model for delivering appropriate treatment for a poorly managed disease. The detailed results of this evaluation will be presented in the poster presentation at the 2007 meeting of the Canadian Rheumatology Association Meeting.

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PROLONGED EFFICACY OF RITUXIMAB IN PATIENTS WITH RHEUMATOID ARTHRITIS AND AN INADEQUATE RESPONSE TO METHOTREXATE: 1-YEAR FOLLOW-UP OF A SUBSET OF PATIENTS RECEIVING A SINGLE COURSE IN A CONTROLLED TRIAL (DANCER TRIAL) P Emery1, K Shojania2, R Fleischmann3, E Martin-Mola4, J Schechtman5, R F van Vollenhoven6, J Alloway7, V Mitchell8, J Garg9, T Shaw8 (1Rheumatology Department, Leeds General Infirmary, Leeds, United Kingdom, 2Arthritis Research Centre of Canada and Division of Rheumatology, University of British Columbia, Vancouver, British Columbia, Canada, 3University of Texas Southwestern Medical Center, Dallas, Texas, United States, 4Dept of Rheumatology, Hospital Universitario La Paz, Madrid, Spain, 5Sun Valley Arthritis Center Ltd, Glendale, Arizona, United States, 6Rheumatology Dept, Karolinska University Hospital, Stockholm, Sweden, 7Physicians East, Greenville, North Carolina, United States, 8Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, 9Clinical Development, Genentech Inc, South San Francisco, California, United States)

Objectives: To examine the long-term efficacy of a single course (2 infusions 2 weeks apart) of rituximab (RTX) in patients (pts) with rheumatoid arthritis

(RA) and an inadequate response to DMARDs including TNF inhibitors.
Methods: Pts who had active RA despite treatment with MTX were randomized into a Phase IIb trial (DANCER) (1) and received placebo or RTX at either 500 mg or 1000 mg given on Days 1 and 15. Pts were randomized to 1 of 3 different glucocorticoids (GC) regimens. As the 24-week analysis showed no effect of GC regimen on efficacy, data were pooled by RTX dose irrespective of GC treatment. After Week 24, pts could exit the study and receive further RTX treatment. Pts remaining in follow-up received no further treatment apart from ongoing MTX; pts and investigators remained blinded. ACR responses were determined for pts completing 48 weeks of follow-up.
Results: A total of 465 pts were recruited; 40/149 MTX + placebo pts (27%), 60/124 on RTX 500 mg (48%), and 95/192 on RTX 1000 mg (49%) completed 48 weeks follow-up. The primary reason for withdrawal was insufficient or loss of response: most pts transitioned to an open-label RTX repeat-treatment protocol. An ACR20, 50, or 70 response was sustained in more pts in the RTX 1000 mg group (59%, 38%, and 17%, respectively) and the RTX 500 mg group (67%, 42%, and 20%, respectively), compared with pts in the MTX + placebo group (45%, 20%, and 8%, respectively). More pts in the RTX 1000 mg and RTX 500 mg groups also achieved low disease activity (22% and 23%, respectively) and remission (16% and 10%, respectively) compared with placebo pts (15% and 5%, respectively). The 1000 mg x 2 dose was also associated with a longer-lasting response, as shown by the longer time to requirement of a repeat course (414 days vs 379 days for the 500 mg dose). Over the 48 weeks, a total of 11 serious infections were reported: 3 in pts receiving placebo (2%) and 8 in pts receiving RTX (2.5%). Except for a single event, all serious infections had resolved by the time of the data cut.
Conclusions: Following a single treatment course of RTX, extended efficacy was observed in a subset of pts for 48 weeks or longer. Reference: 1. Emery, et al. Arthritis Rheum 2006;54:1390 400

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SAFETY OF TNF INHIBITORS IN RHEUMATOID ARTHRITIS PATIENTS PREVIOUSLY TREATED WITH RITUXIMAB F. C. Breedveld, M.M. Khraishi, M. Genovese, P. Emery, L. W. Moreland, E. Keystone, E. L. Matteson, L. Burke, S. Agarwal, D. Kim, S. Cooper (Department of Rheumatology, Leiden University Medical Centre, Leiden, Nexus Clinical Research and Memorial University of Newfoundland , St. John's ,Canada, Department of Immunology and Rheumatology, Stanford University School of Medicine, Rheumatology Department, Leeds General Infirmary, Leeds,, Rheumatology Department, University of Alabama School of Medicine, Alabama, Rheumatology Department, University of Toronto, Toronto, Division of Rheumatology, Mayo Clinic College of Medicine, Rochester, Minnesota, , Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, Clinical Development, Genentech Inc, South San Francisco, California, Biogen Idec, San Diego, California, United States)
Objectives: A preliminary analysis to assess the safety of TNF inhibitors given to patients (pts; n=78) with active rheumatoid arthritis (RA) who had withdrawn from clinical studies after receiving rituximab (RTX).
Methods: To date, a total of 1039 pts with active RA have been exposed to RTX either in randomized or open-label studies. Seventy-eight (7.5%) pts who had withdrawn from those studies subsequently received one or more TNF inhibitors (etanercept 23 pts; infliximab 23 pts; adalimumab 25 pts; >1 TNF inhibitor [not concurrent] 7 pts) in safety follow-up. All pts had peripheral B cell levels below the normal limit at the time of TNF inhibitor therapy. Peripheral B cell counts were monitored at regular intervals for at least 48 weeks after RTX therapy or until they returned to pre-RTX baseline levels or within normal limits.
Results: Total pt-years of exposure were 57.4 prior to TNF inhibitor treatment (subsequent to RTX) and 52.5 following TNF inhibitor administration. Of the 78 pts in the group, 14 (18%) experienced a total of 22 adverse events (AEs) (10 of which were serious). These included RA flare (3 pts), pleuritic pain (2 episodes in 1 pt), deep vein thrombosis (1 pt), and infections (4 pts consisting of 2 skin infections [erysipelas and cellulitis], 1 bacterial arthritis and 1 aseptic meningitis). Prior to TNF inhibitor administration, 3 serious infection events were reported in the group compared with 4 following TNF inhibitor treatment. The rate of serious infections in pts receiving a TNF inhibitor (subsequent to RTX) was similar to the rate seen prior to the administration of the TNF inhibitor, with a wide and overlapping confidence interval (7.62 events/100 pt-years [2.9 0.3] vs 5.23 events/100 pt-years [1.7-16.2], respectively).
Conclusions: These preliminary findings indicate that the overall incidence of AEs in RA pts receiving TNF inhibitors after RTX was low. The rate of serious infections with TNF inhibitors given after RTX in this series appears to be consistent with the rate reported for de novo use of TNF inhibitors in RA pts (6.39 events/100 pt-years) (1), despite peripheral CD20+ B cell depletion, although further investigation in larger numbers of pts over time is warranted.

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THE MAJORITY OF PATIENTS WITH AUTOANTIBODIES TO GWBS HAVE NEUROPATHIES AND/OR SJOGREN'S SYNDROME Rahima A Bhanji, Theophany Eystathioy, Edward K.L. Chan, Marvin J Fritzler (Department of Biochemistry and Molecular Biology, University of Calgary, Calgary, AB current address: Faculty of Medicine, University of Alberta, Edmonton, AB, Department of Biochemistry and Molecular Biology, University of Calgary, Calgary, AB, Departments of Oral Biology and Anatomy & Cell Biology, University of Florida Gainesville, Florida)
Objectives: GWB are 100 300 nm cytoplasmic structures involved in mRNA processing and RNA interference (RNAi) that contain three unique and related proteins, GW182, GW2, and GW3, all of which are characterized by glycine (G) and tryptophan (W) repeats and RNA recognition motifs (RRM). GWBs also contain messenger RNA, microRNA (miRNA), and the Argonaute 2 (Ago2) protein; the latter two are components of the RNA-induced silencing complex (RISC).The objective was to study the frequency of autoantibodies directed to GW bodies (GWB) autoantigens in 55 patients with anti-GWB antibodies.
Methods: To determine the identity of the most common GWB autoantigens, we tested the 55 patient sera for reactivity to GW182, GW2, GW3, Ge-1/Hedls, Rap55, and Ago2, using an addressable laser bead immunoassay (ALBIA). Reactivity to GW182, Ago2, Ge-1/Hedls and RAP55 (Ge-1 and RAP55 cDNAs courtesy of Dr. D. Bloch, Boston, MA) were also tested by in vitro transcription and translation of the respective cDNAs followed by immunoprecipitation (TnT/IP). In addition, peptide arrays that included sequential, overlapping 15mer peptides, representing the full length of Ago2, and Ge-1/Hedls proteins were used to determine antibody reactivity and epitope mapping.
Results: The largest disease groups with anti-GWB antibodies included one that had neurological symptoms (i.e. ataxia, motor and sensory neuropathy) (31%) and another with Sjogren's syndrome (SjS) (36%). Moreover, 50% of the patients with anti-GWB antibodies had reactivity to SSA-Ro52, but this reactivity was not specific to SjS. ALBIA and TNT/IP results indicated that the two most common autoantigens were Ge-1/Hedls (58%) and GW182 (40%). Common epitopes were identified in the N-terminus of Ago2 and the nuclear localization signal (NLS) of Ge-1.
Conclusions: This study indicates that the most common autoantigen targets in GWBs are Ge-1/Hedls and GW182. This is the first analysis of multiple GWB components and proteins in the RNAi pathway that react with sera from patients with anti-GWB antibodies. The significance and possible pathogenic role of these autoantibodies in the context of SjS and certain neurological diseases is under investigation.

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METABOLITE BIOMARKERS OF SCLERODERMA ELUCIDATED USING 1H NMR METABOLOMICS Aalim M. Weljie, Liam Martin, Marvin J. Fritzler, Hans J. Vogel, Theophany Eystathioy (Metabolomics Research Centre, Department of Biological Sciences, University of Calgary, Calgary, AB , Division of Rheumatology and McCaig Centre for Joint Injury and Arthritis Research, University of Calgary, Calgary, AB)
Objectives: A metabolic profiling approach was used to investigate manifestations of metabolic changes in sera from patients with systemic sclerosis (SSc).

Methods: Sera from 15 SSc patients were analyzed and compared to samples from eleven normal adults. The sera were collected using a standardized protocol and stored at -70C. The sera were analyzed using 1H NMR spectroscopy, and concentrations of metabolites determined using a targeted profiling approach. ANOVA was employed for all measures of univariate significance.

Results: Highly significant reductions in the concentrations of methionine ($p=6.5x10-8$), and pyroglutamate ($p=4.6x10-6$) were observed in the scleroderma patients relative to controls. Highly significant increases in concentration were noted for adipate ($p=5.7x10-7$), isobutyrate ($p=7.1x10-7$), suberate ($p=1.4x10-5$), and phenylalanine ($p=5.2x10-5$). Other disease down-regulated metabolites include hypoxanthine, lactate, and threonine ($p<0.05$), which upregulated were 2-hydroxybutryate and choline ($p<0.05$). MANOVA testing of the bioprofile consisting of the statistically significant metabolite concentrations from univariate analysis indicate that the overall profile is highly discriminatory ($p=2.8x10-7$). This result is corroborated by multivariate analysis using orthogonal partial least squares discriminant analysis (OPLS-DA). A model was generated which explained 93.8% of the data, with very high predictive value ($Q2=0.938$). Loadings coefficients from the model identify the same subset of compounds as noted above.

Conclusions: The scleroderma metabolite ioprofile identified in this study suggests alterations in several significant areas of metabolism:1) elevation of the dicarboxylic acids adipate and suberate indicates elevated omega-oxidation and impaired mitochondrial beta-oxidation, possibly due to carnitine deficiency, 2)decreased levels of methionine, pyroglutamate, and hypoxanthine are indiciative of oxidative damage, and pyroglutamate (5-oxoproline) may also be a measure of collagen turnover, 3)2-Hydroxybutryate and choline increases indicate lipid involvement.The bioprofile of SSc sera identified in this study has potential as a diagnostic and/or prognostic pattern of clinical health status and further investigations are ongoing with respect to the sensitivity and specificity of our findings. We believe that that such a pattern will be crucial in the provision of individualized medicine.

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RHEUMATOID VASCULITIS PRECIPITATED BY GRANULOCYTE COLONY STIMULATING FACTOR (G-CSF) IN A PATIENT WITH PSEUDO-FELTY'S SYNDROME Elizabeth Hazel, Jennifer Nguyen, Laeora Berkson (McGill University Health Centre, Montreal, Quebec, Jewish General Hospital, Montreal, Quebec)

Objectives: To describe a rare complication of the large granulocytic lymphocyte (LGL) syndrome precipitated by G-CSF.

Methods: Case Report

Results: A 71 year-old man presented to our institution with a rash on his hands and an exacerbation of his rheumatoid arthritis (RA).

He had been diagnosed with RA thirty years previously. His initial work-up revealed a lymphocytosis with atypical lymphocytes which were later identified as LGL cells. His systemic symptoms and arthritis responded promptly to corticosteroids and for decades his disease was quiescent on low doses of methotrexate and corticosteroids.

Six months prior to admission, he had an episode of febrile neutropenia and was started on G-CSF to prevent further infections.

On admission to our service, he complained of fever, cough, night sweats, arthritis and a rash.

Physical exam revealed a gentleman in moderate distress. He was febrile and tachycardic. General medical exam revealed no nidus of infection. Examination of his skin was remarkable for multiple painful cherry-red macules on his hands. He had several peri-ungal splinter hemorrhages and small digital infarctions. Articular exam confirmed active arthritis in his wrists and the small joints of his hands and feet.

He was neutropenic and was treated according to protocol with broad spectrum antibiotics. His septic work-up and investigations were negative. He was seen by dermatology and a punch biopsy of a palmar macule showed an acute leukocytoclastic vasculitis of the upper and mid dermal venules with micropurpura and fibrinoid damage with overlying acute ulceration.

G-CSF was discontinued and his rheumatoid vasculitis, athritis and fever resolved without additional therapy.

Conclusions: The LGL syndrome is characterized by lymphocytosis, bone marrow infiltration with LGL cells, granulocytopenia and anemia. One third of patients have a polyarthritis resembling RA. Unlike Felty's disease, the extra-articular features of RA are rare.G-CSF is a well known pro-inflammatory cytokine and has previously been implicated in the reativation of other autoimmune disorders. There are case reports describing flares of arthritic and extra-articular features of Felty's syndrome but to our knowledge, this is the first case of rheumatoid vasculitis precipitated by G-CSF in the LGL syndrome. The management of the infectious complications of patients with the LGL syndrome can be challenging and the use of G-CSF may be warranted. Clinicians should be aware of the potential pro-inflammatory effect of this therapy and be vigilant to its complications.

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DEVELOPMENT AND EARLY EVALUATION OF AN INTERDISCIPLINARY POST-GRADUATE ACADEMIC AND CLINICAL EDUCATION PROGRAM IN ARTHRITIS CARE FOR EXPERIENCED PHYSICAL AND OCCUPATIONAL THERAPISTS Dr. Rachel Shupak MD, Dr. Katie Lundon PT, Phd, Dr. Rayfel Schneider MD, Dr. Jodi McIlroy PT, Phd (ACPAC Program Director, St. Michael's Hospital, ACPAC Program Coordinator, St. Michael's Hospital, The Hospital for Sick Children, University Health Network, University of Toronto)

Objectives: The Advanced Clinician Practitioner in Arthritis Care (ACPAC) Program is an innovative, pilot, clinical/academic training program hosted by St. Michael Hospital in collaboration with The Hospital for Sick Children, Toronto, Canada.

The ACPAC program was designed to provide advanced clinical and academic training in arthritis care to experienced Physical and Occupational Therapists. The goal of this program was that these clinicians return to an expanded scope of practice role with the aim to provide timely and appropriate delivery of health care to patients in Ontario living with arthritis.

Methods: Based on the identified goal and objectives of the ACPAC program:

1. Specific competencies for the advanced practitioner were developed.
2. An episodic, one week per month x 10 months, modular-based academic and clinical curriculum was designed to reflect desired skills and knowledge (competencies) to be learned/achieved. The five modules included Basic Science Theory Underlying Musculoskeletal Practice (n=1:52 hours), Foundations of Clinical Practice (n=1:54 hours), Therapeutic Management (n=1:60 hours), and the Art and Science of Clinical Practice (n=2:160+ hours).
3. Rigourous evaluation methods to measure change in skills and knowledge were established including a pre/post-program MCQ exam, pre/post-practical skills exam, case report write-ups (n=5), self-directed portfolio/structured learning projects, problem based learning case vignettes, and a final 360. Self-report surveys were offered at baseline, mid-point and end program and were designed to capture change in practice patterns, as well as perceived enhancers/barriers to the clinician expanded scope of practice across the training period.

Results: Five trainees (3 PTs, 2 OTs) successfully completed (achieved > 70% and/or met expectations) the 2005-2006 program; eight trainees are currently enrolled in 2006-2007. 100% of all participants stated that the course was relevant to their practice, met stated objectives and would alter their practice performance. There was significant change in skills and knowledge as measured by a practical skills ($p<.005$) and theory exam ($p<.001$). Participants reported improved knowledge, skills and frequency in performance of some clinical tasks.

Conclusions: Extensive evaluation of the trainees and program is an integral part of measuring the outcome process. Current research effort aims to determine the extent to which participants clinical practices change in their expanded scope of practice roles. Further research on the impact of the practitioner model on patient care is needed.

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DISEASE ACTIVITY OVER TIME IN SYSTEMIC SCLEROSIS Jennifer

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Objectives: Until recently, there was no overall measure of disease activity in systemic sclerosis (SSc). Thus, little was known on the pattern of disease activity over time in this disease. In 2001, a Scleroderma Disease Activity Index (SDAI) was proposed. We undertook this cross-sectional study to describe the pattern of disease activity over time in SSc using this Index.

Methods: The study subjects consisted of patients enrolled in the Canadian Scleroderma Research Group (CSRG) Registry. Patients in this Registry are recruited from the practices of 15 rheumatologists across Canada and undergo a standardized assessment, including a history and physical exam, and laboratory testing. Disease activity was measured using the SDAI, a physician global assessment of disease activity and a patient global assessment of disease severity (all with ranges 0-10). Duration of disease was measured as the time between the onset of the first non-Raynaud manifestation of SSc and the time of the Registry baseline visit. Disease activity was assessed as a function of disease duration for the whole cohort as well as for subsets of patients with limited and diffuse disease.

Results: There were 413 patients studied (86% women, mean age 55 (+/- 13), ratio of limited to diffuse disease 1:1). Overall, mean SDAI, physician global assessment and patient global assessment were 2.8 (+/- 2.1), 2.2 (+/- 2.0) and 3.6 (+/- 2.6), respectively. Mean disease duration was 11 years (+/- 9). In general, SDAI was approximately 4 in the first few years of disease, gradually fell to 2 over the next 10 years and plateaued at that level well past the third decade of disease. In the limited subset,the mean SDAI started at approximately 2 and remained at that level throughout the course of the disease. On the contrary, for those with diffuse disease, the SDAI had a parabolic shape with respect to time: at the onset it was 5, the nadir was 2 after 20 years of disease and it increased gradually back up to 5 by the end of the fourth decade of disease. Curves of disease activity over time for the whole cohort as well as by subsets were similar when disease activity was measured using the physician and patient global assessments.

Conclusions: Patients with SSc, in particular those with diffuse skin involvement, need long term follow up because of the possibility of disease flare after long periods of apparent low disease activity.

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ACCESS TO RHEUMATOID ARTHRITIS TREATMENT IN THE GREATER TORONTO AREA: HOW ARE WE DOING? Shahin Jamal, Xiuling Li, Shabbir Alibhai, Elizabeth Badley, Claire Bombardier (University of Toronto, Toronto, Ontario, Canada)

Objectives: The primary objective of our research is to determine if newly diagnosed RA patients in the greater Toronto area (GTA) are treated with DMARDs within 3 months of symptom onset (accepted guideline). The secondary objectives are to determine where the delays occur and to identify contributing factors.

Methods: This is a cross-sectional survey of RA patients (Inclusion: age > 18y, diagnosis of RA after Jan 1, 2003, informed consent. Exclusion: juvenile RA, symptoms before 1980, unable to answer questions in English) in the GTA. Patients participated in a telephone survey to discuss demographic information, onset of symptoms, timing of visits, etc. The percentage of patients treated with DMARD within 3 months of symptoms was determined. Median times for components of delay were determined and multivariate logistic regression was done to explore contributing factors.

Results: 265 RA patients from 15 rheumatologists practices were interviewed, of which 219 were included. Patient characteristics: 78% female, 66% Caucasian, mean age 54.2 years, 25% with family history of RA, and 59% with some post-secondary education. 17.8% received DMARDs within 3 months of symptom onset and 9.6% were never treated. The median time from symptoms to DMARD was 11.5 months (IQR 5.0, 33.0), symptoms to 1st primary care physician (PCP) visit was 0 months (IQR 0. 2.0), 1st PCP visit to 1st rheumatology visit was 4.1 months (1.0, 12.2), and 1st rheumatology visit to DMARD was 1 month (0, 6.0). Patients with some postsecondary education (OR=3.499, 95%CI 1.478-8.285) and higher age (OR=1.035, 95%CI 1.006-1.064) were significantly more likely to receive timely treatment. Ethnicity, gender, comorbidity, and family history of RA were not significantly associated with timing of treatment.

Conclusions: Fewer than 20% of new RA patients were treated according to accepted guideline. The major delay appears to be in the period from 1st PCP visit to 1st rheumatology visit. Possible reasons include: inability of PCPs to recognize RA, delay in referral to rheumatologist, lack of sufficient information on the referral letter, shortage of rheumatologists, and long wait for rheumatology appointments. Older and educated patients were more likely to be treated earlier. We have shown that access to rheumatologists is the key factor in early DMARD initiation in the GTA. Further research is needed to identify the main reasons for delays to rheumatologic care.

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RITUXIMAB IMPROVES HEALTH-RELATED QUALITY OF LIFE AS MEASURED BY THE SF-36: DOMAIN SCORE RESULTS FROM THE REFLEX STUDY Adrian Kielhorn, Alfred Cividino, S Bombardieri, R Aultman, F Jost, F Magrini (Health Economics, F. Hoffmann-La Roche Ltd., Basel, Switzerland, Hamilton Health Sciences, McMaster University, Ontario, Canada, Department of Rheumatology, International Medical Centre, Pisa, Italy, Medical Sciences, Roche Products Ltd., Welwyn Garden City, United Kingdom)

Objectives: To evaluate treatment effects of rituximab - a CD20+ B cell-targeted therapy vs placebo (methotrexate [MTX]) on health-related quality of life as measured by the individual SF-36 domains in the REFLEX study and to show the impact of the number of prior anti-TNF treatments on the SF-36 results.

Methods: The REFLEX study is a randomized placebo-controlled, double blind, multicenter study comparing the administration of 1000 mg rituximab on Days 1 and 15 with placebo, in patients who had previously failed one or more anti-TNF treatments. Both groups received concomitant MTX. Patients completed the SF-36 questionnaire at baseline and Week 24. Mean transformed scores and change from baseline to Week 24 for each of the 8 domains were examined. Minimal clinically important difference (MCID) was defined in this analysis as a change from baseline of 5 points or more.

Results: Of the 520 patients enrolled, 517 comprised the safety population. Treatment groups were well balanced with respect to demographics and RA disease characteristics. The summary component scores have been reported earlier (1). Patients in the rituximab group showed higher scores for the subscales of Physical functioning (13.26), Role physical (22.34), Bodily pain (22.11), General health (9.04), Vitality (13.97), Role emotional (21.13), Social functioning (17.37), and Mental health (6.93) compared with patients in the placebo group (4.89, 8.4, 6.75.0.67, 3.32, 7.41, 7.19, and 4.01, respectively), with greatest changes seen in Bodily pain, Role physical, Role emotional and Vitality ($p<0.0001$ vs placebo). For the rituximab group, all 8 subscales exceeded the MCID. Mean changes in the Physical and Mental Component Summary scores were also higher in the rituximab group (6.61 and 5.39, respectively) than with placebo ($p<0.05$).

Conclusions: Rituximab showed significant and clinically meaningful improvements in all 8 SF-36 domains, with the greatest improvement seen in Bodily pain. This analysis confirms previous results in patient reported outcomes showing that rituximab 2 x 1000 mg is an effective treatment in patients with active RA. References: 1) Keystone et al. ACR 2005

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PROLONGED EFFICACY OF RITUXIMAB IN RHEUMATOID ARTHRITIS PATIENTS AND INADEQUATE RESPONSE TO ONE OR MORE TNF INHIBITORS: 1-YEAR FOLLOW-UP OF A SUBSET OF PATIENTS RECEIVING A SINGLE COURSE IN A CONTROLLED TRIAL (REFLEX STUDY) Stanley Cohen, Alfred Cividino, Paul Emery, Maria Greenwald, Maxime Dougados, Richard Furie, Gerd-Rudiger Burmester, S Williams, Matthew Cravets, F Magrini (Radiant Research, Dallas, Texas, United States, Hamilton Health Sciences, McMaster University, Ontario, Canada, Rheumatology Dept, Leeds General Infirmary, Leeds, United Kingdom, Desert Medical Advances, Palm Desert, California, United States, Rheumatology Dept, Hopital Cochin, Paris, France, North Shore LIJ Health

System, Lake Success, New York, United States, Rheumatology Dept, Charite University, Berlin, Germany, Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, Biogen Idec, San Diego, California, United States)

Objectives: To explore the long-term efficacy of a single course of rituximab (RTX) over 1-year of follow-up in patients (pts) with rheumatoid arthritis (RA) and an inadequate response (IR) to one or more TNF inhibitors.

Methods: Pts with RA on continuing background methotrexate (MTX) who had an IR to a TNF inhibitor were randomized to RTX (1000 mg x 2) or placebo (PLC), as previously described (1). Primary endpoint: ACR20 at Week 24; after, pts could exit and receive further RTX treatment based on clinical need. Pts received no further treatment apart from ongoing stable MTX; pts and investigators remained blinded. Responding pts remained in follow-up until they required repeat treatment or additional therapy.. ACR responses were determined for pts completing 48 weeks of follow-up.

Results: 37% (114/308) of pts in the RTX group remained in the study over 48 weeks, indicating continued clinical benefit following a single initial treatment course. In contrast, 89% of the PLC+MTX group (185/209) withdrew prior to Week 48. At Week 48, 51%, 34%, and 14% of the RTX+MTX-treated patients sustained an ACR20, 50, or 70 response, respectively, compared with 33%, 8%, and 4% of pts receiving PLC+MTX. The proportion of pts achieving DAS low disease activity or remission was also higher in the RTX treatment group over the 48-week observation period (24% and 12%, respectively vs 8% and 4% for PLC + MTX pts). More pts in the RTX+MTX arm than in the PLC+MTX arm had clinically significant improvements in HAQ-DI scores at Week 48 (23% vs 6%) and had improved Physical and Mental Component Summary scores of the SF-36 (mean change: 5.43 and 4.29 vs placebo). RTX was generally well tolerated in the 1-year follow-up period. The overall incidence of infection in pts was 5.6/100 pt-years, within the expected incidence in this pt population (1).

Conclusions: The favourable efficacy and safety profile of rituximab following single treatment course in pts who had an inadequate response to one or more TNF inhibitors at 24-weeks has been reported previously (2). The results of an extended observation phase of the REFLEX study now show that such efficacy is maintained in a subset of these pts for at least 48 weeks. References: 1. Dixon, et al. ACR 2005 (Abstract 1990).2. Cohen, et al. ACR 2005 (Abstract 1830).

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EFFICACY OF ADALIMUMAB (HUMIRA®) IN CANADIAN CLINICAL PRACTICE: SUBANALYSIS OF THE CANACT TRIAL FOR PATIENTS WITH MODERATE VS. SEVERE RHEUMATOID ARTHRITIS Edward C Keystone, Jackie Stewart, Alfred Cividino, Paul Haraoui, Benoit Guerette (University of Toronto, Toronto, Ontario, Penticton Regional Hospital, Penticton, British Columbia, McMaster University, Hamilton, Ontario, , Rheumatology, CHUM - Hopital Notre-Dame, Montreal, Quebec, Abbott Laboratories, Saint-Laurent, Quebec)

Objectives: To compare the efficacy of adalimumab in the treatment of patients with moderate vs. severe rheumatoid arthritis (RA).

Methods: The Canadian Adalimumab Clinical Trial (CanAct) was an open-label, Phase IIIb study conducted at 69 sites in Canada. Patients with moderate to severe RA who had an inadequate response to standard antirheumatic therapies received adalimumab 40mg eow for 12 weeks, in addition to their pre-existing therapies. Efficacy assessments included Disease Activity Score 28 (DAS28), ACR20/50/70, and the Health Assessment Questionnaire (HAQ). Results for patients with moderate RA vs. patients with severe RA as defined by baseline DAS28 scores (moderate RA=3.2< DAS28<5.1 and severe RA=DAS28>5.1) were compared.

Results: A total of 879 patients enrolled in CanAct. Baseline characteristics were: mean age=54.4 years; % female=78.7; and mean RA duration=12.5 years. The percentages of patients with moderate RA and severe RA were 8% and 80%, respectively; mean DAS28 scores were 4.5 and 6.6, respectively; and mean HAQ scores were 1.2 and 1.7, respectively. Patients who had moderate RA at baseline and patients who had severe RA at baseline both achieved statistically significant improvements in DAS28 at 12 weeks (1.5 for moderate patients, and 2.1 for severe patients). Improvements in HAQ for the same groups were 0.4 and 0.5, respectively ($p<0.001$ for both groups 12 weeks vs. baseline). Significantly more patients with moderate RA vs. patients with severe RA at baseline achieved low disease activity and clinical remission at Week 12 (DAS28<3.2=55.4% vs. 19.5%; and DAS28<2.6=31.7% vs. 11.0%, respectively). Significantly more patients with moderate RA than patients with severe RA achieved a HAQ<1.0 at Week 12 (60.0% vs. 43.6%). Week-12 ACR20/50/70 response rates for moderate vs. severe RA patients were 51.0%, 25.2%, and 12.6% and 61.1%, 32.4%, and 13.0%, respectively. Between-group analyses showed a statistically significant difference in ACR20. ACR50/70 response rates were not statistically different.

Conclusions: Significantly more CanAct patients with moderate RA than patients with severe RA at baseline achieved clinical remission at Week 12. Adalimumab therapy led to good outcomes in both subgroups, with patients with moderate RA achieving even better results.

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PAIN IN SYSTEMIC SCLEROSIS (SSC) Suzanne S. Taillefer, Murray Baron, Marie Hudson, Canadian Scleroderma Research Group, Canada (CSRG) (Jewish General Hospital, Montreal, QC, McGill University, Montreal, QC)

Objectives: To better understand the experience of pain and its correlates in patients with Systemic Sclerosis (SSc).

Methods: Annually, patients with SSc enrolled in the CSRG Registry undergo a standardized assessment by a physician. Among other things, physicians also complete global assessments of disease activity, severity and damage using an 11-point numerical rating scale (NRS) ranging from 0 to 10. Patients also complete a series of self-report questionnaires. The primary outcome measure for this study was the patient global assessment of pain in the past week, measured with the Scleroderma-Health Assessment Questionnaire (S-HAQ) pain question also using an 11-point NRS. The magnitude and sources of pain were identified by a series of self-reported questions. Correlations between pain and measures of disease status were assessed using Kendall tau-b and chi-square was used to compare two levels of pain.

Results: Of the 413 patients assessed, 86.4% were female with a mean age of 56 (+14) years and a mean disease duration of 10.6 (+8.6) years. The mean modified Rodnan skin score was 11.1 (0.4) and the ratio of limited to diffuse disease was approximately 1:1. The mean S-HAQ pain score was 3.7 (+/- 2 .8) and only 15.9% of patients reported no pain at all in the past week. Fifty-two percent of patients reported moderate to very severe pain in the past week. Twenty percent of patients were on NSAIDs (including COX-2 inhibitors) and 6% were on a narcotic. Possible sources of pain include heartburn (62.8%), joints (62.5%), muscles (52.6%), diarrhea (23.5%), any active cutaneous ulcers (20.3%) and worsening skin disease (9.6%). When we divided the patients into low pain (NRS 0-3, n= 210) and moderate to severe pain (NRS 4-10, n = 198), heartburn, joint pain, muscle pain, any active cutaneous ulcers and worsening skin disease were strongly associated with the moderate to severe pain group ($p=/<0.006$). Pain was highly correlated with all physician global assessments ($p=/<0.001$), but not with duration of disease or limited and diffuse subsets of disease.

Conclusions: Pain is common in SSc and is associated with higher levels of disease activity, severity and damage. Pain may be arising from heartburn, joints, muscles, skin and cutaneous ulcers. Recognizing and treating pain in patients with SSc is crucial to improving their overall condition.

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REAL LIFE EVALUATION OF RHEUMATOID ARTHRITIS IN CANADIANS RECEIVING HUMIRA (REACH): PRELIMINARY, 6-MONTH ANALYSIS Claire Bombardier, Janine English, Xiuying Li, Benoit Guerette (University Health Network, Toronto, ON, Abbott Laboratories, Montreal, QC)

Objectives: To describe clinical response, functional status, and disease activity of patients with rheumatoid arthritis (RA) receiving adalimumab (HUMIRA during a two-year period.

Methods: REACH is an ongoing, multi-center, open-label observational study of adalimumab used in routine practice. A target total of 1,000 patients are expected to be enrolled from approximately 150 sites across Canada. Eligible participants must be =/>18 years of age, have moderate to severe, active RA, and be either na e to adalimumab therapy or must have been receiving adalimumab for <4 months. Treating rheumatologists collected baseline demographics and medical histories, including previous and concomitant anti-rheumatic therapies and comorbidities. Physicians also determined DAS28 scores, and patients completed HAQ, RADAI, and global assessments of disease activity every 6 months.

Results: In this preliminary analysis, we report on the 94 patients who had received =/>6 months of adalimumab therapy at the time of the analysis. 76.6% were female and 87.2% were Caucasian, with a mean age of 57.1 and a mean disease duration of 12.8 years. Baseline disease measures were DAS28=4.83, HAQ=1.53, and RADAI=5.3. Mean decrease (improvement) from baseline to 6 months in DAS28 was 1.02 (p<0.001, n=75), with 54% of patients reaching a EULAR response of good or moderate, 12% achieving low disease activity (2.6=/<DAS28=/<3.2) and 17% reaching clinical remission (DAS28<2.6). HAQ improved by 0.37 (p<0.001, n=91). A minimum clinically important improvement of at least 0.22 in the HAQ was observed for 56% of patients (n=91). The RADAI score decreased (improved) by 1.44 (p<0.0001, n=93), and the patient global decreased (improved) by 0.45 (p<0.0001, n=90). Moreover, 48% of patients indicated that their symptoms had improved. In addition, 38% of patients had previous experience with an RA biologic (TNF antagonist, 92%; IL-1 receptor antagonist, 19%; both 8%), and 94% had received =/>2 DMARDs before initiating adalimumab (mean=3.24). The most common previous DMARDs were methotrexate (43%), leflunomide (31%), and hydroxychloroquine (23%). Currently, 66% of patients are receiving =/>2 or more DMARDs concomitantly, with methotrexate and prednisone accounting for 67% and 35%, respectively.

Conclusions: REACH patients are representative of a moderate to severe RA population. At baseline, they have moderate to severe disease activity (DAS28), and established, long-standing disease. The majority had previously received =/>2 DMARDs, and even a previous RA biologic. After 6 months of adalimumab therapy, most patients had achieved clinically important improvements in disease activity and physical function.

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WHICH VARIABLES BEST PREDICT THE DIRECT AND INDIRECT COSTS OF RHEUMATOID ARTHRITIS (RA)? XiuYing Li, Ruben Tavares, Claire Bombardier (Toronto General Research Institute, Toronto, ON)

Objectives: To determine the effects of demographic variables, disease activity and functional status in predicting the direct and indirect costs of RA.

Methods: Fifty-three (53) Canadian rheumatologists recruited 272 consecutive patients with confirmed RA. Rheumatologists completed a baseline tender joint count, swollen joint count, and erythrocyte sedimentation rate (ESR) if available. All patients were interviewed at baseline and 3 months. In addition to demographics and presence of comorbidities, generic and disease-specific health status was collected using the health assessment questionnaire (HAQ), the rheumatoid arthritis disease activity index (RADAI), the medical study short form (SF36), the patient global assessment (PGA) and Euro-Qol 5 Dimensions (EQ-5D) utilities. The disease activity score (DAS28) was calculated for those with complete ESR data (N = 138). Patients also completed a detailed, open-ended resource utilization questionnaire which collected data on direct medical and non-medical costs, indirect cost of patients' time lost from work and performing chores, and expenses incurred over 6 months. Costs were estimated in 1999 Canadian dollars from national and provincial databases. Univariate and multivariate linear regression on log transformed cost data were employed with adjustment for age and gender.

Results: 253 RA patients (79.8% female) completed both interviews, with a mean disease duration of 11.2 .5 years. Patients with RA incurred total semi-annual mean disease costs of $4,604CAD, $2,105 direct costs and $2498 indirect costs. The results of univariate analysis showed that there were effects of demographic and disease status on Log-transformed semi-annual costs after adjusting for age and sex. Using the multivariate regression models, DAS-28 (b=0.12, p=0.015), comorbidity (b=0.06, p=0.003) and HAQ (b=0.16, p=0.04) were identified as significant independent predictors of direct costs, whereas, HAQ (b=1.10, p=0.001) was the only predictor of indirect costs. Demographic variables did not predict either direct or indirect costs.

Conclusions: Direct and indirect costs increased with disease activity and functional disability of RA. Multivariate analysis indicates that disease activity and comorbidity are predictors of direct costs while functional disability is a strong predictor of indirect costs of RA. Our results suggest that strategies to reduce the economic impact of RA need to focus on comorbidities as well as disease activity and the important indirect costs due to loss of productivity will require targeted programs aimed at functional disabilities due to RA.

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SAFETY OF RITUXIMAB IN RHEUMATOID ARTHRITIS: RESULTS OF A POOLED ANALYSIS Ronald van Vollenhoven, Boulos Haraoui , Paul Emery, Clifton Bingham, Edward Keystone, Maria Greenwald, Larry W. Moreland, D Kim, Sheldon Cooper, B Wagner, P. Ward (Rheumatology Department, Karolinska University Hospital, Stockholm, Sweden, Rheumatology Department, Centre Hospitalier de l'Universite de Montreal, Montreal, Canada, Rheumatology Department, Leeds General Infirmary, Leeds, United Kingdom, Division of Rheumatology, Johns Hopkins University, Baltimore, Maryland, United States, Rheumatology Department, University of Toronto, Toronto, Canada, Desert Medical Advances, Palm Desert, California, United States, Rheumatology Department, University of Alabama School of Medicine, Alabama, United States, Biogen Idec, San Diego, California, United States, , Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, Drug Safety, Genentech Inc, South San Francisco, California, United States)

Objectives: To evaluate the overall and long-term safety of single and multiple courses of rituximab (RTX) in patients (pts) with active rheumatoid arthritis (RA).

Methods: 1039 pts were exposed to RTX in the clinical program. By October 2005, 570 pts had received 2 courses of RTX and 191 and 40 pts had received 3 and 4 courses, respectively (total observation of 1669 pt-years [yrs)]; 839 pts were followed up for >1 yr; of these, 139 and 89 pts were followed for >2 and >3 yrs, respectively.

Results: Over 3 yrs, 91% of RTX-exposed pts and 86% of placebo-exposed patients experienced at least 1 adverse event (AE) after receipt of >/= 1 courses of RTX. After the first RTX course, 88% of pts experienced at least 1 AE, the majority, mild (CTC grade 1) or moderate (CTC grade 2) in severity. Severe AEs (CTC grade 3) occurred in 24% of pts and very severe (CTC grade 4) in 2% of pts. AEs decreased from 939 events/100 pt-yrs during the first 3 months (mo) to 399/100 pt-yrs at 4-6 mo and 212/100 pt-yrs at 10-12 mo. The higher incidence of AEs during the first 3 mo was primarily due to infusion-associated reactions. AEs declined after repeated courses of RTX, occurring in 71%, 64% and 55% of pts after the 2nd-4th courses. 302 serious AEs were reported in 22% of pts exposed to >/=1 courses of RTX; the same rate (22%) occurred in placebo pts. Serious AEs declined from 29 events/100 pt-yrs during the first 3 mo to 11-21/100 pt-yrs from 4 to 24 months. After >/= 1 courses of RTX, 58% of pts developed >/=1 infection. Serious infections (SI) occurred in 7% of pts vs 3% of placebo pts. There were 3 infection-related deaths. The overall rate of SI was 5.03 events/100 pt-yrs, consistent with the general RA population (1). Prolonged peripheral B cell depletion was not associated with an increased rate of SI. No cases of tuberculosis were reported and there was no indication of an increased risk of malignancy with repeated treatment.

Conclusions: Long-term follow-up (1669 pt-years) of pts with RA treated with >/=1 treatment courses of RTX showed no new safety signals beyond those identified in the original randomized clinical trials. References: (1) Doran, et al. Arthritis Rheum (2002).

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EARLY RESULTS FROM THE UNDERSTANDING NEAR-TERM CARE OF VERY EARLY RHEUMATOID ARTHRITIS (UNCOVER) MULTICENTRE, RETROSPECTIVE, COHORT: LAG-TIMES TO EARLY

RHEUMATOID ARTHRITIS CARE WITH DISEASE MODIFYING ANTI-RHEUMATIC DRUGS. Ruben Tavares, Janet Pope, Jean-Luc Tremblay, Carter Thorne, Vivian P. Bykerk, Juris Lazovskis, Ken Blocka, Mary J. Bell, Diane Lacaille, Carol A. Hitchon, Gilles Boire, George Tomlinson, Hong Chen, Xiu Ying Li, Claire Bombardier (Institute of Medical Science, University of Toronto, Toronto, ON, St. Joseph Health Science Centre, London, ON, Centre Hospitalier Regional de Trois-Rivi es, QC, Southlake Regional Health Centre, Newmarket, ON, Mt. Sinai Hospital, Toronto, ON, Cape Breton Regional Hospital, Sydney, NS, Division of Rheumatology, Department of Medicine, University of British Columbia, Division of Rheumatology, Department of Medicine, Sunnybrook Health Sciences Centre, Toronto, ON, Arthritis research Centre of Canada, Vancouver, BC, University of Manitoba, Winnipeg, MB, Rheumatology Division, Faculty of Medicine, Universite de Sherbrooke, Clinical Decision Making and Health Care Division, TGRI, , Clinical Decision Making and Health Care Division, TGRI, Toronto, ON)

Objectives: To determine the lag-time from disease symptom onset to treatment with disease modifying anti-rheumatic drugs (DMARDs) in early rheumatoid arthritis (ERA) patients and associated factors.

Methods: A multi-centre, retrospective, clinical cohort of 400 randomly selected clinical charts of ERA patients from 21 rheumatologists diagnosed between June 2001 and May 2003, inclusively. A confirmed rheumatologist diagnosis was the disease criterion for inclusion. The study was designed to determine if the lag-time to DMARD therapy differs significantly from six months (182 days). Cox proportional hazards modeling was used to explore if demographic and baseline clinical characteristics were associated with lag-time to DMARD therapy. Results on data collected to date from 159 patients from nine rheumatologists are presented.

Results: Sample characteristics were reported as medians (interquartile range). Two-tailed tests of significance were reported at a 5 % level of significance. Study patients were 51 (41,61) years of age on the date of diagnosis, 77 % female, represented five provinces, from all three institution types. Baseline disease (on or prior to the date of diagnosis) was characterized as 70% RF +, with maximum clinical values of 9 (3,26) mg/L CRP, 30 (15,50) mm/h ESR, 8 (4,14) SJC, and 11 (7,19) TJC. Approximately 25% previously consulted with another rheumatologist. The median lag-time to DMARD therapy was 324 (151,881) days. Among patients consulting with a rheumatologist for the first time (n=116), mediating lag-times included: symptom onset to referral to a rheumatologist was 231 (82,595) days; referral to a rheumatologist to first visit was 35 (14,65) days; and, first visit to diagnosis was 16 (0,82) days. There was no lag-time between date of first diagnosis and DMARD treatment. In an exploratory analysis, Cox modeling resolved small but statistically significant effects of lesser age and increased baseline ESR values on increased lag-time to DMARD therapy.

Conclusions: In order to decrease lag-time from symptom onset to DMARD therapy in RA patients, lag-times associated with processes leading up to referral to the rheumatologist need to be addressed as this period poses the longest delay to care. The impact of comorbidity on lag-times to therapy should be considered in future studies.

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USE OF BIOLOGIC RESPONSE MODIFYING DRUGS BY ONTARIO RHEUMATOLOGY SPECIALISTS. Claire Bombardier, J. Michael Patterson, Brandon Zagorski, Jan Hux, Sasha Bernatsky, Jennifer Boyle, Alf Cividino, Janet Pope, Carter Thorne, Ontario Biologics Research Initiative. (University Health Network, Toronto, ON, Institute for Clinical Evaluative Sciences, Toronto, ON, Montreal General Hospital, Montreal, QC, Toronto Western Research Institute, Toronto, ON, McMaster University, Hamilton, ON, University of Western Ontario, London, ON, Southlake Regional Health Centre, Newmarket, ON, OBRI, Toronto, ON)

Objectives: To assess the use of biologic response modifiers (BRMs) by Ontario rheumatology specialists since the introduction of these agents.

Methods: We studied the BRM prescribing patterns of the 154 rheumatology specialists in Ontario between 2001 and 2005. Using anonymized data, patient and provider characteristics were obtained from the Ontario Health Insurance Plan Database and the Registered Persons Database. Data on BRM (infliximab, etanercept, anakinra and adalimumab) utilization and costs were obtained from two sources. The Ontario Drug Benefit Plan Database captures information on publicly reimbursed drugs for Ontario residents aged 65 years and older, and for individuals who meet financial assistance criteria. The PharmaStat database (Brogan Inc.), captures aggregate data on public- and privately-insured BRM expenditures. This database contains drug claims for the Ontario beneficiaries of 12 private plans, representing approximately 85% of Ontario's private drug insurance business. Quarterly PharmaStat BRM user and payment data were used to determine total drug costs and the average annual proportion of public and private expenditures for BRMs. We also estimated the number of rheumatology patients receiving BRMs in Ontario. All analyses were conducted at the Institute for Clinical Evaluative Sciences.

Results: Approximately 5,041 patients received a BRM in 2005 for an arthritis indication, representing the majority of BRM users in Ontario. In 2005, 61% of publicly-funded BRM users were less than 65 years of age. Etanercept was the most frequently prescribed BRM each year (65.4% of publicly-funded BRM users in 2005). The number of new BRM users (incident users) increased substantially each year to an estimated 1825 patients in 2005. Annual costs to public and private drug plans for all indications rose from $7,480,909.86 in 2001 to $94,978,375.83 in 2005.

Conclusions: BRMs have been developed to target the immune response in inflammatory arthritis and other conditions. There has been substantial growth in BRM use in usual rheumatology care in Ontario. This growth has been mirrored by overall use of BRMs in Ontario as more agents have entered the market and as the number of approved indications has expanded. The Ontario Biologic Research Initiative represents a novel collaboration of stakeholder groups representing patients, providers, researchers, and government. Future research will be targeted at further delineating BRM practice patterns and answering specific questions related to the real-world effectiveness and safety of these agents.

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AUTOANTIBODIES IN LUPUS NEPHRITIS PATIENTS REQUIRING RENAL TRANSPLANTATION Laura M Stinton, Susan G Barr, Lee Anne Tibbles, Serdar Yilmaz, Aylin Sar, Hallgrimur Benedikttson, Marvin J Fritzler (University of Calgary)

Objectives: To compare autoantibody profiles in systemic lupus erythematosus (SLE) patients with lupus nephritis (LN, N=22), lupus nephritis patients requiring renal transplantation (LNTP, N=14) and a control group of SLE patients without nephritis (CON, N=64).

Methods: Sera were assayed for antibodies to chromatin, Sm, U1-RNP, SS-A/Ro, SS-B/La, ribosomal P protein, Jo-1 (histidyl-tRNA synthetase) and Scl-70 (topoisomerase I) by addressable laser bead immunoassay, to dsDNA by Crithidia lucilliae assay and to cardiolipin, -glycoprotein 1, ribosomal P proteins (P0, P1, P2) and nucleosomes by ELISA. Renal biopsies were reclassified according to the International Society of Nephrology/Renal Pathology Society (ISN/RPS) 2003 classification. Receiver operating characteristic (ROC) curves were constructed to assess the accuracy of anti-nucleosome antibodies as a biomarker for LN.

Results: The frequency of nucleosome autoantibodies was significantly greater in the LNTP group (79%) compared to the LN (18%) and CON (9%) groups ($p<0.0005$). The frequency of other autoantibodies, including anti-dsDNA, did not differ significantly between groups. Among patients with LN, the odds of progressing to renal transplantation was 16-fold higher (OR 16.5 [95% CI 2.5, 125.7], $p=0.0005$) in patients testing positive for anti-nucleosome antibodies compared to those who tested negative. A positive anti-nucleosome result differentiated the LNTP group from the LN+CON group with a sensitivity of 79% and a specificity of 88%. The area under the ROC curve was 0.93 (95% CI: 0.85, 1.00). The ability of this test to differentiate LNTP from LN produced similar results (sensitivity 79%; specificity 82%; area under ROC 0.89 [95% CI: 0.79, 1.00]). When used to differentiate LN+LNTP from CON, the test had low sensitivity (42%) but specificity remained high (91%) with an area under the ROC curve of 0.75 (95% CI 0.64, 0.85). There was no difference in renal histological classification among

patients with anti-nucleosome antibodies compared to those who tested negative.

Conclusions: SLE patients that progressed to renal transplantation had a variety of autoantibodies, but antibodies to nucleosomes were found in highest frequency and were significantly more frequent in this group compared to SLE patients not requiring transplantation. Our observations suggest that antibodies to nucleosomes are a biomarker for more severe renal disease requiring transplantation. These findings are in accord with current models of the pathogenesis of lupus nephritis.

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DOES AXIAL DISEASE EXHIBIT A DIFFERENT PHENOTYPE IN PRIMARY ANKYLOSING SPONDYLITIS VERSUS PSORIATIC SPONDYLITIS? Finbar O'Shea, Vinod Chandran, Sergio Toloza, Catherine Schentag, Robert Inman, Dafna Gladman (Toronto Western Hospital)

Objectives: Ankylosing Spondylitis (AS) and Psoriatic Arthritis (PsA) are classified as Spondyloarthritides as they share many clinical and radiological features. The inflammatory spinal disease in Psoriatic Arthritis (Psoriatic Spondylitis) may differ from AS in important aspects that are as yet unresolved. The purpose of our study was to compare and contrast clinical and radiographic features of spinal involvement in two well-defined cohorts of patients with AS and PsA.

Methods: Consecutive patients with primary AS (modified New York criteria) and Psoriatic Spondylitis (psoriasis and at least grade 2 sacroiliitis with or without peripheral arthritis) seen at university AS and PsA clinics were assessed using a common standard protocol. Data regarding symptoms, signs, spinal measurements, family history, comorbidities, and drug treatment were recorded. Investigations included ESR and molecular HLA-B*27 typing. Radiographs of the pelvis, lumbar and cervical spine were read by a trained observer for the presence of sacroiliitis and syndesmophytes. Clinical, laboratory and radiological variables were examined individually controlling for gender, disease duration and age of onset to detect significant differences between the two groups. Variables which were significant were included in multivariate logistic regression to determine which combination of variables best explains the differences between the two groups.

Results: 114 patients with AS (97 males) were compared with 132 patients with PsA (86 males). For AS and PsA, respective mean ages were 39.8 and 51.2 years, mean ages at diagnosis 29.4 and 33.9 years, and mean disease duration 10.4 and 17.3 years. A higher number of patients with PsA were on NSAIDs (50% vs. 31.6% p=0.004), and DMARDs including biologic agents (72% vs. 14.9%, p<0.0001).

Patients with PsA had a significantly higher prevalence of peripheral arthritis (55% vs 27%), dactylitis (9% vs 0%), whereas AS had a higher prevalence of uveitis (34% vs 1%), grade IV sacroiliitis (52% vs14%), and HLA-B*27 positivity (84% vs 22%) all p<0.0001. The clinical back measurements (occiput to wall, tragus to wall, Schober , lateral spinal flexion, chest expansion, cervical rotation and intermalleolar distance) were significantly more restricted in patients with AS all p<0.0001.

Stepwise logistic regression analysis showed that lumbar lateral flexion, chest expansion and sacroiliitis grade best differentiated between the two groups.

Conclusions: When controlled for gender, age at disease onset and disease duration, axial disease in Ankylosing Spondylitis has a more severe phenotypic expression than Psoriatic Spondylitis. This raises important questions about fundamental differences in the spinal disease in these two conditions.

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CALF SIZE DISCREPANCY IN A CHILD: A CASE OF FOCAL MYOSITIS Bianca Lang, Matthias Schmidt (Dalhousie University/IWK Health Centre)

Objectives: To present a case of focal myositis in a child and increase awareness of the

clinical presentation and variable course of this rare condition.

Methods: Case Report: At 2 years of age, an otherwise well Caucasian girl was noted to have a discrepancy in calf size with the right calf smaller than the left. Extensive neurologic assessment including MRI of the spine was normal and no diagnosis was made. At age 7, the calf size discrepancy persisted and reevaluation suggested that the left calf was abnormally enlarged. MRI confirmed a high signal soft tissue mass in the gastrocnemius muscle. Focal myositis was diagnosed on muscle biopsy. Over the next 3 years, the left calf increased in size, with new lesions detected on MRI in the left gastrocnemius, soleus, and peroneal muscles. A trial of corticosteroids resulted in no improvement clinically or on MRI.

Recently, at age 10, she complained of further increase in calf size. She denied weakness, and review of systems was negative. General examination was normal. The left calf was diffusely enlarged, soft, and nontender. Strength was normal. Left ankle dorsiflexion was restricted; gait was abnormal. CPK (previously normal) was 263 (80-230). ESR was 1. ANA was positive (1:400); remaining laboratory workup was negative. A repeat MRI showed inflammation in all muscles of the left calf; pelvic girdle muscles were normal. Given the local progression of myositis and deteriorating gait a trial of methotrexate was offered.

Results: Discussion: Focal myositis is a rare, usually benign inflammatory disease of muscle which may affect children and adults. It is usually confined to a single muscle or area, and typically presents as an enlarging mass with or without pain. The thigh and lower leg are the most common locations. The diagnosis is suggested by MRI findings and confirmed by muscle biopsy. It often resolves spontaneously, however it may progress to polymyositis. Risk factors for the latter include elevated CPK and ESR, multiple nodules and recurrences, and systemic symptoms. There is no universally accepted treatment; options include observation, surgery, anti-inflammatories, including corticosteroids, and immunosuppressives.

Conclusions: In a child presenting with a discrepancy in calf size, one must consider possible causes of an abnormally small or large calf. Focal myositis is a rare cause of unilateral calf enlargement, which may resolve spontaneously. However, the course is variable, with possible progression to polymyositis.

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EVALUATING PATIENT SELF-REPORTED INSTRUMENTS IN SPONDYLOARTHRITIS: RESULTS FROM THE INTERNATIONAL SPONDYLOARTHRITIS INTER-OBSERVER RELIABILITY EXERCISE THE INSPIRE STUDY Finbar O'Shea, Vinod Chandran, Richard Cook, Robert Inman, Dafna Gladman for the INSPIRE Study Group (Toronto Western Hospital)

Objectives: The INSPIRE study was an exercise undertaken to determine whether the

axial measures used in primary Ankylosing Spondylitis (AS) were reproducible for both AS and Psoriatic Arthritis (PsA) with axial disease.

Several patient completed instruments are frequently used for monitoring patients with Spondyloarthritis (SpA) including disease activity indices, fatigue scales and various health questionnaires. Although these clinical tools are used to monitor activity of disease and response to therapy, it is not known how they correlate with individual spinal and hip measurements. This purpose of this study was to determine whether BASDAI, the modified Fatigue Severity Scale Score, HAQ, SF-36, and patients self reporting of pain and stiffness correlate with spinal measurements in a well defined cohort of SpA patients.

Methods: A group of 20 rheumatologists from 11 countries with expertise in SpA met together for a combined physical examination exercise to assess 10 patients with PsA with axial involvement (9 males 1 female, mean age 52, disease duration 17yrs) and 9 AS patients (7 males 2 females, mean age 38, disease duration 16yrs). Patient self-reported measures (pain, stiffness, fatigue, BASDAI, HAQ and SF-36) were also recorded at the time of the exercise. Median values for various spinal measurements were determined. Pearson correlation coefficient between the various patient completed instruments and the back measurements were calculated.

Results: There was little evidence of clinically acceptable degrees of correlation between the instruments and the spinal measurements performed for the SpA group as a whole and both the AS and PsA groups separately. Moderate point estimates of correlation were found between the HAQ and occiput to

wall (0.66) and tragus to wall (0.60), and to a lesser degree with lateral lumbar flexion (0.55) and intermalleolar distance (0.57).
Patients self reported severity of Pain & Stiffness as well as Fatigue correlated poorly with spinal measurements in both the AS and PsA groups separately and for the SpA group as a whole. BASDAI and the SF36 also performed poorly throughout the groups.
Conclusions: Patient self-reported disease activity indices such as the BASDAI, pain and stiffness scores are regularly used to determine clinical status and monitor response to therapy in SpA. We have utilized a well characterized cohort of patients to demonstrate that these clinical tools correlate poorly with spinal measures in these patients.

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FRONT LINE BACK PAIN: THE PREVALENCE OF SACROILIAC JOINT DISEASE IN A PRIMARY BACK PAIN COHORT Finbar O'Shea, David Salonen, Carlo Ammendolia, William Hsu, Cindy Peterson, Robert Inman (Toronto Western Hospital, Canadian Memorial Chiropractor College)
Objectives: The sacroiliac joint (SIJ) is pivotal to the diagnosis of ankylosing spondylitis (AS). Both clinical trials and genetic studies have used the modified NY criteria for which SIJ radiographic change is a sine qua non for the diagnosis of AS. Yet the prevalence of SIJ abnormalities in the primary low back pain population at large remains unresolved. The aims of our study were: (i) to define the prevalence of SIJ disease in a primary back pain cohort (ii) to define the prevalence of sacroiliitis in this cohort.
Methods: The study was conducted at a chiropractic college, where back pain is the predominant reason for referral. All lumbar spine and AP pelvis X-rays taken at the college over a 3-year period were retrieved and evaluated. The films were scored by 3 readers (1 musculoskeletal radiologist, 2 rheumatologists), and a consensus report for each film was recorded. The abnormal X-rays were classified as (1) definite degenerative changes as demonstrated by the presence of osteophytes; (2) dense sclerosis interpreted as degenerative in nature; (3) probable inflammatory changes but < Grade II in degree; (4) diagnostic sacroiliitis (> bilateral Grade II or unilateral Grade III).
Results: 315 patients were identified (173M, 142F), ages 18-60 yr, with adequate views of the SIJs. 100 patients (31.7%) demonstrated SIJ abnormalities: 73 (23.2%) degenerative (56 osteophytosis & 17 sclerosis), 25 (7.9%) inflammatory (13 early changes & 12 diagnostic for AS) and 2 with OCI. There was a strong association of gender with the type of SIJ pathology. Degenerative disease was predominantly female (68%), inflammatory disease predominantly male (63%). There was also a significant difference in age distribution: the mean age in degenerative disease was 41yrs +/- 12.2 and in inflammatory joint disease was 34.7yrs +/- 11.7 ($p< 0.03$).
Conclusions: In this large primary back pain cohort, radiographic sacroiliitis consistent with AS was found in 3.8%. Significantly, degenerative changes in the SIJ were found in 23.2%. Studies of the prevalence of AS in the population have generally used the modified NY criteria, which include clinical features, but radiographic changes in the SIJ are necessary to meet these criteria. The sensitivity and specificity of radiographic changes for AS have not been defined in unselected back pain populations. The higher prevalence of degenerative joint disease in the SIJ is an important factor for interpreting prevalence studies, and also for case definition in genetic studies or therapeutic trials.

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PREVALENCE OF RESTLESS LEGS SYNDROME IN THE SASKATCHEWAN ARAMIS POPULATION Regina Taylor Gjevre, John A Gjevre, Bindu Nair, John T Sibley (University of Saskatchewan, Saskatoon, SK)
Objectives: To evaluate the prevalence of restless legs syndrome (RLS) in a population of rheumatoid arthritis (RA) and osteoarthritis (OA) patients.
Methods: This was a questionnaire study of Saskatchewan ARAMIS (Arthritis, Rheumatism and Aging Medical Information Systems)participants. A data collection instrument including the symptomatic criteria for RLS and the Epworth score was distributed to RA and OA patients enrolled in the longitudinal ARAMIS study.
Results: Of the 193 respondents, 158 (81.9%) were female. The population consisted of 148 RA patients and 45 OA patients. The RA patients were younger than the OA group, with a mean age of 65.8 years compared to 72.8 years ($p <0.001$). No significant difference in gender distribution was observed between the two diagnostic groups. Five patients (2.6%) reported a previous diagnosis of RLS. All four criteria for RLS were met by 41/148 (27.7%) of the RA patients and 11/45 (24.4%) of the OA patients. There were no significant differences in age or gender between the patients meeting criteria for RLS and those who did not. The mean BMI was slightly higher in the RLS + group at 27.13 (5.39) compared to 25.81 (4.74) in the RLS- group. The Epworth score was also slightly higher in the RLS+ group at 6.37 (3.85) compared to 5.30 (3.72).
Conclusions: : In this population of RA and OA patients 27% met criteria for restless legs syndrome. These symptoms are more common than is generally appreciated.

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EFFICACY AND SAFETY OF ADALIMUMAB (HUMIRA®) IN CANADIAN CLINICAL PRACTICE: RESULTS FROM THE CANACT TRIAL Alfred Cividino, Paul Haraoui, Edward Keystone, Jackie Stewart, Benoit Guerette (McMaster University, Hamilton, Ontario, Rheumatology, CHUM - Hopital Notre-Dame, Montreal, Quebec, University of Toronto, Toronto, Ontario, Penticton Regional Hospital, Penticton, British Columbia, Abbott Laboratories, Saint-Laurent, Quebec)
Objectives: To evaluate the effectiveness and safety of adalimumab in the treatment of rheumatoid arthritis (RA).
Methods: The Canadian Adalimumab Clinical Trial (CanAct) was an open-label, Phase IIIb study. Patients with moderate to severe RA who had an inadequate response to standard antirheumatic therapies received adalimumab 40 mg eow for 12 weeks, in addition to their pre-existing therapies. Patients who completed the initial 12-week treatment period were eligible for an extension phase. The duration of follow-up for this analysis was 24 weeks. Effectiveness assessments included Disease Activity Score 28 (DAS28), ACR20/50/70, Health Assessment Questionnaire (HAQ). Safety assessments included collection of adverse events (AEs) and serious AEs.
Results: 879 patients enrolled in CanAct. Baseline characteristics were: mean age=54.4 years; % female=78.7; mean RA duration=12.5 years; mean DAS28=6.1; mean HAQ=1.55 and % with prior exposure to 1 biologic DMARD (BDMARD)=27.5%. 772 and 238 patients were followed for 12 and 24 weeks, respectively. Mean decreases (improvements) from baseline to Weeks 12 and 24 were 1.9 and 2.2 in DAS28, with 26.2% and 31.5% achieving low disease activity (DAS28<3.2), and 15.3% and 13.5% achieving clinical remission (DAS28<2.6) at Weeks 12 and 24, respectively. ACR20/50/70 responses were 58.4%, 30.6%, and 12.7% at Week 12, and 71.9%, 41.2, and 17.7% at Week 24. HAQ scores decreased by means of 0.51 and 0.66 at Weeks 12 and 24, with 25.5% and 33.2% of patients achieving HAQ<0.5. Moreover, comparable reductions in DAS28 were observed between patients who had 1 prior BDMARD exposure and patients who were BDMARD naïve (Week-12 and Week-24 DAS28 for BDMARD-experienced patients=1.7 and 2.1; and=2.1 and 2.3 for BDMARD-naïve patients, respectively). Injection site reactions (10.4%) and headache (6.4%) were the only two AEs that occurred in =/>5% of patients.1.1% of patients experienced a serious infection. No cases of lymphoma or TB reactivation were reported. No new safety signals were observed.
Conclusions: Substantial reductions in the signs and symptoms and improvements in physical function were observed at Weeks 12 and 24. Adalimumab was generally well-tolerated. These results, obtained from routine clinical practice, are consistent with results from other trials of adalimumab in RA.

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METABOLIC SYNDROME IN SLE: INCREASED PREVALENCE AND ASSOCIATIONS WITH DISEASE MANIFESTATIONS Sergio Toloza, Vinod Chandran, Murray Urowitz, Dominique Ibanez, Dafna Gladman (University of Toronto Lupus Clinic, Toronto Western Hospital)
Objectives: To determine the prevalence of metabolic syndrome (MetSyn) in a cohort of SLE patients followed at a single site and to identify associated factors for its occurrence.

Methods: From a large lupus cohort, 263 SLE patients with complete data for the ascertainment of the MetSyn were assessed between January 1st 2000 and January 31st 2006. MetSyn was defined as per the International Diabetes Federation criteria [increased waist circumference (ethnic specific) plus any two of raised triglycerides or treatment for this lipid abnormality and/or reduced HDL-C or treatment for this lipid abnormality and/or raised blood pressure and/or increased fasting plasma glucose or previously type II diabetes]. All patients were assessed according to a standard protocol including clinical and laboratory variables, SLEDAI-2K at 2-6 month intervals and SLICC/ACR Damage Index (SDI) every 12 months. Clinical and laboratory features collected from time of entry into study to the date of first occurrence of MetSyn criteria and to the last visit in those who did not achieve MetSyn definition were compared between the two groups using Chi-square, Fisher exact or t-tests as appropriate. A logistic regression analysis was performed to identify risk factors associated with MetSyn.

Results: In the 263 patients studied age at diagnosis was 28.2 2.1 years and disease duration at the end of the study was 14.9 .5 years. 49 (18.6%) had evidence of MetSyn. As expected each of the features of the MetSyn were more frequently found in patients diagnosed with the syndrome. A multivariate analysis identified increasing age at diagnosis [OR 1.03 (1.00,1.06) p=0.03] and higher SDI [OR 1.23 (1.02,1.48) p=0.03] as being associated with the presence of MetSyn. There was no difference in the proportion of patients currently taking glucocorticoids, antimalarials and immunosuppressives as well as in levels of anti-double stranded DNA or antiphospholipid or complement between the two groups.

Conclusions: MetSyn is prevalent in SLE. The cluster of ASVD risk factors defining MetSyn are seen with increased frequency in this patient population. Older age at diagnosis and accumulated damage are associated with MetSyn.

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ASSOCIATION OF KILLER CELL IMMUNOGLOBULIN-LIKE RECEPTORS (KIRS) WITH VASCULAR EVENTS AND AUTOANTIBODIES IN SLE Sergio Toloza, Fawnda Pellett, Dominique Ibanez, Vinod Chandran, Murray Urowitz, Dafna Gladman (University of Toronto Lupus Clinic, Toronto Western Hospital)

Objectives: SLE, characterized by the presence of autoantibodies, is associated with inflammatory vascular disease, including vasculitis and accelerated atherosclerosis. KIR genes may play a role in disease susceptibility/expression of inflammatory/autoimmune diseases, e.g. rheumatoid vasculitis, psoriatic arthritis, type 1 diabetes, scleroderma and microscopic polyangiitis. KIRs are expressed on NK cells and subsets of T cells, serving as regulators of NK cell cytolysis and modulators of T cell activation. Activating KIRs have been detected on T cells in atherosclerotic plaques. We have shown that activating KIRs are increased in SLE. We now sought to determine whether activating KIRs were associated with the presence of , vasculitis, atherosclerotic events or autoantibodies in SLE patients.

Methods: 304 Caucasian patients followed prospectively at a single centre were assessed for vasculitis (vasculitic skin lesions, ulceration, gangrene or skin/muscle biopsy showing arteritis), and acute vascular events (AVE) [MI, angina, angioplasty, bypass surgery, peripheral vascular disease, acute stroke syndrome or TIA]. Molecular HLA-C locus typing was performed using genomic DNA which was amplified using PCR-SSO. Molecular KIR genotyping was performed using PCR-SSP for the presence/absence of the following KIR genes: 2DL1, 2DL2, 2DL3, 2DS1 and 2DS2. Chi Square analysis was used to assess the significance of the frequency of the KIR genes within each of the patient groups. A p value of less than 0.05 was considered significant.

Results: In patients with AVE, there was a significant increase in KIR2DS2 (60% vs. 45%, p = 0.02), and in KIR2DL2 (62% vs. 47%, p = 0.01) compared to patients without AVE. There was no increase in either activating KIR2DS1 (43% vs. 42%) or KIR2DS2 (51% vs. 47%) in patients with or without vasculitis. In patients with anticardiolipin antibodies, significant increases were seen in KIR2DS2 (54% vs. 41% p = 0.03) and KIR2DL2 (58% vs. 41% p = 0.003), but KIR2DL3 was decreased (87% vs. 95% p =0.03).

Conclusions: We found an increase of KIR2DS2 in SLE patients with acute vascular events. However, no association was found in patients with vasculitis in contrast to what has been reported in rheumatoid arthritis. These preliminary results warrant further study.

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OSTEOPOROSIS IN PRE-AND POSTMENOPAUSAL WOMEN WITH SLE FROM A LARGE SINGLE CENTER LUPUS COHORT: PREVALENCE AND PREDICTIVE FACTORS Sergio Toloza, Dafna Gladman, Dominique Ibanez, Paul Fortin, Murray Urowitz (University ot Toronto Lupus Clinic, Toronto Western Hospital)

Objectives: To determine the prevalence of and differences in risk factors for osteoporosis (OP) in pre- and postmenopausal SLE women.

Methods: SLE women with a DXA scan performed between January 1st 1996 and May 31st 2006 were identified. In each patient only the first DXA was used. Menopause at BMD was defined as one of menses cessation (> 6 months), use of hormone replacement therapy or hysteroophorectomy. OP was defined as a t score of < - 2.5 either at the femoral neck or lumbar spine whereas a t score > -1 was considered normal. Demographic and clinical OP risk factors collected from cohort entry to the visit prior to DXA were analyzed in women with and without OP in both pre- and postmenopausal states. Chi-square and t-tests were used to compare categorical and continuous variables respectively. Stepwise logistic regression analysis was performed to determine factors associated with OP.

Results: Of 429 SLE women who had a DXA scan performed, 175 had a t score between -1 and -2.5 and were excluded. One-hundred ninety-nine were normal (t score > -1) and 55 had OP (t score < - 2.5). Thus 254 patients with normal BMD or OP were studied. Of these, 182 (71.6%) were premenopausal and 72 (28.4%) postmenopausal. In the premenopausal group, women with OP were more likely to be younger at diagnosis, had taken glucocorticoids (GC) more frequently and had received a higher cumulative dose of GC than women without OP. Among postmenopausal women, older age at BMD and a higher SDI score were significantly different in those with OP compared to those with normal BMD. In a multivariate logistic regression analyses, OP in premenopausal women was associated with younger age at diagnosis of SLE and higher cumulative dose of GC whereas in postmenopausal women OP was associated with a higher damage index.

Conclusions: In premenopausal women, OP is associated with younger age at diagnosis of SLE and higher cumulative dose of GC. In post menopausal women, OP is associated with a higher damage index.

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OSTEOPOROSIS IN MEN AND WOMEN WITH SLE FROM A LARGE SINGLE CENTER LUPUS COHORT: PREVALENCE AND PREDICTIVE FACTORS Sergio Toloza, Dafna Gladman, Dominique Ibanez, Paul Fortin, Murray Urowitz (University of Toronto Lupus Clinic, Toronto Western Hospital)

Objectives: To determine the frequency of and differences in risk factors for osteoporosis (OP) in men and women SLE patients.

Methods: SLE men and women with a DXA scan performed between January 1st 1996 and May 31st 2006 were identified. In each patient only the first DXA was used. Patients were considered to have OP if the t score was < - 2.5 either at the femoral neck or lumbar spine and normal if t score > -1. Demographic and clinical data collected from cohort entry to the visit prior to DXA were analyzed. Patients with OP were compared to those with normal BMD with respect to demographic and clinical variables known to be risk factors for OP in men and women separately. Standard statistical tests were performed as well as a stepwise multivariate logistic regression analyses to determine factors associated with OP.

Results: Of 490 SLE patients with a DXA performed, 203 had a t score between -1 and -2.5 and were excluded. Two hundred and thirty-three were normal (t score > -1) and 64 had OP (t score < - 2.5). OP was found in 9 (15%) men and in 55 (13%) women. In univariate analyses, men with OP had higher adjusted mean SLEDAI in the 3 years prior to BMD and had taken a higher cumulative dose of GC than men without OP. In women, those with OP were older at the time of BMD, had longer disease duration and were more

likely to be postmenopausal than women with normal BMD. They also had used GC more frequently, had received higher cumulative doses of GC and had accumulated more damage than women without OP. In a multivariate logistic regression analyses, GC cumulative dose exposure contributed significantly to OP in both men and women. In women, menopausal status was an important contributing factor for OP whereas hormone replacement therapy was protective.

Conclusions: OP is prevalent in both men and women with SLE. Cumulative dose of GC play a major role in the occurrence of OP in both SLE men and women. In SLE women, the hypoestrogenemic state has a significant effect on OP accrual.

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A CASE OF DEFORMING PACHYDERMODACTYLY? Regina Taylor Gjevre, Sherif El Maadawy, Latha Naik, Bindu Nair (University of Saskatchewan)

Objectives: To report an unusual clinical presentation in a young man with atraumatic deformation of his fingers.

Methods: N/A

Results: Our patient is a 39 year old Korean man who presented for the first time to a rheumatologist in 07/06. He reported progressive deforming of the fingers of his left hand at the PIP joints over the preceding 15 years. There was no history of trauma. In the last two years he has observed similar involvement in the right hand with enlargement of the PIP joints and deformation. These deformities impair his functional abilities at his work as a chef. He reports 10 minutes of morning stiffness, and only occasional discomfort at the right third PIP. His connective tissue disease review of systems is otherwise unremarkable. His family history is positive for an unspecified form of arthritis in his mother. On examination flexion deformities at the PIPs of the third digits bilaterally are striking. Flexion deformities were also evident at the PIPs and DIPs of the fourth and fifth digits. There was minimal to no discomfort to palpation of the joints. Soft tissue swelling was noted predominantly at the third PIPs. The remainder of the appendicular and axial skeleton examinations were unremarkable. Laboratory studies including a complete blood count, glucose, creatinine, alkaline phosphatase, AST, calcium, phosphorus, albumin, lipid profile, TSH, U/A, serum protein electrophoresis, CRP, RF were normal or negative. Radiographs revealed ventral and lateral subluxation of the PIP joints of the third and fourth digits. No joint space narrowing, bony erosions or other structural abnormalities were identified. Views of the sacroiliac joints were unremarkable. A nuclear medicine bone scan was performed which did not show any abnormal uptake in the joints. Surgical exploration of the right third PIP revealed a thickened joint capsule which was gelatinous in its consistency. We are considering a diagnosis of pachydermodactyly in this unusual presentation.

Conclusions: We review a case of chronic non-inflammatory deforming joint disease consistent with pachydermodactyly.

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EFFICACY OF RITUXIMAB IN ACTIVE RA PATIENTS WITH AN INADEQUATE RESPONSE TO ONE OR MORE TNF INHIBITORS J. M. Kremer, W.P. Maksymowych, H. Tony, P. P. Tak, M. Luggen, X. Mariette, E. Hessey, D. McCabe, S. Safa-Leathers (Department of Rheumatology, Center for Rheumatology, New York, United States, Department of Medicine, University of Alberta, Edmonton, Alberta, Canada, Department of Rheumatology, Universitatsklinikum W zburg, W zburg, Germany, Academic Medical Center/University of Amsterdam, Amsterdam, The Netherlands, Division of Immunology, University of Cincinnati Medical Sciences Center, Ohio, United States, Department of Rheumatology, Hopital Bicetre, Le Kremlin-Bicetre, France, Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, Biogen Idec, San Diego, California, United States)

Objectives: To compare the clinical efficacy of a single course (two 1000 mg infusions 2 weeks apart) of rituximab (RTX) therapy in patients (pts) with an inadequate response (IR) to a single TNF inhibitor against pts with an IR to multiple TNF inhibitors.

Methods: The REFLEX study design has been described previously (1). The results of a subgroup analysis are reported here, comparing efficacy (based on ACR scores) in pts previously treated with single versus multiple TNF inhibitors.

Results: Of the 499 pts in the intent-to-treat population, 300 had received 1 TNF inhibitor prior to randomization and 199 had received >/=2 TNF inhibitors. In pts exposed to 1 prior TNF inhibitor and receiving RTX + methotrexate (MTX), 58% (103/179) achieved an ACR20 response compared with 21% (25/121) in the placebo (PLC) + MTX group ($p<0.0001$). In pts exposed to >/=2 prior TNF inhibitors and receiving RTX + MTX, 42% (50/119) achieved an ACR20 response compared with 14% (11/80) in the PLC + MTX group ($p>0.0001$). Thus, a significantly greater proportion of pts treated with RTX + MTX achieved an ACR20 response both after 1 prior TNF inhibitor (37% more pts than PLC + MTX) and after >/=2 TNF inhibitors (28% more pts). The benefit of RTX + MTX was also maintained as determined by ACR50 and ACR70 responses in both pt groups: in pts exposed to 1 prior TNF inhibitor and receiving RTX + MTX, 30% (54/179) and 14% (25/179) achieved ACR50 and ACR70 responses, respectively, compared with 7% (9/121) and 1% (1/121) in the PLC + MTX group ($p<0.0001$). In pts exposed to >/=2 prior TNF inhibitors and receiving RTX + MTX, 22% (26/119) and 10% (12/119) achieved ACR50 and ACR70 responses, respectively, compared with 3% (2/80) and 3% (2/80) in the PLC + MTX group.

Conclusions: A single course of RTX + MTX produced statistically significantly better responses in pts with IR to 1 or more TNF inhibitors, irrespective of the number of anti-TNF agent exposures. Response rates were optimal in pts with an IR to 1 versus 2 or more TNF inhibitors. These findings are consistent with a more recalcitrant disease in this subpopulation, although even these pts achieved a substantially greater response to RTX + MTX than PLC + MTX — indicating that RTX provides an effective therapeutic approach for RA pts with an IR to TNF inhibitors.

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LONG-TERM EFFICACY AND SAFETY OF A REPEAT TREATMENT COURSE OF RITUXIMAB IN RA PATIENTS WITH AN INADEQUATE RESPONSE TO DISEASE-MODIFYING ANTIRHEUMATIC DRUGS P. Emery, V.P. Bykerk, G. Ferraccioli, J. Udell, R. F. van Vollenhoven, K. Rowe, S. Agarwal, T. Shaw (1Rheumatology Department, Leeds General Infirmary, Leeds, United Kingdom, 2Mount Sinai Hospital, University of Toronto, Ontario, Canada, 3Division of Rheumatology, Catholic University, Rome, Italy, Adult Rheumatology, Arthritis Group, Philadelphia, Pennsylvania, United States, 5Rheumatology Department, Karolinska University Hospital, Stockholm, Sweden, Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, Clinical Development, Genentech Inc, South San Francisco, California)

Objectives: To further evaluate the long-term efficacy and safety of repeated courses of rituximab (RTX) therapy in patients (pts) with an inadequate response to disease-modifying antirheumatic drugs (DMARDs).

Methods: Pts were eligible to receive additional open-label treatment courses if they had shown a predefined improvement by Week 16 (>/=20% improvement in joint counts) in their original Phase II study (1,2). Subsequent treatment consisted of the same regimen of a single course of two infusions of RTX (1000 mg x 2) 2 weeks apart. Placebo pts were also eligible to enter and received their first course of RTX within the extension study. Need for repeated treatment was determined by the treating physician. The only criterion for repeated treatment was residual disease activity (defined as >/=8 SJC and TJC). ACR scores were calculated relative to the original baseline prior to the first course of RTX.

Results: To date, 145 pts have received a second course of RTX (repeated treatment; C2). Of these, 99 pts had reached 24 weeks of follow-up post-C2 at the time of the data cut. Baseline characteristics of the 99 pts were similar to the overall study population. A within-pt comparison of efficacy at 24 weeks following C1 and C2 showed that, by all measures, repeated treatment with RTX was effective relative to the pts original baseline: a higher proportion of pts who received C2 achieved an ACR20, 50, or 70 response (73%, 37%, and 19%, respectively) compared with pts in C1 (59%, 27%, and 9%,

respectively). The number of pts achieving low disease activity (DAS28 >/=3.2) and remission (DAS28 <2.6) was also greater for pts who received C2 (26% and 14%, respectively) compared with pts in C1 (19% and 8%, respectively), relative to original baseline. Repeated courses of RTX were generally well tolerated with no evidence of an increase in the rate of infections or the overall incidence of adverse events, including infusion reactions, with additional courses of RTX.

Conclusions: The data indicate that repeated courses of RTX produce a comparable or improved degree of sustained efficacy relative to original baseline, with no apparent cumulative toxicity, in pts with active RA and inadequate response to DMARDs.

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REPEAT TREATMENT WITH RITUXIMAB IMPROVES PHYSICAL FUNCTION AND QUALITY OF LIFE IN PATIENTS WITH RHEUMATOID ARTHRITIS AND AN INADEQUATE RESPONSE TO TNF INHIBITORS P. P. Tak, W.P. Maksymowych, P. Mease, S. Bombardieri, C. Lue, J. D. Isaacs, J. Schechtman, D. Gray, M. Cravets, S. Safa-Leathers (Academic Medical Center/University of Amsterdam, Amsterdam, Netherlands, Department of Medicine, University of Alberta, Edmonton, Alberta, Canada, Seattle Rheumatology Associates, Seattle, Washington, United States, Department of Rheumatology, International Medical Centre, Pisa, Italy, Little Rock Diagnostic Clinic, Little Rock, Arkansas, United States, Department of Rheumatology, School of Clinical Sciences, University of Newcastle Upon Tyne, United Kingdom, Sun Valley Arthritis Center Ltd, Glendale, Arizona, United States, Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, Biogen Idec, San Diego, California, United States)

Objectives: To investigate the effect of a repeated course of rituximab (RTX) treatment on physical function and quality of life in patients (pts) with rheumatoid arthritis (RA) and an inadequate response to TNF inhibitors.

Methods: All pts included in this analysis had received prior treatment with TNF inhibitors and had participated in a Phase II or III trial in the RTX clinical trial program. Pts were eligible to receive additional open-label courses of RTX via an extended repeat-treatment protocol to these trials. All pts had received a single course of two RTX 1000 mg infusions 2 weeks apart within the initial study. The second treatment course consisted of the same regimen (described previously). Pts quality of life was assessed using the Health Assessment Questionnaire Disability Index (HAQ-DI) and the 36-itme Short-Form Health Survey (SF-36) at 24 weeks follow-up.

Results: As of October 2005, a total of 156 pts with an inadequate response to prior treatment with TNF inhibitors had received two courses of RTX and had 24-week data available relative to both their initial and repeat treatment course. All comparisons of change were made relative to pts baseline values prior to treatment with RTX. Of this group, 72% and 69% of pts had a clinically meaningful change in physical function, as defined by a decrease in the HAQ DI score of >/=0.22, following the initial and repeated treatment courses, respectively. SF-36 data were available for 119 pts with 24 weeks follow-up. Within this group, a mean change of 8.7 in the Mental Component Summary was observed following the second course of treatment, versus a mean change of 4.8 following the first course of treatment, suggesting that the effect on the Mental Component Summary is further improved following repeat treatment. Mean changes in the Physical Component Summary were 6.4 and 7.8 following the first and second treatment courses, respectively, also suggesting that pts continue to improve with repeated treatment.

Conclusions: These results indicate that repeat treatment with RTX in pts with active RA can lead to a continued improvement in pts physical function and an enhanced improvement in both mental and physical components of pts quality of life.

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IS THE MAGNITUDE OF THE MANTOUX TEST REACTION PRESERVED IN PATIENTS RECEIVING ANTI-TNF THERAPY? Regina Taylor-Gjevre, Jennifer Ringrose, John Gjevre, Bindu Nair, Vern Hoeppner (University of Saskatchewan)

Objectives: Use of anti-tumor necrosis factor (TNF) agents is expanding and has been associated with increased risk of latent tuberculosis (TB) reactivation. Our objective was to evaluate whether a previously established Mantoux reaction will persist in patients receiving anti-TNF therapy.

Methods: This was a retrospective cohort study of patients with positive Mantoux reactions referred to TB clinic prior to initiation of anti-TNF therapy. All patients currently on anti-TNF therapy for 3 or more months were eligible for this study. Those who consented to participate underwent a repeat standard protocol tuberculin skin test. Readings were measured after 48 hours and compared to recorded baseline.

Results: Charts on 45 patients referred to the TB clinic with a positive Mantoux reaction pre-anti TNF therapy were reviewed. Five women and 3 men who met inclusion criteria consented to participate. Mean age was 51.25 (range 43 - 65) years. The diagnosis of Crohn disease was present in 4 patients; the remaining 4 had rheumatologic disease. Three patients had rheumatoid arthritis and one ankylosing spondylitis. Only one patient had accepted prophylactic treatment with isoniazid (INH). The mean duration of therapy was 24.38 (SD 16.06, range 6-50) months. The mean baseline Mantoux reaction was 16.50 (SD 6.05, range 10 - 25) mm. The mean repeat Mantoux reaction was 4.25 (SD 4.80, range 0 - 11) mm. The test reaction diameter dropped to < 10mm in 75% (4/8) of patients. A two tailed paired t-test revealed a mean difference of 12.25 mm (SD 5.60; 95% CI: 7.57, 16.93) with p <0.001. False negative reactions were recorded for 75% and 50% of patients using the 10mm and 5mm thresholds respectively. No active TB was identified in the study population.

Conclusions: We observed a significant decrease in size of Mantoux reaction in patients treated with anti-TNF agents

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OSTEOPOROSIS AND SCOLIOSIS Janet Markland (University of Saskatchewan, Saskatoon, Saskatchewan)

Objectives: The objective of this study was to determine the interrelationship of subjects diagnosed with osteoporosis and subjects with scoliosis evident on their radiographs.

Methods: Subjects were chosen based on a visit over a one year period from electronic medical records of a private clinic. Screening was done for availability of both bone mineral density reports (BMD) and spinal radiographs. Subjects were chosen based on the presence of either a diagnosis of osteoporosis or a diagnosis of scoliosis, and the ability to prove or refute the other diagnosis. Subjects with incomplete data were excluded. The reasons for referrals were also analyzed.

Results: The average age of the subjects studied was 70 +/- 12 yrs, with a range of 34 to 94 years. Results of analysis reveal an average T-score of lumbar measurements of -2.6 +/- 1.1, with a range of +1 to -6.5. The average T-score of total hip measurements was -2.3 +/- 1.2, with a range of +0.1 to -5.2. Osteoporosis was revealed in 74% of the subjects, and osteopenia in 19%. In subjects with osteoporosis, 74% had scoliosis, and in those with osteopenia, 89% had scoliosis. One quarter of the radiograph reports of subjects with osteoporosis had no scoliosis mentioned. Only 3% of the subjects with scoliosis had normal BMDs. The probability coefficient of the correlation between osteoporosis and scoliosis is 0.01.

Conclusions: Rheumatology literature is extremely deficient on the subject of scoliosis. This condition presents frequently in everyday practice, yet no handbook or primer on the subject is found in recent literature and the average rheumatologist depends heavily on the services of physical therapy for its treatment. Presently we are seeing a resurgence of referrals of cases with back pain and osteoporosis. Typically these patients have been seen by chiropractors but often the focus on self-management is highly neglected, as are instructions for exercises and long term pain alleviation. The radiographs need to be reviewed by the rheumatologist who is also seeing the patient in order to determine if the scoliosis noted radiologically is stable (fixed) or transitory. Rheumatologists are essential to providing a definitive diagnosis of back pain in order to avoid inappropriate therapy.

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AN EVALUATION OF CURRENT STANDARDS OF DIAGNOSIS AND TREATMENT OF ANKYLOSING SPONDYLITIS IN CANADA: IDENTIFICATION OF CARE GAPS AND EDUCATIONAL PRIORITIES Walter P. Maksymowych (University of Alberta)

Objectives: The primary objective of this survey was to assess the current standards of care for ankylosing spondylitis (AS) patients. Secondary objectives included assessment of current approaches to diagnostic evaluation, familiarity with and use of outcomes measures, familiarity with current treatment guidelines, and to identify continuing educational priorities.

Methods: A survey questionnaire was drafted by a panel of 17 rheumatologists with a special interest in AS and incorporated the Assessments in AS Working Group (ASAS) recommendations for outcome assessment and treatment.

Results: 86 physicians completed the survey out of 329 that were mailed. Inadequate response to 3 and 2 NSAIDs was considered treatment failure by 43% and 31% of respondents, respectively. Most (87%) considered 3 months or less as adequate duration to assess the efficacy of NSAID therapy. Most (85%) would prescribe methotrexate (MTX) at 20-25mg weekly for at least 3 months and over 90%, sulfasalazine (SSPN) at 2-3 grams daily for at least 3 months, primarily for peripheral joint disease. The most common reasons cited for use of a biologic was NSAID failure (51%) with infliximab (IFX) selected for compliance issues or inability to self-inject and etanercept (ET) for younger patients preferring self-injection. There was little difference in perceived efficacy amongst biologics; IFX was considered somewhat more effective for extra-articular disease (EAD) than ET. EAD was estimated to be present in 27% of patients. Only a minority cited the use of the BASDAI (41%), BASFI (14%), BASMI (3%) and MRI (37%), whilst almost all cited the use of Schober , occiput-to-wall, and chest expansion. Familiarity with the Canadian Spondyloarthritis (SpA) Treatment recommendations was modest (48% indicating a score of 4 or 5 on a 0 (lowest) to 5 (highest) familiarity scale) and lower with the ASAS Treatment recommendations (19% with score of 4 or 5). Management of NSAID-refractory AS was the topic most highly prioritized for continuing education followed by the use of MRI, monitoring of disease progression using the BASDAI and BASFI, when to initiate biologic therapy, and the Canadian SpA Treatment recommendations. The preferred format was interactive case-based education.

Conclusions: Current standards of care are consistent with published Canadian and ASAS treatment recommendations despite the relative lack of awareness of them. Only a minority follow ASAS recommendations for outcome assessment in routine clinical practice. Continuing education in the management of NSAID-refractory disease and appropriate use of MRI constitute high priority needs.

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INCREASED CUMULATIVE, CARDIAC AND VASCULAR DAMAGE IN ANTI-RO/SSA POSITIVE PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) Evelyne Vinet, Ann E. Clarke, Sasha Bernatsky, Yvan St-Pierre, Christian A. Pineau (McGill University Health Centre, Montreal, PQ, Canada)

Objectives: BACKGROUND: There is a small body of evidence showing an association between the presence of anti-Ro/SSA antibodies and higher cumulative damage in SLE patients. In addition, a recent study (Petri et al., ACR 2006) has shown an increased risk of carotid plaques in SLE patients with secondary Sjogren's syndrome. AIM: To evaluate the association between presence of anti-Ro/SSA antibodies and cumulative damage in patients with SLE.

Methods: Patients with ACR criteria for SLE have been enrolled at the time of their first clinic visit and followed prospectively with annual assessments. Data from the last assessment performed between 01/2001 and 05/2006 were used for analysis. Determination of the anti-Ro/SSA titer was performed by enzyme immunoassay. Damage was ascertained with the SLICC/ACR Damage Index (DI). Variables used as potential predictors in this model included age, gender, ethnic origin, lupus duration, current smoker status, antimalarial or immunosuppressant use and anti-DNA status. Linear regression models were used to examine the association between the variables.

Results: 276 patients were included in this study. Of these, 92% were women and 73.7% were Caucasians. The mean age was 45.1 years (SD 15.0), the mean disease duration was 13.5 years (SD 10.7) and the median total DI was 1 (IQR 0.3). Anti-Ro/SSA were found in 38.6% of patients. After adjustment for potential confounders, Anti-Ro/SSA positivity was significantly associated with a higher total DI (0.66 indicating an increase in DI of 0.66 associated with the presence of Anti-Ro/SSA; 95% CI 0.17, 1.16). When individual DI categories were analyzed, presence of anti-Ro/SSA was significantly associated with higher cardiovascular (0.17 ; 0.03, 0.32), peripheral vascular (0.14 ; 0.001, 0.28) and combined cardiovascular and peripheral vascular (0.31 ; 0.12, 0.51) damage.

Conclusions: Presence of anti-Ro/SSA is associated with higher cardiac, vascular and cumulative damage in SLE. Further investigations are required to clarify these relationships and the possible pathophysiological mechanisms involved.

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METHOTREXATE IN SCLERODERMA HAS A HIGH PROBABILITY OF EFFICACY: Sindhu R. Johnson, Brian M. Feldman , Janet E. Pope, George A. Tomlinson (Division of Rheumatology, University Health Network, The Hospital for Sick Children, Department of Health Policy Management & Evaluation, University of Toronto, Toronto, Ontario, Canada., Division of Rheumatology, The Hospital for Sick Children; Departments of Pediatrics, Health Policy Management & Evaluation, and Public Health Sciences, University of Toronto, Toronto, Canada., Division of Rheumatology, University of Western Ontario, London, Ontario, Canada., Division of Clinical Decision Making and Health Care, Toronto General Research Institute, Toronto, Ontario, Canada)

Objectives: Randomized trials for rare diseases suffer from methodological challenges; it is difficult to recruit sufficient numbers of patients, and trials are underpowered to detect treatment effects. Using traditional (frequentist) analysis, a p-value of >= 0.05 should mean to investigators that they are unable to reject the null hypothesis (of no treatment effect). The medical community, however, often labels a trial as egative when the p-value is >= 0.05. Our study demonstrates how the use of Bayesian analysis can convey more clinically relevant information to clinicians using the example of the methotrexate (MTX) in systemic sclerosis (SSc) trial.

Methods: Data from 71 diffuse SSc patients (35 in the MTX arm, 36 in the placebo arm) enrolled in the trial were obtained and re-analyzed. Likelihood functions for individual differences in 12-month modified Rodnan skin score (MRSS), University of California Los Angeles (UCLA) skin scores, Physician Global Assessment, Health Assessment Questionnaire Disability Index (HAQ-DI) score and carbon monoxide diffusing capacity (DLCO) were calculated. Using non-informative prior probability distributions, the probability of a beneficial treatment effect or the next treated patient was determined.

Results: For the next treated patient, the probability of a beneficial effect of MTX on MRSS is 75%, UCLA skin score is 79% and physician global assessment is 70%. The probability of a beneficial effect on HAQ-DI is 62% and DLCO is 81%.

Conclusions: Using this Bayesian analysis, the common interpretation of the MTX in SSc trial that "MTX does not work in scleroderma" can be seen to be incorrect. MTX has a high probability of a beneficial effect on skin score, disability and lung function. Bayesian analysis of small clinical trials allows for a more flexible and clinically relevant interpretation of the data.

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OSTEOGENIC DIFFERENTIATION POTENTIAL IS PRESERVED IN MARROW-DERIVED MESENCHYMAL CELLS FROM RATS WITH COLLAGEN-INDUCED ARTHRITIS Takuji Kizawa , Tetsuya Tomita, Daiki Morimoto, Kouji Nomura, Hideki Yoshikawa (Department of Orthopaedics, Osaka University Graduate School of Medicine)

Objectives: To examine in vitro osteoblastic differentiation ability of marrow-derived mesenchymal cells (MMCs) from rats with collagen-induced arthritis (CIA).

Methods: 7-week-old female Lewis rats were immunized intradermally with bovine type 2 collagen, emulsified Freund incomplete adjuvant. One week later, a booster injection was administered. After 3 weeks from first immunization, marrow cells were isolated from the femora of CIA rats, and cultured in MEM with 15% FBS. After removed of non-adherent cells, the adherent cells were cultured in MEM with 15% FBS containing 82μg/mL ascorbic acid, 10 mM b-glycerophosphate, and 10nM dexamethasone for the osteoblast differentiation assay. After 2, 7, and 14 days in culture, the expression of genes related to the osteoblast activity (collagen type 1, Alkaline phosphatase (ALP), osteopontin, bone sialoprotein (BSP), and osteocalcin (OCN)) in MMCs was examined by real-time quantitative PCR using b-actin as a reference gene. After 7 and 14 days, ALP activity was measured, and after 14 and 21 days, quantitative alizarin red S mineralization was measured. As controls, MMCs from healthy rat (same age) were used. Group differences were evaluated using the Mann-Whitney U test. Statistical significance of differences was defined as $P<0.05$.

Results: The expression of BSP increased at day 7 in both CIA rats and control ones. The expression of OPN and OCN increased at day 14 in both groups. There was no significant difference in the expression of bone matrix genes between CIA rats and healthy donors at any of the time points. There was no significant difference in ALP activity between CIA rats and healthy donors at days 7 and 14 in culture. Quantitative Alizarin red S mineralization assays showed no significant difference between CIA rats and healthy ones at days 14 and 21 in culture.

Conclusions: Osteogenic differentiation potential was preserved and did not decrease in MMCs from CIA rats compared with healthy rats.

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RAPPS: RHEUMATOID ARTHRITIS PATIENT PREFERENCE SURVEY Denis Choquette, SA Shaikh, M. Abu-Hakima (Hopital Notre-Dame, CHUM, University of Montreal, Private Practice, St-Catherine's, Ontario, University of Calgary, Alberta)

Objectives: To explore the different elements that influence the patients and physicians in their selection of an anti-tnf agents

Methods: 415 patients and 35 rheumatologists participated. All the patients were candidate for a treatment with an anti-tnf agents. Questionnaire was self-administered to the patients. 15 items in the questionnaire were responded by the patients and 10 by the physicians. This physician part measures pre-survey treatment preferences and factors considered by physicians when prescribing. The patient part explores the different variables that could influence selection of the agents : mode and frequency of administration, , previous experience with injections .

Results: 77 rheumatologists were recruited to enroll patients in the study. 35 (45%) responded to Part 1 of the (RAPPS). Prior to the survey, 25% of physicians reported they chose the IV infusion first, 73% chose the SC route. Post-completion, rheumatologists evaluated the influence of the RAPPS on their preferential route of administration. The weighted average on a scale of 1 (not at all) to 5 (great) was 2.7. Fifty-nine percent reported that the RAPPS had at least some influence on their decision. Sixty-nine percent reported that they prescribe in accordance with their patients preference more than 80% of the time. This result is supported by the results from a second RAPPS item: "To what degree did the patient preference influence your decision?" The weighted average was 4.1 on a scale of 1 (not at all) to 5 (greatly), with 80% of rheumatologists selecting 4 or 5. Physicians were also asked to prioritize the importance of various factors to select an agent. "Patient Preference" had a weighted average of 4.1 (1 = least, 5 = most). The "patient's profile" had a weight of 3.7. The large majority of physicians (90%) stated the survey was thorough and that all pertinent issues were discussed when choosing an appropriate treatment.

A total of 414 patients were surveyed. The majority (90%) of patients participating in the study were older than 40. Sixty-four percent were between 41 and 64. The majority (75%) reported they remember to take their medications, that they are conscientious in doing so (87%) and that they persist even when they feel worse (94%).

Fifty-five percent reported they were "very comfortable with needles." On the other hand, the majority (72%) reported they had never given an injection.47% would prefer to give themselves regular injections, or have a family member or friend administer the injection, 54% prefer a healthcare professional to administer an injection.

Conclusions: A majority of physicians work collaboratively with their patients to make decisions regarding therapy and that patient preference is a major factor influencing treatment decisions. There is a discrepancy between the patient stated prefered route and the actual route of administration.

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LATE ONSET HYPER-IMMUNOGLOBULIN D SYNDROME WITH ATYPICAL NEUROLOGIC SYMPTOMS Derek Smith, Charles Maxner, Volodko Bakowsky (Dalhousie University, Halifax, Nova Scotia)

Objectives: To describe a case of hyper-immunoglobulin D syndrome with remarkable novel features.

Methods:

Results: Hyper-immunoglobulin D syndrome (HIDS) is a rare autosomal recessive genetic condition characterized by periodic episodes of high fever, lymphadenopathy, arthralgia or arthritis, abdominal pain, and skin lesions, often accompanied by an elevated serum IgD level. The majority of the approximately 200 known cases of HIDS are caused by mutations in the MVK gene which codes for mevalonate kinase (MK), a critical enzyme in the isoprenoid lipid metabolism pathway. In HIDS, febrile episodes typically begin in infancy, last 3-7 days, and recur every 2-8 weeks. The frequency of episodes often lessens after puberty.

We describe a case of HIDS in a 50-year-old man with several unusual features. Firstly, his febrile attacks began as a teenager, long after the usual infantile onset. The latest onset of classic-type HIDS previously reported is at 10 years of age. Secondly, sequencing of the patient MVK gene revealed a mutation previously described only in cases of the more severe disease mevlaonic aciduria (MA) and not previously described in HIDS. Finally, the patient experienced recurrent episodes of visual and neurological symptoms including diplopia, blurred vision, unilateral weakness and paresthesia, and dysarthria. These symptoms have not been previously associated with HIDS yet extensive investigations in this case failed to suggest other causes.

Conclusions: The remarkable features of this case expand our knowledge of the clinical features of HIDS.

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CLINICAL RESPONSE AND LABORATORY MONITORING OF WEGENER GRANULOMATOSIS TREATED WITH RITUXIMAB: A CASE REPORT. Ruth Padmore, Jacob Karsh (The Ottawa Hospital, Ottawa, Ontario)

Objectives: Efficacy of rituximab has been demonstrated in some, but not all patients with Wegener granulomatosis. We present a case report of a patient with refractory pulmonary involvement with Wegener granulomatosis, who responded to therapy with rituximab, and describe the laboratory monitoring following treatment.

Methods: Case Report: The patient is a 20-year-old female with a 3-year history of Wegener granulomatosis, involving the lungs and upper airways, with cavitating lung lesions, endobronchial scarring and nasal septum perforation, refractory to therapy with prednisone and cyclophosphamide. The patient was given 2 courses of rituximab, 500 mg once a week, for 4 weeks.

Results: The patient demonstrated good response of the respiratory system lesions after the 1st course. After a disease flare, a 2nd course of rituximab was given, 10 months after the 1st course. A reduction in proteinase-3 was noted after both courses of rituximab, from 81.3 kU/L to 13.6 kU/L following the 1st course, and from >100 kU/L to 40.6 kU/L following the 2nd course. Antineutrophil cytoplasmic antibodies (c-ANCA) decreased very quickly after the 1st course, from positive to inconclusive to negative, but remain positive after the 2nd course. Monitoring of CD20-positive peripheral blood lymphocytes by flow cytometry immunophenotyping was introduced after the 2nd course of rituximab, and to date, 5 months after the 2nd course, the CD20-positive B-cell levels remain undetectable (less than 0.001 x 10^9/L), and the patient remains clinically well. Further testing is planned on a monthly basis.

Conclusions: Rituximab shows activity in the treatment of Wegener granulomatosis in our patient. Monitoring of response to rituximab should include assessment of c-ANCA, proteinase-3 and CD20-positive peripheral blood lymphocytes, to improve guidance of therapy.

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DIFFERENCES BETWEEN PATIENT AND PHYSICIAN ASSESSMENTS OF DISEASE ACTIVITY IN SYSTEMIC SCLEROSIS Marie Hudson, Jennifer G. Walker, Suzanne Taillefer, Murray Baron, Canadian Scleroderma Research Group (McGill University, University of Calgary)

Objectives: Differences between patient and physician assessments of disease activity have been described in studies of other rheumatic diseases. In those studies, patients were influenced among other things by symptoms and function when rating disease activity whereas physicians were influenced by objective findings, including physical exam findings and laboratory tests. We undertook this study to describe the differences between patient and physician assessments of disease activity in patients with systemic sclerosis (SSc).

Methods: Patients included were those enrolled in the Canadian Scleroderma Research Group (CSRG) Registry. Patients in this Registry undergo a standardized assessment which includes a physician global assessment of disease activity (range 0-10), a self-administered Scleroderma-Health Assessment Questionnaire (that includes a patient global assessment of disease severity (range 0-10) used here as a proxy for disease activity) and laboratory tests (including ESR and CRP). Data on the items included in the European Scleroderma Disease Activity Index (SDAI) are collected and an SDAI score is computed (range 0-10). The difference between patient and physician global assessments was assessed by simple subtraction (patient minus physician global assessments) and by univariate correlations using Kendall tau.

Results: There were 413 patients included (86% women, mean age 55 (+/- 13), mean disease duration 11 years (+/- 9)). Mean patient and physician global assessment were 3.6 (+/- 2.6) and 2.2 (+/- 2.0), respectively. Mean SDAI, ESR and CRP were 2.8 (+/- 2.1), 23.2 (+/- 22.4) and 5.7 (+/- 7.0), respectively. The difference between patient and physician global assessments showed that patients agreed with, overscored or underscored physicians 18%, 59% and 22% of the time, respectively. The correlation between patient and physician global assessments was weak (0.25, $p < 0.001$) as were the correlations between patient global assessment and SDAI, ESR and CRP (0.24 ($p < 0.001$), 0.10 ($p = 0.01$) and 0.15 ($p = 0.001$), respectively) and between physician global assessment and SDAI, ESR and CRP (0.29 ($p < 0.001$), 0.08 ($p = 0.07$) and 0.17 ($p < 0.001$), respectively).

Conclusions: In this study, there were important differences between physician and patient global assessments of disease activity in SSc. The differences suggest that traditional biomedical assessments of disease activity may be supplemented by patient-derived information. Additonal analysis will allow us to identify the independent predictors of patient and physician assessments and to gain further insight into the concept of disease activity in SSc.

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HYPOCOMPLEMENTEMIA IN SYSTEMIC SCLEROSIS MAY INDICATE OVERLAP DISEASE Marie Hudson, Jennifer G. Walker, Suzanne Taillefer, Murray Baron, Canadian Scleroderma Research Group (McGill University, University of Calgary)

Objectives: Although complement fixation is not commonly thought to be part of the pathogenesis of systemic sclerosis (SSc), some have found that hypocomplementemia is associated with SSc. Of note, it is included in the European Scleroderma Disease Activity Index. We hypothesized that hypocomplementemia in SSc might be a marker of overlap disease. We therefore undertook to examine if patients with SSc with hypocomplementemia had more features of overlap than those with normal complement levels.

Methods: The study subjects consisted of those enrolled in the Canadian Scleroderma Research Group (CSRG) Registry. Patients in this Registry are recruited from the practices of 15 rheumatologists across Canada and have a diagnosis of SSc made by the referring rheumatologist. Patients undergo a standardized assessment by a physician, including a history and physical exam, and laboratory testing. Complements were measured at the time of recruitment. Normal C3 and C4 were defined as >= 0.8 g/L and > 0.1 g/L, respectively, and hypocomplementemia as levels below those cutoffs. Differences in selected clinical characteristics reported by the referring physicians and in laboratory tests between patients with normal levels of both C3 and C4 and those with hypocomplementemia were compared using Fisher exact test. After correcting for multiple comparisons, a $p < 0.003$ was considered statistically significant.

Results: This study included 279 patients (88% women, mean age 56 (+/- 13), mean disease duration since onset of first non-Raynaud manifestation of SSc 11 years (+/- 9)). Of these, 255 (91%) had normal complements and 24 (9%) had hypocomplementemia. Patients with hypocomplementemia were significantly more likely to have physician-reported inflammatory arthritis (46% vs 38%, $p < 0.001$) and vasculitis (17% vs 1%, $p < 0.001$) than those with normal complements . There was a trend towards more myositis (38% vs 14%, $p < 0.007$) and anti-chromatin antibodies (25% vs 9%, $p < 0.03$) in patients with hypocomplementemia compared to normals.

Conclusions: Complement fixation is not thought to be a major event in the pathogenesis of SSc and so previously reported associations with disease activity are intriguing. Our findings suggest that hypocomplementemia may identify a particular subgroup of SSc patients who are more likely to have features of overlap disease. Therefore, hypocomplementemia may not reflect disease activity related to the characteristic pathogenic events in SSc, instead reflecting the coexistence of other connective tissue disease. In this setting, it may provide a marker for patients who may require consideration for immunomodulating therapy.

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EFFECT OF CLASSICAL DMARDS ON THE PRODUCTION OF CITRULLINATED (CIT-) ANTIGENS IN VITRO: THE CASE OF SULFASALAZINE (SSZ). M. Lora, PhD, HA Menard, MD (Molecular Rheumatology Section, Division of Rheumatology, McGill University and MUHC, Montreal, Qc. Canada)

Objectives: Among the cit-antigens targeted in vivo in RA, cit-vimentin (Sa antigen) presents unique attributes. Anti-Sa antibodies are RA specific. When present in early arthritis, they associate with a worse prognosis than rheumatoid factor and anti-CCP testing combined. Like the latter, they are associated with the HLA DR4 alleles carrying the shared epitope defining a positive risk. Unlike anti-CCP, they are also associated with the absence of a negative risk HLA DR allele i.e. the absence of a protective allele. Unlike anti-CCP titers, anti-Sa titers change with successful treatment. We have previously shown that Methotrexate (MTX), the most useful single RA treatment inhibits, in a folinic preventable manner, in vitro citrullination in UMR106 cells but not in ECV304 cells. We present a similar dissection of the effect of SSZ on cit-antigen production.

Methods: UMR106 and ECV304 cells are grown and used either at sub-confluence or confluence to study SSZ and folinic acid treatment alone or in various combinations. Total cellular cit-proteins are detected by western blot using rabbit anti-chemically modified citrulline (anti-CMC) and antigenic cit-proteins are detected using anti-Sa rich rheumatoid sera. The blots are analyzed qualitatively and scanned to achieve a semi-quantitative measure. Effect on cell viability, time course of effect and dose response curve are studied. Experiments to study the influence of folinic acid are designed using the folate-SSZ interactions predicted by the Reduced Folate Carrier (RFC) model.

Results: At 0.5 to 1 mM, concentrations which approximate the calculated therapeutic doses used in vivo, SSZ inhibits the production of total cit-proteins and Sa-related antigens in both cell lines grown at sub confluence. At confluence, SSZ only inhibits citrullination in UMR106. In keeping with the RFC model, folinic acid pre-treatment increases the SSZ inhibition.

Conclusions: SSZ shows an in vitro dose-dependent effect on protein citrullination depending on the cell type and culture conditions. Folinic acid co-treatment which inhibits the MTX effect seems to potentialize the SSZ effect. Pending confirmation, our results open the door to specific dosing modalities

of MTX, SSZ and folate combinations based on sound chronopharmacological principles. We are planning such an in vivo study of downregulation of citrullination production in anti-Sa positive RA patients.

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KNEE OSTEOARTHRITIS CLINICAL PRACTICE GUIDELINES HOW ARE WE DOING? Melanie N. DeHaan, Jaime Guzman, Mark Theodore Bayley, Mary J. Bell (Division of Physiatry, Department of Medicine, University of Toronto, Toronto, Ontario, Department of Medicine, University of British Columbia, Vancouver, British Columbia, Division of Rheumatology, Department of Medicine, University of Toronto, Toronto, Ontario)

Objectives: To determine the degree to which documented knee osteoarthritis (OA) care in a teaching rheumatology clinic corresponds to comprehensive evidence-based treatment guidelines. The secondary objective is to explore patient, provider or disease characteristics that predict whether the rheumatologists would offer recommended knee OA treatments.

Methods: The charts of 105 randomly selected patients meeting criteria for knee OA were reviewed. The patients received care from three rheumatologists working in a major Canadian teaching centre between 2002 and 2005. The chart abstraction tool was designed based on the European Union League Against Rheumatism, American College of Rheumatology and The Arthritis Society guidelines for OA treatment. Descriptive statistics were used for patient demographics and the proportion of patients receiving recommended care. Exploratory regression and univariate analyses were performed to identify variables associated with the provision of education, exercise, and acetaminophen.

Results: The most frequently recommended nonpharmacologic treatments were any kind of exercise (58.1%), weight loss in those overweight (50.0%), physiotherapy (42.9%) and strengthening exercise (40.0%). Other nonpharmacologic treatments were documented in less than 30% of patient charts. The most frequently prescribed pharmacologic treatments were acetaminophen (68.6%), intraarticular corticosteroids (65.7%), NSAIDs/COXIBs (50.5%) and intraarticular hyaluronans (43.8%). Topical pharmaceuticals, glucosamine/chondroitin and opioid analgesics were recommended to less than 20% of the patients. Exploratory analyses suggested the following factors may be associated with increased documentation of recommended care: female gender, younger age, overweight, more clinic visits, decreased symptom length and the individual rheumatologist.

Conclusions: Non-pharmacologic knee OA treatments currently recommended by practice guidelines were seldom documented in patients charts in this Canadian rheumatology teaching centre. These findings are similar to studies conducted before the practice guidelines became available and to results reported from general practices. This suggests the need for reminder systems or other strategies to promote physician adherence to current guidelines.

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MYCOLEPTODISCUS INDICUS SEPTIC ARTHRITIS - A RARE FUNGAL ARTHRITIS OF THE KNEE Catharine Dewar., James Hayward, James Dunwoody (Division of Rheumatology, Lions Gate Hospital, North Vancouver, B.C., Division of Family Medicine, Lions Gate Hospital, North Vancouver B.C., Division of Orthopedic Surgery, Lions Gate Hospital, North Vancouver, B.C.)

Objectives: To review a case of Mycoleptodiscus indicus fungal septic arthritis.

Methods: This presentation will outline the presentation, diagnosis and management of a rare fungal septic arthritis of the knee. The causative organism is a dematiaceous hyphomycete, Mycoleptodiscus indicus. The biology of this fungus and a review of one other case in the medical literature will be included.

Results: A 54 year old healthy male returned from a 3 week vacation in Costa Rica, and presented with a tense and painful effusion of the left knee. The synovial fluid was inflammatory with 19250 x 10^6/L WBC, predominantly neutrophils. ESR was 57 mm/hr. RF was negative. One of 6 synovial fluid cultures grew a fungus, identified initially as Aspergillus, after 3 weeks. The knee was injected once with depomedrol before this result was known. The knee was repeatedly aspirated and fluid was sent for gram stains, and full cultures, including fungi and TB. There were no further positive cultures. The radiographs of the knee remained unremarkable apart from the effusion. The inflammtion and effusion persisted and a bone scan showed intense uptake suggesting septic arthritis of the knee. A gallium scan was also consistent with osteomyelitis. An MRI showed a large effusion, markedly abnormal synovium, edema of the tibial plateau, and erosion of the cortex of the posteromedial tibial plateau suggesting osteomyelitis. The patient was taken to the operating room where multiple synovial biopsies and several bone biopsies were done, of the involved areas. The knee was irrigated with 6 litres of saline. Following the procedure the patient improved significantly with resolution of the pain, and normalisation of the ESR. A small effusion persisted and the patient was started on methotrexate in addition to naprosyn, which dramatically improved his symptoms. A full 7 months after the initial preliminary identification of the fungus as Aspergillus, the organism was identified as Mycoleptodiscus indicus. This is never reported as a contaminant in cultures, and presumably is the true identity of the fungus infecting the knee. There is only one other case report of septic arthritis with this organism, also in the knee. This fungus is a tropical or subtropical species, and it grows on plants along the coastal plains of South Carolina, Florida, Mexico, and northern and western South America. Presumably the aggressive synovial and bone biopsies plus thorough saline irrigation of the knee was the reason for the patient's recovery from this rare Phaeohyphomycosis.

Conclusions: Mycoleptodiscus indicus is a rare form of fungal infection of the knee. There are only 2 reported cases in the world literature, including the present case. Diagnosis is delayed due to this rarity of the infecting organism. Optimal treatment presumably includes surgery.

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PREDICTING THE COURSE OF JUVENILE DERMATOMYOSITIS-SIGNIFICANCE OF EARLY CLINICAL AND LABORATORY FEATURES Elizabeth Stringer, Davinder Singh-Grewal, Ronald Laxer, Brian Feldman (The Hospital for Sick Children, University of Toronto, Canada, The Children's Hospital at Westmead, Sydney, Australia)

Objectives: (1) To describe the disease course of JDM (2) To determine whether early clinical and laboratory features can be used to predict time to remission and/or disease course.

Methods: An inception cohort of JDM patients was studied (1991-2005). Clinical and laboratory data from each clinic visit was entered into a database prospectively. Remission was defined as no active skin lesions, normal muscle strength, and normal muscle enzymes for a period of 6 months while off all medications. Disease course was defined as: monophasic = remission in <36 months, chronic = persistent disease activity or continues on medication at 36 mos, polyphasic = flare of disease after achieving remission. Only patients followed for 36 months were included in the predictors of course analysis. Clinical, laboratory, and therapeutic data were reviewed at diagnosis, 3m, 6 m, and 1 year after diagnosis. Predictors of remission were determined using survival analysis and proportional hazards models. Stepwise logistic regression was used to determine models of predictors of course.

Results: 84 patients were included in the study (56F/28M). Median age of diagnosis = 6.8y. The median length of follow-up was 5y. 35 patients (43%) met the criteria for remission. Median time to remission was 4.2 years. 36 (59%) patients had chronic, 23 (37%) had monocyclic, and 2 (3%) had polycyclic disease course. Predictors of remssion at 3 mos: the presence of Gottron's rash predicted longer time to remission ($p<0.01$). At 6 mos: the predictors of remisson were presence of nail fold abnormalities (hazard ratio=0.58, CI 0.37-0.88, p=0.01) and Gottron's rash (hazard ratio=0.58, CI 0.34-0.91, $p<0.02$). At one year: the presence of Gottron's rash predicted time to remission (hazard ratio 0.49, CI 0.35-0.67, $p<0.0001$). Predictors of course: patients were analyzed as either monophasic or non-monophasic. At diagnosis, 3 mos, and 6 mos, we were unable to find a prediction model of disease course.

Conclusions: Approximately 2/3 of patients had a chronic course. The continued presence of Gottron's rash through 3, 6 and 12 mos was strongly pre-

dictive of a longer time to remission. Skin rash even early on in the course of JDM appears to be predictive of a longer time to remission.

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NEW ONSET POLYARTHRITIS AND POSITIVE ANA FOLLOWING AUTOLOGOUS STEM CELL TRANSPLANTATION Cheryl Barnabe, Avril Fitzgerald (University of Calgary)

Objectives: Discuss a case of anti-nuclear antibody (ANA) positive acute polyarthritis developing after peripheral blood stem cell transplantation (PBSCT), and review the literature on autoimmune disorders and antibodies occurring after PBSCT.

Methods:

Results: A 24 year old African male, recently immigrated from Sudan, was found to have splenomegaly and thrombocytopenia (platelets 82x109/L) at the immigration settlement health centre. He gave an 11 year history of recurrent fevers, arthralgias, myalgias and headaches. He had previously received treatment for pulmonary tuberculosis in Sudan. Infectious disease workup was negative, and he received an empiric trial of anti-malarial therapy. Polycythemia (hemoglobin 189 g/L), lymphocytosis (white blood cell count 10.4x109/L, 55 percent lymphocytes) and thrombocytopenia (100x109/L) persisted, and a hematology consult was sought. He gave no history of arthritis, skin rash, or symptoms of an autoimmune disorder. ANA and rheumatoid factor (RF) were negative, with normal complement levels, increased immunoglobulin G (IgG) (20.00 g/L; no monoclonal peak), and C - reactive protein (CRP) 0.0 mg/L. Bone marrow biopsy revealed a high lymphocyte count (40 percent of nucleated cells) suggesting a T cell lymphoma. A gamma-delta T cell lymphoma was confirmed on splenectomy, and he received one cycle each of ESHAP (etoposide, methylprednisolone, cytarabine and cisplatin) and DICEP (cyclophosphamide, etoposide, and cisplatin) chemotherapy prior to autologous CD34-selected PBSCT. Cytomegalovirus (CMV) serology prior to transplantation was IgG positive, and he received prophylactic penicillin and acyclovir therapy for nine months. One month after the discontinuation of this prophylactic therapy the patient developed acute symmetrical polyarthritis involving proximal interphalangeal and metacarpophalangeal joints, wrists, and knees without other systemic symptoms or findings. Transient lymphocytosis (95%) developed and resolved within one month. ANA was now positive (nucleolar pattern), titre of 1/640, with negative extractable nuclear antigens (ENA), RF, and anti-cyclic citrullinated (CCP) antibodies. Radiologic examination was normal. Polyarthritis persisted for six months and subsided spontaneously.

Conclusions: Development of new autoantibodies and polyarthritis after autologous PBSCT appears paradoxical. The limited case reports describing these phenomena for autologous and allogeneic PBSCT for autoimmune and neoplastic disorders are reviewed. Etiologic possibilities in this case include viral arthritis, a paraneoplastic related arthritis or de novo autoimmune disease (SLE or RA) related to PBSCT processes or splenectomy.

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JUVENILE PSORIATIC ARTHRITIS (JPSA) IS IT A SEPARATE DISEASE? Butbul Aviel Y, Dhillon S , Tyrrell PN, Silverman E.D (Hospital for Sick Children University of Toronto)

Objectives: To compare the clinical features and outcome between patients with JPsA and JIA.

Methods: Fifty-four children who fulfilled the diagnostic criteria for JPsA (Vancouver or ILAR criteria), 32 with <5 joints in the first 6 months of disease (oligo psA) and 22 (=/>5 joints) polyarticular nset(poly-JPsA,) were compared to 54 JIA patients (ILAR criteria) who were matched by gender, age and date of diagnosis and articular pattern. JIA patients were excluded if: had a positive RF, enthesitis related arthritis or first degree relative with psoriasis.

Results: There was no difference in the mean age of onset of patients with oligo JpsA and oligo-JIA (mean age 6.35 .6 vs 6.5 .9; p=0.49); and poly-JpsA and poly-JIA (mean age 8.9 .4 vs 8.6 .4y's p=0.25). Lengths of follow-up were similar for both the groups: 6.6 .8y's vs 6.7 .9 years for the oligoarticular groups and 5.8 .5 vs. 6.3 .1y's for the polyarticular groups. There was no difference in the percentage of patients between the oligoarticular groups who developed extended oligoarticular arthritis (37.5% vs 34%; p=1) or in the percentage of patients who were ANA positive (57% vs. 36%; p=0.31). The only differences were that oligo-JPsA patients were more likely than oligo-JIA patients to have dactilytis (21% vs 0%; p<0.01) and nail pitting (50% vs 18.7% p<0.05). However, in polyarticular patients the percentages with dactylitis were similar(18% vs 36%; p=0.25).

Outcome: Fequency of uveitis was identical in both groups of oligoarticular patients (18.7%), but there was a trend for a higher rate of uveitis in patients with poly-JPsA as compared to poly-JIA (22.7% vs 4.5%; p=0.1) while contractures were more frequent in poly-JIA as compared to poly-JPsA (45% vs 18% p=0.058). At last follow-up mean CHAQ scores were similar in both the polyarticular (0.19 .3 for JPsA vs 0.18 .29 for JIA; p= 0.325) and oligoarticular groups (0.137 .33 vs 0.1 .29; p=0.7

Conclusions: We found that the only differences between patients with JPsA and JIA were: 1)Oligo-JPsA was associated more frequently with dactylitis than oligo-JIA; 2)Poly-JIA patients were more likely to develop contractures than poly-JPsA patients while mean CHAQ scores were similar.3)Poly-JPsA patients were more likely to develop uveitis than poly-JIA(trend only). We suggest that JIA and JPsA are similar diseases and rheumatologists should reconsider the need to divide JIA based on the presence of psoriasis.

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LONG-TERM EFFICACY AND SAFETY OF A REPEAT TREATMENT COURSE OF RITUXIMAB IN RHEUMATOID ARTHRITIS PATIENTS WITH AN INADEQUATE RESPONSE TO ONE OR MORE TNF INHIBITORS Keystone, E., Pope, J.E., Fleischmann, R., Emery, P., Chubick, A., Dougados, M., Baldassare, A.R., Bathon, J.M., Hessey, E., Totoritis, M., Cooper, S. (Rheumatology Department, University of Toronto, Toronto, Ontario, Canada, St. Joseph's Health Centre, The University of Western Ontario, London, Ontario, Canada, University of Texas Southwestern Medical Center, Dallas, Texas, Unites States, Rheumatology Department, Leeds General Infirmary, Leeds, United Kingdom, Arthritis Center of Texas, Baylor University Medical Center, Dallas, Texas, United States, Rheumatology Department, Hopital Cochin, Paris, France, Department of Internal Medicine, St Louis University, Missouri, United States, Division of Rheumatology, Johns Hopkins University, Baltimore, Maryland, United States, Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, Biogen Idec, San Diego, California, United States)

Objectives: To evaluate, in an ongoing extension study, the long-term efficacy and safety of a repeated course of rituximab (RTX) therapy in patients (pts) with active rheumatoid arthritis (RA) and an inadequate response to >/=1 TNF inhibitors.

Methods: Pts were eligible to receive additional open-label treatment courses of RTX provided they had shown a predefined improvement by Week 24 (>/=20% improvement in joint counts) following a single course of two infusions of RTX given 2 weeks apart within a Phase II or Phase III study. Subsequent treatment courses consisted of the same regimen (described previously). Placebo pts in the original study were also eligible to enter and received their first course of RTX within the extension study. All pts received weekly methotrexate (MTX) at stable doses (10 5 mg). Need for repeated treatment was determined by each patient's treating physician and >/=8 SJC and TJC. ACR scores were calculated relative to the original baseline, which was assessed prior to administration of the first course of RTX.

Results: To date, 279 pts have received a second course of RTX (repeated treatment; C2). Of these, 155 pts had reached 24 weeks of follow-up post-C2 at the time of the data-cut. Baseline characteristics of the 155 pts were similar to the overall pt population. A higher proportion of pts who received a second course achieved an ACR20, 50 or 70 response (72%, 42%, and 21%, respectively) compared with pts in the first course (65%, 33%, and 12%, respectively). The number of pts achieving low disease activity (DAS28 =/<3.2) and remission (DAS28 <2.6) was also greater for pts who received a second course (25% and 13%, respectively) compared with pts in the first course (13% and 6%, respectively), relative to original baseline. Repeated courses of RTX were generally well tolerated, with no evidence of an added

increase in the rate of infections. The incidence of adverse events (including infusion reactions) was lower with additional courses of RTX.

Conclusions: These results indicate that repeated courses of RTX produce a comparable or improved degree of efficacy relative to the original baseline, without apparent cumulative toxicity.

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THE "RA PROTECTIVE" DERAA HLA SHARED EPITOPE IS A DOMINANT NEGATIVE PREDICTOR OF SEVERITY IN PATIENTS WITH POLYARTHRITIS OF RECENT ONSET, EVEN IN THE PRESENCE OF THE QKRAA SHARED EPITOPE AND/OR ANTI-CCP ANTIBODIES Nathalie Carrier, Claude Daniel, Artur de Brum Fernandes, Patrick Liang, Pierre Cossette, Gilles Boire (Centre hospitalier universitaire de Sherbrooke, Sherbrooke Qc Canada, Universite du Quebec-Institut Armand-Frappier, Montreal Qc Canada)

Objectives: In polyarthritis of recent-onset (EPA) patients, to define HLA DR associations with anti-CCP at inclusion and with severe outcomes at 30 months into disease.

Methods: We studied 213 consecutive EPA patients 1 to 12 months after clinical onset (median 3 months) and followed them prospectively. Anti-CCP was measured using Quanta-Lite (Inova). Genomic PCR typing was performed on whole blood DNA. Shared Epitope (SE; QKRAA) included alleles HLA DR*0101, *0102, *0105, *0401, *0404, *0405, *0408, *1001. The RA Protective DERAA epitope included alleles HLA DR*0103, *0402, *1102, *1103, *1301, *1302. Alleles other than SE and DERAA were labelled X. Odds Ratio were calculated relative to patients bearing two X alleles (X/X genotypes). Severity at 30 months was defined by significant joint destruction (Sharp/van der Heijde score > 15) and/or functional limitations (M-HAQ > 1).

Results: The DERAA epitope was present in 61 (28.6%) patients, including DERAA/SE in 20 and DERAA/DERAA in 6. The SE epitope was present in 108 (50.7%), including SE/SE in 26 (12.2%). Anti-CCP was positive at inclusion in 75 (35.2%). Severe disease was present in 76 (35.7%) at 30 months, due to significant radiological damage in 71.

Anti-CCP were present in 13/54 (24%; OR 1) X/X patients, in 0/6 (0%; OR 0.53) DERAA/DERAA patients, in 8/20 (25%; OR 2.10) SE/DERAA patients, in 17/61 (27.8%; OR 1.22) patients bearing at least one DERAA allele, in 53/108 (49%; OR 2.28*) of the patients bearing at least one SE allele, and in 19/26 (73%; OR 8.6**) SE/SE patients.

Severe disease was observed in 28/54 (51.8%; OR 1) X/X patients, in 12/61 (19.7%; OR 0.22**) patients bearing at least one DERAA allele, in 1/6 (16.7%; OR 0.18) DERAA/DERAA patients, in 5/20 (25%; OR 0.30*) DERAA/SE patients, in 41/108 (38%; OR 0.61) patients bearing at least one SE allele, and in 10/26 (38.5%; OR 0.60) SE/SE patients.

* $p<0.05$; ** $p<0.005$

Conclusions: Anti-CCP antibodies are frequently found in patients bearing no SE alleles, including patients bearing a single DERAA allele. In our cohort of patients treated according to current recommendations, severe outcome at 30 months was negatively associated with the presence of a DERAA sequence, even in the presence of a SE allele and/or anti-CCP. This suggests a prognostic contribution of alleles bearing the DERAA epitope (but not the SE epitope) that is independent of the presence of anti-CCP in EPA patients.

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CONJOINT RHEUMATOLOGY-OPHTHALMOLOGY INFLAMMATORY EYE DISEASE CLINIC: FIRST TWO YEARS EXPERIENCE Avril Fitzgerald, Sharon LeClercq, Pat Boulton, Amin Kherani (University of Calgary, Calgary Health Region)

Objectives: To examine the patient demographics, diagnoses and therapies in the initial two years of a conjoint Rheumatology-Ophthalmology Inflammatory Eye Disease Clinic (IEDC) in Calgary.

Methods: Inflammatory Eye Diseases arise out of autoimmune or infectius causes. Some are associated with rheumatologic or other systemic diseases. Their management is long-term and complex, associated with corticosteroid-use and disease-related complications. In September 2004 a monthly tertiary referral conjoint Rheumatology-Ophthalmology IEDC began. The purpose was to improve medical and ophthalmologic assessment and management of patients with a variety of inflammatory eye conditions, and inter-disciplinary educaton for the participating specialists, ophthalmology, rheumatology and internal medicine trainees. Newly referred patients receive an initial rheumatolgic screening examination for systemic and autoimmune disease prior to conjoint review of the patients' medical and ophthalmologic findings. Differential diagnoses, investigations and consideration of potential steroid-sparing or disease remittive therapies are discussed. Systemic therapies are introduced and monitored by the rheumatologist. Response to therapy is assessed conjointly in subsequent clinics, allowing immediate feed-back and adjustments of therapy. Information regarding demographics, rheumatologic/medical and ophthalmologic diagnoses, complications, therapies and responses of patients seen in the IEDC in Calgary in the first two years of function, was analyzed.

Results: 103 patients were reviewed in IEDC between September 2004 and October 2006 (32 clinics) held by two rheumatologists and two retinal surgeons specializing in uveitis care. Most patients were Caucasian (83%), with female to male ratio of 3 to 2, and mean age 41.0 years (range 14-78 years). Reason for referral was Diagnostic Assessment and Therapy (57%), Diagnostic Assessment alone (23%) and Therapy alone (20%). Diagnostic categories included Anterior Uveitis (40%), Pars Planitis /Intermediate Uveitis (18%), Choroiditis/Retinitis (17%), Panuveitis (8%), Retinal Vasculitis (6%), Scleritis (3%) and Other (8%). Steroid-sparing or disease-remittive therapy was introduced in 36.8% of patients. Therapy used varied according to diagnostic category and included methotrexate (30%), sulfasalazine (4%), combination azathioprine and cyclosporine (4%), cyclosporine (2%), infliximab (2%), azathioprine (1%) and cyclophosphamide (1%). Further analysis of patients with HLA B27 anterior uveitis regarding associated medical conditions, including seronegative spondyloarthropathy will be analyzed. Complications of IED patients and outcomes will also be presented.

Conclusions: Care of patients with inflammatory eye diseases in a conjoint ophthalmology-rheumatology clinics provides improved medical assessment, increased use of steroid-sparing and disease-remitting therapies and immediate real-time assessment of eye-status and complications. Conjoint clincs should become a medical-education model for teaching centers.

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CLINICAL RESPONSE TO A SECOND OR THIRD ANTI-TNF AGENT AFTER DISCONTINUATION OF THE FIRST. IMPLICATIONS FOR THERAPEUTIC DECISION-MAKING Boulos Haraoui, Louise Cameron, Diane Sauvageau, Michele Ouellet, Denis Choquette, Jean-Pierre Raynauld (Institut de rhumatologie de Montreal, Montreal, Canada)

Objectives: To evaluate the clinical response to a second and eventually a third anti-TNF agent and reasons for discontinuation in patients with rheumatoid arthritis (RA).

Methods: One hundred RA patients treated for the first time in 2001/2002, with either etanercept (ETN, n=50) or infliximab (IFX, n=50) were included. To qualify for this analysis, patients had to have received ETN or IFX for a minimum of 3 months unless discontinued for an adverse event (AE). Patients were followed prospectively up to November 2005.

Results: Both groups (ETN and IFX) were comparable for age (55y), sex (F=74%), weight (72Kg), the presence of rheumatoid factor (81% RF+) and disease activity, including fatigue scores (4.6 /10 VAS). They differed in their disease duration (ETN: 12.7 and IFX 16.8 years p=0.03) and IFX patients had higher, though not statistically different HAQ scores (1.38 vs. 1.17). 50% of the IFX patients required a dose increase (mean 4.5mg/kg).

A total of 35 patients discontinued therapy for lack /loss of efficacy (LOE n= 18), adverse events (AE n=14) or other (n=3). The mean time to discontinuation was comparable (ETN=0.8 vs. IFX=1.2 years ns). Twenty-one patients switched to a second anti-TNF (15 from the LOE group, 6 from the AE group). Nine patients (60%) from the LOE group discontinued the 2nd anti-TNF for inadequate clinical response and 3 patients (50%) from the AE group discontinued the 2nd anti-TNF because of AEs. Only 9/21 (43%) of the total

switch population were able to continue the 2nd anti-TNF. Eleven patients received a 3rd anti-TNF and only 4 (37%) are still continuing after a mean of 8 months.

Conclusions: The maintenance rate and the clinical response to a 2nd or a 3rd anti-TNF drug are lower than for the 1st one. Patients seem also to follow the same pattern for the reasons of discontinuation; the majority of patients stopping the first anti-TNF for LOE had an inadequate clinical response to the 2nd TNF inhibitor. This observation, coupled to other reports raises the issue of the appropriateness of switching to another anti-TNF agent versus starting another class of biologics. Further randomised and ideally head-to-head trials are needed to answer this important question.

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PREVENTION OF JOINT STRUCTURAL DAMAGE AT 1 YEAR WITH RITUXIMAB IN RHEUMATOID ARTHRITIS PATIENTS WITH AN INADEQUATE RESPONSE TO ONE OR MORE TNF INHIBITORS (REFLEX STUDY) Keystone, E., Pope, J.E., Emery, P., Peterfy, C.G., Tak, P.P., Cohen, S., Genovese, M., Williams, S., Totoritis, M., Cravets, M., Shaw, T. (Rheumatology Department, University of Toronto, Toronto, Ontario, Canada, St. Joseph Health Centre, The University of Western Ontario, London, Ontario, Canada, Rheumatology Department, Leeds General Infirmary, Leeds, United Kingdom, Synarc Inc., San Francisco, California, United States, Academic Medical Center/University of Amsterdam, Amsterdam, The Netherlands, Radiant Research, Dallas, Texas, United States , Department of Immunology and Rheumatology, Stanford University School of Medicine, California, United States, Medical Sciences, Roche Products Ltd, Welwyn Garden City, United Kingdom, Biogen Idec, San Diego, CA, United States)

Objectives: To investigate the effect at 1 year of rituximab (RTX) plus methotrexate (MTX) on joint structural damage, compared with MTX alone, in RA patients (pts) with rheumatoid arthritis (RA) and an inadequate response to one or more TNF inhibitors.

Methods: Pts receiving MTX and with an inadequate response to prior TNF inhibitors were randomized to RTX (course of two infusions of 1000 mg, 2 weeks apart) or placebo, as previously described (1). From Week 24, eligible pts were also permitted to receive a repeat course of RTX. Radiographs were obtained at baseline and at Weeks 24 and 56. Pts who withdrew for any reason were included within their randomized treatment arm, irrespective of any subsequent RA therapy. Radiographs were assessed using the Genant-modified Sharp method (2), and were read blinded to sequence and treatment by an independent central reading site. Preliminary analysis at Week 56 using linear extrapolation for missing data is presented.

Results: At Week 56, data were available for 184 pts in the placebo arm and 272 pts in the RTX arm. Baseline characteristics show the recruited population had long-standing active disease that had been previously treated with multiple DMARDs as well as one or more TNF inhibitors. At Week 56, the mean change in the total Genant-modified Sharp score in the placebo arm was 2.31 vs 1.00 in the RTX group (p=0.0046). Significant differences were also observed in changes of erosion score and joint space narrowing (JSN) score. Mean change in erosion scores were 0.59 and 1.32 for pts in the RTX and placebo arms, respectively (p=0.0114), while mean changes in JSN scores were 0.41 and 0.99, respectively (p=0.0006). In addition, the proportion of pts with no change in erosion score was significantly higher in the RTX arm vs placebo: 61% vs 52%, respectively (p=0.0445). These findings were also supported by additional sensitivity analyses.

Conclusions: These preliminary findings suggest that treatment with RTX was associated with significant inhibition of joint structural damage and that this is possible in a previously unstudied population of pts with long-standing RA and an inadequate response to 1 or more TNF inhibitors. References: 1. Cohen, et al. ACR 2005 (Abstract 1830).2. Genant et al, Am J Med 1983;75(6A):35-47.

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LACK OF CORRELATION OF THE CHANGE IN HEALTH ASSESSMENT QUESTIONNAIRE DISABILITY INDEX WITH CHANGE IN LUNG PARAMETERS IN PATIENTS WITH SYSTEMIC SCLEROSIS ASSOCIATED PULMONARY ARTERIAL HYPERTENSION Chow, S., Pope, J.E., Mehta, S. (Schulich School of Medicine, University of Western Ontario, London, Ontario)

Objectives: Pulmonary arterial hypertension (PAH) profoundly affects the function of patients with systemic sclerosis (SSc). We determined whether the Health Assessment Questionnaire Disability Index (HAQ DI), a self-assessment measure of health status, correlates with a patient PAH status in a population of SSc patients with PAH diagnosed by Dr. Sanjay Mehta, Respirologist. PAH status was measured by their degree of dyspnea (Borg Dyspnea Index), NYHA functional class, 6minute walk time, and pulmonary function tests.

Methods: Forty-one SSc patients with diffuse or limited cutaneous disease, dyspnea, and PAH determined by echocardiogram or pulmonary arterial catheterization were considered. All patients filled in a HAQ DI, and underwent evaluation with complete pulmonary function testing (PFT), 6-minute walk distance (6MWD), Borg dyspnea index, NYHA functional class, and expert PAH physician global assessment approximately every 6 months. Change in HAQ DI was studied with change in PAH measurements in routine specialty care.

Results: The HAQ DI scores had no significant correlation with PAH, including NYHA, Borg dyspnea index, 6MWD, DLCO and expert PAH physician global assessment. The change in HAQ DI scores weakly correlated with change in NYHA ($r = 0.38$, $P = 0.39$), Borg dyspnea ($r = 0.60$, $P = 0.37$), expert PAH physician global assessment ($r = 0.06$, $P = 0.84$), and inversely correlated with change in 6MWD ($r = -0.04$, $P = 0.86$). Scores from the HAQ did not correlate with DLCO or FVC.

Conclusions: The HAQ DI has been used to measure disease status changes in patients with SSc. In our study we found that HAQ DI is not an adequate measure of PAH status in SSc patients with PAH. Our study is different from the Scleroderma Lung Study which looked at the HAQ DI in SSc patients with interstitial lung disease and disease modifying drugs. Although PAH causes severe disability and death, changes in PH severity were not reflected in the overall functional status changes seen in the HAQ DI. Strengths of our study include the variability in our data, thus a correlation should have been found if one existed. The limitations of our study were that the data was from one clinic, clinical data was used, and there was missing data.

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VARIATIONS IN OSTEOCLASTOGENETIC POTENTIAL IN HEALTHY INDIVIDUALS: A PREDICTOR OF MORE AGGRESSIVE DISEASES IMPLICATING OSTEOCLASTS? Marianne Durand, Artur J. de Brum-Fernandes (Faculte de medecine, Universite de Sherbrooke)

Objectives: Osteoclastogenesis is an important phenomenon implicated in physiologic and pathologic bone remodelling; it may be regulated by endogenous and exogenous factors, like cytokines and sex hormones, as well as by age, gender, weight, height, body mass index, smoking, alcohol consumption and physical activity. It is also possible that differences in osteoclastogenetic capacity may be in part due to individual differences in the availability of osteoclast precursors. The aim of this study was to investigate the possible relationships between demographic characteristics and the number of osteoclast precursors and the osteoclastogenetic capacity in a cohort of healthy men and women.

Methods: We recruited 24 men and 27 women. Human osteoclasts were induced to differentiate from human peripheral blood mononuclear cells (PBMCs) in the presence of RANKL and M-CSF. CD14+ monocytes were considered as osteoclasts precursors and counted by flow cytometry. The number of osteoclasts formed in vitro was evaluated after 21 days of incubation. Data were analysed using nonparametric statistics.

Results: The number of osteoclasts varied from 9 to 993 (mean 361 +/- 269 osteoclast/well) with a bimodal distribution of high and low differentiators. There were no differences in the number of osteoclasts between women and men (320 +/- 258 vs 420 +/- 273, respectively, p=0.128). Statistical analysis showed that number of osteoclasts/well increased with number of CD14+ monocytes (p=0.001), weight (p=0.008) and height (p=0.016), but there were no other significant associations with the other demographic parameters stud-

ied (age, gender, body mass index, smoking, alcohol consumption and physical activity). The number of CD14+ cells increased with age (p=0.002).
Conclusions: Our results show a wide variation in the osteoclastogenetic capacity of a healthy population, with two populations of high and low differentiators being definable around the average or the median. This osteoclastogenetic capacity was partly associated with the number of osteoclast precursors and was higher in heavier and taller individuals. Our results suggest that the osteoclastogenetic capacity may be an individual characteristic and raises the hypothesis that individuals with higher osteoclastogenetic potential could be more susceptible to diseases such as osteoporosis, rheumatoid arthritis and periodontitis, where osteoclasts are central to the pathophysiology. We are presently studying this hypothesis in a multidisciplinary team funded by the Canadian Arthritis Network.

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THE IMPACT OF POST-SECONDARY EDUCATION ON LATE REFERRAL OF EARLY INFLAMMATORY ARTHRITIS PATIENTS Orit Schieir, Murray Baron, Russell Steele, Laeora Berkson, Mary Ann Fitzcharles, Michel Gagne, Bruce Garfield, Marie Hudson, Harb Kang, Morton Kapusta, Jiri Krasny, Henri Menard, Michael Stein, Craig Watts (McGill University)
Objectives: Early aggressive therapies for Early Inflammatory Arthritis (EIA) have been associated with better health outcomes. Rheumatologists have been shown to be more appropriate than primary care physicians in the early use of disease modifying drugs (DMARDS) for EIA. Moreover, patients who use a rheumatologist as their primary arthritis care provider report greater function, less pain, more favorable patient global assessment of disease, and slower disease progression than those seen by a non-rheumatologist. This study investigates factors related to the timing of referral to a rheumatologist of patients with EIA.
Methods: Demographic information including age, sex, post-secondary education, work status, yearly income, and the number of swollen joints was compared in patients with EIA (at least 1 swollen joint for more than 6 weeks, and less than 1 year, with no specific diagnosis other than rheumatoid arthritis (RA)) referred by their rheumatologist to the McGill Early Arthritis Registry. Patients were grouped into those seen early (within 3 months of symptom onset) or late (after 3 months) by a rheumatologist.
Results: 149 patients were assessed. 74.1% of patients with post-secondary education were seen late by a rheumatologist vs 56.9% of patients without post-secondary education (Chi Square= 4.50, p<0. 03). In a logistic regression model controlling for age, sex, work status, yearly income, and severity of disease, we found the relative risk of patients with post-secondary education having their first rheumatologist visit later than 3 months was 1.36 times that of patients without post-secondary education (95% CI: 1.06 - 1.64, p<0.02). None of the potential confounding variables had a statistically significant relationship with the timing of the first rheumatology visit.
Conclusions: Post-secondary education is the only demographic variable investigated that was associated with late referral to a rheumatologist. Patients with postsecondary education were almost 1.4 times more likely to be seen later by a rheumatologist than those without postsecondary education. Investigations are under way to determine why this might be the case.

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PATTERNS OF LOW BACK PAIN OVER A TWO YEAR PERIOD Maggie Chen, Pierre Cote, Sheila Hogg-Johnson, Claire Bombardier (University Health Network, Toronto, ON, Institute for Work and Health, Toronto, ON)
Objectives: To model the disease patterns of low back pain (LBP) using a large US claim database - Protocare.
Methods: A cohort of first time LBP claimants were identified using a database of large US insurers (Protocare-1997-2001). LBP subjects were included if >18 years with 1 year data pre LBP and 2 years post and no major pre-existing conditions. Two approaches were used: 1) Clinicians identified distinct patterns of care in the database according to their clinical judgment. 2) Statistical cluster analysis independently identified patterns of care. These two results were compared.
Results: There were 23,143 LBP patients identified with mean age is 55 (+/-7.2) and 54% female. The approach based on clinical judgment identified 7 patterns of episodes: single short (n=14,384); single long (n=1,322); persistent short (n=645); one recurrence (n=3,633); multiple recurrence without persistence (n=1,464), multiple recurrence with persistence (n=985) and persistent long (n=710). Cluster analysis also yielded 7 pathways with similar increasing duration and recurrence of episodes. Weighted Kappa showed a substantial correlation between the two results (r=0.71) with the cluster analysis confirming the clinical pattern recognition. $\chi 2$ test indicated strong association between the presence of co-morbidity and the course of LBP (P<0.01). Both mental disorder and circulatory system disease prevalence rate increased with the patterns of LBP showing more recurrences and increased duration.
Conclusions: Most patients with LBP had one short episode of care. However, a significant proportion of patients (16%-22%) experienced a recurrence. Only a small proportion of patients (1%-3%) developed chronic LBP. The chronicity of LBP was highly associated with comorbidity including mental disorder and circulatory system disease. Traditionally episodes of LBP have been described as: acute, subacute and chronic based on studies with small sample size and short term follow-up. Using a very large database that included 23 thousand LBP patients followed over 2 years we identified 7 patterns of LBP. Our findings used a novel statistical method to describe the course of a disease over time that has potential application for other rheumatic diseases.

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PATIENT DERIVED OUTCOMES ALONE ARE NOT SUFFICIENT FOR ASSESSMENT OF DISEASE ACTIVITY: THE NEED FOR PHYSICAL EXAMINATION Timea Donka, Shahin Jamal, Christopher Kitamura, Courtney Keystone, Vivian Bykerk, Edward Keystone (Mont Sinai Hospital, Toronto, Canada)
Objectives: Despite the proven utility of composite measures of disease activity, there has been a trend in practice away from physician derived outcomes such as the joint count. The present study was undertaken to determine the reliability of the patient global assessment of disease activity (PGA) with respect to the swollen joint count.
Methods: Two groups of patients were analyzed in a prospective chart audit: 1, established RA (EstRA) (disease duration > 5 years) and 2, early RA (ERA) (symptoms for > 6 weeks and <12 months). In the EstRA group, patients were asked, "How are you in relation to your RA today?" (HRU) and given five potential responses. Patients response to HRU was correlated with PGA. PGA was correlated with swollen (SJC)/tender joint count (TJC), health assessment questionnaire (HAQ-DI), patient assessment of pain, fatigue, ESR and CRP in both groups, using Pearson correlation coefficient. The responses to HRU and PGA of disease activity were compared with the proportion of patients with < 5 swollen joints (mild disease) or >5 swollen joints (moderate to severe disease).
Results: In the EstRA group, despite patients responses that they were "good" or "very good," a proportion of the patients (17%) had 5 or more SJC. In EstRA patients responding "poor" or "very poor," a high proportion (50%) had fewer than 5 SJC. Conversely, in the ERA group, a large proportion of patients (43%) who reported doing well had more than 5 SJC, while a smaller proportion (16%) who reported doing poorly had fewer than 5 SJC. The correlation between patients response to HRU and PGA was strong (r=0.73). Strong correlation was observed between PGA and patient assessment of pain (r(EstRA)=0.82, r(ERA)=0.88), fatigue (r(EstRA)=0.74, r(ERA)=0.62), and HAQ-DI (r(EstRA)=0.71, r(ERA)=0.66). There was only moderate correlation between PGA and TJC (r(EstRA)=0.52, r(ERA)=0.45) and SJC (r(EstRA=0.38, r(ERA)=0.43).
Conclusions: In RA, the patients perception of their disease activity is frequently not reflected by the physician joint evaluation. The result suggests that both patient and physician derived outcomes are needed for an accurate assessment of disease activity. If patient derived outcomes alone are considered, a substantial proportion of patients is likely to be under or overtreated.

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CASPAR CRITERIA ARE SENSITIVE IN EARLY PSORIATIC ARTHRI-

TIS (PSA) AND ARE ACCURATE WHEN APPLIED TO PATIENTS ATTENDING A FAMILY PRACTICE CLINIC Vinod Chandran, Catherine Schentag, Dafna Gladman (Toronto Western Hospital)

Objectives: To determine the sensitivity of the CASPAR criteria for classification of PsA in early PsA and to determine the sensitivity and specificity of the criteria when applied to patients attending a family practice clinic.

Methods: The CASPAR criteria [the presence of inflammatory articular disease and 3 or more points from the following: current psoriasis (score 2), personal history or family history of psoriasis (if current psoriasis is absent), current psoriatic nail dystrophy, negative RF, and current or history of dactylitis, juxta-articular new bone formation] were applied to the first visit of patients with early disease (disease duration <2.5 years) and to those with late disease (>2.5 years) enrolled in a longitudinal observational cohort of PsA between July 1990 and October 2004. Patients were evaluated according to a standard protocol in which all items included in the CASPAR criteria are recorded and tracked on a computer database. The proportion of patients fulfilling CASPAR criteria (sensitivity) was determined. The criteria were also applied to consecutive patients attending a family medicine clinic who agreed to participate in a study to assess the prevalence of PsA in family medicine clinic attendees. Sensitivity and specificity of the CASPAR criteria were determined.

Results: 107 patients (67 males, age 42 years, disease duration 1 year) with early disease and 181 patients (61 males, age 45 years, disease duration 11 years) with late disease were enrolled into the clinic during the time period. 106/107 (99.1%) of patients with early disease and 176/181 (97.2%) with late disease satisfied the criteria. In the family practice clinic 175 patients (63 M, mean age 41.2 years) were assessed. 37 (21%) had inflammatory arthritis [PsA 2, gout 3, AS 1, RA 1, lupus 1, undifferentiated spondyloarthritis 1, inflammatory arthritic symptoms 28]. Both patients with PsA satisfied CASPAR criteria (Sensitivity 100%). Of the 35 patients with inflammatory arthritis that were not PsA, 33 did not satisfy the criteria (Specificity 94.3%). When the criteria were applied to all 175 patients, both patients with PsA satisfied CASPAR criteria and of the 173 subjects who did not have PsA, 171 did not satisfy the criteria (Specificity 98.8%).

Conclusions: The CASPAR criteria can be used to classify patients with both early and late PsA, and in primary care setting. The criteria may therefore be used as diagnostic criteria, and as a tool in epidemiological studies on PsA.

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GENETIC ASSOCIATION BETWEEN LY9, A MEMBER OF THE SLAM FAMILY, AND SYSTEMIC LUPUS ERYTHEMATOSUS Joan Wither, Lauren Chad, Alexandre Montpetit, Sooyeol Lim, Tamara McKenzie, CaNIOS GenES Investigators, Glinda Cooper, Celia Greenwood, Paul Fortin, Tom Hudson (Toronto Western Research Institute, Toronto, ON, McGill University and Genome Quebec Innovation Centre, Montreal, PQ, Hospital for Sick Children, Toronto, ON, US Environmental Protection Agency, McGill University and Genome Quebec Innovation Centre and Research Institute of the McGill University Health Centre, Montreal, PQ)

Objectives: Recently, genetic variants within the SLAM family of molecules were proposed as candidate genes for Sle1, a major susceptibility locus for production of autoantibodies and renal disease in New Zealand mice. Additionally, engagement of Toll-like receptors (TLR), in particular TLR-7 and TLR-9, by apoptotic debris has been shown to lead to generation of IFN-alpha, an important pro-inflammatory mediator in SLE. We hypothesized that a genetic polymorphism in one or both of these pathways is associated with development of SLE.

Methods: Eight candidate genes were chosen for the study. Genes were either members of the SLAM family (CD84, CD48, SLAMF7, LY9, CD244), or in the TLR pathway (TLR-3, TLR-7, TLR-9, MYD88). For each gene, we selected a maximally informative set of common SNPs (tagSNPs) using the HAPMAP dataset, supplemented with non-synonymous coding SNPs. A total of 62 SNPs were genotyped in 181 trios, consisting of the proband, mother, and father. Probands were recruited from CaNIOS centres if they met 4 or more ACR criteria and had both parents alive. Demographic, clinical, cellular and serologic information was obtained for all study participants. Association was determined by a TdT test and linkage disequilibrium was evaluated by using the program Haploview.

Results: Two SNPs, both in the LY9 locus, rs1333065 and rs3817407, demonstrated an increased association with SLE at $p = 0.0064$ and $p = 0.0051$, respectively. The two LY9 SNPs are located 6408 bp upstream of LY9, and 22 bp downstream of exon 6, and are in linkage disequilibrium ($r2=0.6$). There were no other significant associations with any of the other loci tested (all $p > 0.01$).

Conclusions: The findings suggest that LY9, a member of the SLAM family, is associated with SLE. Replication of positive findings is required before making a firm conclusion.

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INCREASED FREQUENCY OF AUTOANTIBODIES IN THE FAMILY MEMBERS OF LUPUS PATIENTS AND ASSOCIATION WITH A REDUCED PROPORTION OF NKT CELLS Joan Wither, Yongchun Cai, Sooyeol Lim, Tamara McKenzie, Jiandong Su, Jaime Claudio, CaNIOS GenES Investigators, Glinda Cooper, Thomas Hudson, Celia Greenwood, Marvin Fritzler, Paul Fortin (Toronto Western Research Institute, Toronto, ON, Hospital for Sick Children, Toronto, ON, US Environmental Protection Agency, Washington, DC, McGill University and Genome Quebec Innovation Centre and Research Institute of the McGill University Health Centre, Montreal PQ, University of Calgary, Calgary AB)

Objectives: To test whether parents and siblings of SLE patients have an increased frequency of autoantibodies as compared to population controls and to determine whether autoantibody production is associated with an altered cellular phenotype.

Methods: Probands were recruited from CaNIOS centres if they met 4 or more ACR criteria and had both parents alive. 113 trios were examined; 52 of which also had siblings (n=58). Results were compared to 61 population controls. Demographic, clinical, serologic and cellular information was obtained for all study participants. Antinuclear antibodies (ANA) were measured at a 1:40 dilution of serum using the HEp-2 cell line. Serologic assays for specific auto-antibodies were performed using an addressable laser bead immunoassay (ALBIA: QUANTA PlexTM SLE Profile 8, INOVA, San Diego, CA). Cellular phenotyping of peripheral blood lymphoid subsets was performed by flow cytometry. Comparisons were performed by Fisher exact test and the Wilcoxon test.

Results: The mean age (+/- SD) of the SLE patients was 34.6 +/- 9.0; fathers 63.7 +/- 9 ; mothers 61.0 +/- 9 ; siblings 34.8 +/- 9 ; and controls 47.1 +/- 14.4. 89.4% of the SLE patients and 70.9% of the population controls were female. SLE patients and their family members had an increased frequency of a positive ANA vs. controls (patients 86.7%, mothers 34.5%, fathers 31.9%, siblings 27.6%, controls 4.9%, all $p < 0.001$). 66.4% of SLE patients, 19% of family members and 4.9% of controls had at least one of the specific autoantibodies tested (both $p<0.01$). Autoantibodies, as detected by ALBIA, found in family members included: Sm (7.75%), SSA (7.04%), Scl-70 (4.58%), SSB (2.11%), Chromatin (1.06%), RNP (1.06%), Ribosomal-P (0.70%) and Jo-1 (0.35%), and were seen more frequently than controls: Scl-70 (1.64%), SSA (3.28%), all others (0%). This achieved statistical significance for Sm ($p = 0.019$). To determine whether a positive ANA was associated with an altered cellular profile in family members, the proportion of activated B cells and T cells, and putative inhibitory T cell populations (CD8, Treg, NKT (CD3+Valpha24+Vbeta11+) was assessed. This revealed a significant association ($p < 0.001$) between a decreased proportion of NKT cells and a positive ANA.

Conclusions: Family members of lupus patients have an increased frequency of autoantibodies. The presence of a positive ANA is associated with a reduced proportion of NKT cells, suggesting that this cell subset plays a role in the regulation of anti-nuclear autoantibody production.

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EARLY ARTHRITIS CLINICS: DO THEY IMPROVE ACCESS TO CARE? Shahin Jamal, Vivian P Bykerk, Xiuling Li, Shabbir MH Alibhai, Elizabeth Badley, Claire Bombardier (University of Toronto, Toronto, Ontario, Canada)

Objectives: To compare access to care for patients with rheumatoid arthritis (RA) in an early arthritis clinic (EAC) to those in general rheumatology clinics (GRC) by 1) comparing the percentage of new RA patients started on disease modifying anti-rheumatic drugs (DMARDs) within 3 months of symptom onset and 2) comparing main components of wait times.
Methods: A cohort of RA patients from 15 GRCs in the greater Toronto area, diagnosed between Jan 1, 2003 and May 31, 2006 (age > 18y, juvenile RA excluded), participated in a telephone survey to discuss demographic information, onset of symptoms, timing of visits, etc. A cohort of patients seen in Mount Sinai Hospital EAC between March 2004 and Sept 2006 (age >16, symptoms for > or = 6 weeks and < 12 months) had data collected prospectively as part of an ongoing cohort study. The percentage of patients treated with DMARDs within 3 months of symptom onset was determined for each cohort. Median times for components of delay were determined and compared.
Results: GRC Group: n=219, 78% female, 66% Caucasian, mean age 54.2 years, 25% with family history of RA, and 59% with some post-secondary education. EAC Group: n=92, 79% female, 79% Caucasian, mean age 46.0 years, 41.3% with family history of RA, and 66.3% with some post-secondary education. 17.8% of GRC group and 21.7% of EAC group received DMARDs within 3 months of symptom onset. Median time from symptoms to DMARD was 11.5 months (GRC) and 6.5 months (EAC), rheumatology referral to 1st rheumatology visit was 1 month (both GRC and EAC), and 1st rheumatology visit to DMARD was 1 month (GRC) and 0 months (EAC).
Conclusions: Fewer than 25% of RA patients diagnosed in the last three years were treated within 3 months of symptom onset, in both an early RA clinic and general rheumatology clinics. The median time to treatment was significantly less in those patients seen in an EAC. Analysis of components of wait times reveals similar time from receipt of referral to 1st rheumatology visit and 1st rheumatology visit to DMARD in both groups, with the major delay occurring in the period before the rheumatology referral. Our results suggest that although early arthritis clinics have some utility in improving access to care for RA patients, other significant barriers need to be identified and overcome to ensure timely DMARD initiation.

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LONG-TERM EFFECTS OF BOSENTAN IN PULMONARY ARTERIAL HYPERTENSION RELATED TO CONNECTIVE TISSUE DISEASE (PAH-CTD): THE TRUST STUDY RESULTS Denton, C.P., Gabrielli, A., Peter, H., Morganti, A., Pope, J.E., Guillevin, L. (Royal Free Hospital, London, United Kingdom, Azienda Ospedaliera Umberto I, Ancona, Italy, Med. Universitaetsklinik, Freiburg, Germany, Actelion Pharmaceuticals Ltd, Allschwil, Switzerland, St. Joseph's Healthcare, London, ON, Canada, Hopital Cochin, Paris, France)
Objectives: Bosentan has been shown to improve PAH-CTD including WHO Functional Class, improved walk time and less clinical worsening. The present study was designed to evaluate the long-term effects of Bosentan on the survival and quality of life (QOL) in right heart cath proven Class III PAH-CTD.
Methods: 53 patients with PAH-CTD received Bosentan for a planned duration of 48 weeks. Study assessments at Week 48 included vital status, WHO functional class, quality of life (Short-Form Health Survey [SF-36], Health Transition Score and Health Assessment Questionnaire [HAQ]). The Kaplan-Meier (KM) estimates for time to clinical worsening (death or hospitalization due to PAH, need for prostanoids, lung transplantation), and to death were calculated up to week 48.
Results: At baseline, the patients (83% women) had a mean age of 63 +/- 13 years (+/- SD). Patients had limited (lSSc, 55%) or diffuse (dSSc, 25%) systemic sclerosis, overlap CTD (11%) or systemic lupus erythematosus (SLE, 9%). At Week 48, WHO class improved in 27% of patients (95% confidence interval (CI): 16%-42%) and was unchanged in 57% (95% CI: 42%-71%). The overall KM estimate for absence of clinical worsening was 68% (95% CI: 55%-82%), (100% for SLE, 75% for dSSc, 67% for overlap CTD, and 61% for lSSc). The SF-36 health transition score improved in each etiology subgroup, with overall improvement of -0.80 +/- 0.22 (p = 0.001). Improvement was reported in 57% of patients (95% CI: 41%-71%) and no change in 26% (95% CI: 14%-41%). The HAQ worsening slightly and SF36 was the same to slightly worse likely reflecting overall disease and long duration. The survival at week 48 was 92% (95% CI: 85%-100%). Four patients died (2 with lSSc, 1 with dSSc, and 1 with overlap CTD).
Conclusions: Survival rate was 92%. Hence, this prospective study in patients with various types of PAH-CTD confirms clinical benefits of Bosentan treatment (previously observed in subpopulations of two short-term placebo controlled trials) and provides additional evidence of long-term survival.

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GETTING A LARGE MULTICENTRE COHORT STUDY IN JUVENILE IDIOPATHIC ARTHRITIS UNDERWAY IN CANADA - IT'S ABOUT TIME! Ciar M Duffy, Lori B Tucker, Kiem G Oen, Michele Gibbon, Rae SM Yeung, The REACCH OUT Study Group (Montreal Children's Hospital/McGill University Health Centre, Montreal, Quebec, BC Children's Hospital/University of British Columbia, Vancouver,BC, Health Sciences Centre/Arthritis Centre, Winnipeg, Manitoba, The Hospital for Sick Children/University of Toronto, Toronto, Ontario, Canada)
Objectives: Increasingly, funding agencies are demanding that researchers group together to enhance research productivity and efficiency and to avoid unnecessary duplication. Unfortunately, the practical and organizational issues associated with this approach are often underestimated, resulting in studies that lack appropriate infrastructure and funding support. Here, we report the time required to initiate a large multi-centre study in children with juvenile idiopathic arthritis (JIA) in Canada.
Methods: All 14 university-based pediatric rheumatology centres, representing a total of 41 investigators participated in an inception cohort study of new onset JIA that focuses on rates of remission and quality of life outcomes [REsearch on Arthritis in Canadian Children, Emphasizing Outcomes (REACCH OUT)]. Following a successfully funded grant submission, successful entry of each site into study entailed a comprehensive process to obtain Research Ethics Board (REB) approval and signing of a subcontract. The total number of patients projected to be enrolled was 2,000 over 5 yrs.
Results: Following a 30 day (d) organizational period, the process of study initiation commenced at 4 centres to pilot test study methods. Study initiation commenced at a further 8 centres 219 d later, and at the 2 remaining centres after a total 529 d. Following initiation at each site, it required a mean of 175 (63 - 421) d for REB approval, and 253 (139 - 407) d to finalize subcontracts for all centres. It took a mean of 240 (131 - 357) d from initiation to first patient enrollment at each site for the 9 centres that have enrolled patients. At these 9 sites, the rate of monthly enrollment is 101% of that predicted (range 60-140%). An additional 3 centres are ready to enrol patients; however, 2 centres with staff shortages withdrew prior to REB approval. A total of 430 patients have been enrolled in the 21 months since first patient enrollment. With the current rate of enrollment and with 12 centres actively enrolling patients, we predict an enrollment rate of 420/yr for the remaining 3 years, for a total cohort of 1,700 patients.
Conclusions: Getting this large multi-centre cohort study in JIA operational has been time-consuming due to the complex processes of consent and subcontract negotiation. Once patient enrollment had commenced, an excellent rate has been maintained. Investigators need to emphasize these issues in grant proposals. Also, investigators and government funding agencies need to impress upon academic institutions the need to streamline REB and subcontract procedures to expedite this whole process.

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THE CANADIAN RHEUMATOLOGY ASSOCIATION (CRA)/SPONDYLOARTHRITIS RESEARCH CONSORTIUM OF CANADA (SPARCC) TREATMENT RECOMMENDATIONS FOR SPONDYLOARTHRITIS (SPA): A NATIONAL MULTIDISCIPLINARY STAKEHOLDER PROJECT Walter P. Maksymowych, Dafna Gladman, Proton Rahman, Annelies Boonen, Vivian Bykerk, Denis Choquette, Sheri Dimond, Paul Fortin, Jacob Karsh, Alice Klinkhoff, Dianne Mosher, Ken Mulholland, Wojciech Olszynski, Anthony S Russell, Laura Shanner (University of Alberta, University of Toronto, Memorial University Newfoundland, University of Maastricht,

University of Montreal, Canadian Spondylitis Association , University of Ottawa, University of British Columbia, Dalhousie University, Canadian Spondylitis Association, University of Saskatchewan)

Objectives: 1. To develop evidence-based, comprehensive treatment recommendations for SpA that also incorporate the perspective of multiple stakeholders across Canada, including patients and patient-consumer organizations, pharmaco-economists, and experts in medical ethics. 2. To generate a procedural template for the multidisciplinary development of treatment recommendations in arthritis.

Methods: The process was directed by a steering committee comprised of a convenor, the SPARCC Executive, representatives from the CRA, rheumatologists from academic and community-based practice with special expertise in SpA, a clinical epidemiologist, a pharmaco-economist with special expertise in SpA, patient consumer representatives from the Canadian Spondylitis Association (CSA), and an ethics consultant from the John Dossetor Health Ethics Centre. The process followed the guidelines established by EULAR and stipulated in the AGREE instrument. A working document with a preliminary list of treatment recommendations was first drafted after 3 rounds of consultation that included the treatment propositions of the Assessments in AS Working Group, additional propositions derived from systematic reviews, and the 12 national arthritis care standards developed by the Alliance for the Canadian Arthritis Program (ACAP). A web-based survey was conducted amongst the membership of the CSA and the Spondylitis Association of America to address the relevance to patients of two primary outcome instruments currently recommended by ASAS to assess the effectiveness of treatment (BASDAI, BASFI). A list of questions was formulated by the steering committee for discussion and drafting of propositions by the ethics consultant. A final list of treatment propositions was generated after 3 rounds of voting in a Delphi consensus exercise. The committee then voted on the strength of recommendation (SOR) for each proposition (0-10 NRS).

Results: Consensus was generated on a final list of 38 treatment recommendations categorized under the subject headings of general management principles, ethical considerations, target groups for treatment recommendations, definition of target disease, disease monitoring, and specific management recommendations (nonpharmacologic, NSAIDs, analgesics, corticosteroids, DMARDs, anti-TNFalpha agents, surgery) which will be presented for the first time at the CRA meeting. The SOR for individual propositions ranged from 8.1 to 9.9. A total of 855 SpA patients completed the web survey, of whom 85.3% and 79.3% considered the BASDAI and BASFI as reflecting most of the essential symptoms and disabilities, respectively.

Conclusions: Using broad stakeholder input, the recommendations provide guidelines for clinical practice in Canada and constitute a broad basis to ensure access to appropriate treatment for SpA.

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ASSESSMENT OF THE EFFECTIVENESS OF LASER SPECKLE IMAGING IN DETERMINING SYNOVIAL PERFUSION IN JOINTS COMMONLY AFFECTED BY RHEUMATOID ARTHRITIS. Jordan Raugust, Kevin Forrester, Liam Martin (Department of Medicine, University of Calgary, Faculty of Medicine, University of Calgary)

Objectives: To assess the effectiveness of Laser Speckle Imaging (LSI) as an efficient, non-invasive, quantitative tool for measuring joint perfusion, with the goal of future application to early diagnosis and accurate monitoring of inflammation in rheumatoid arthritis.

Methods: In this study, male and female subjects aged 18-60, with no history of significant injury, surgery or disease influencing blood flow to the hands were recruited to be imaged utilizing LSI. Prior to imaging, environmental factors were held constant to limit unwanted external influences on blood flow to the hands. The dominant hand of each subject was imaged utilizing a penetrating infrared laser, high-resolution camera and image processing software. Twenty images were captured over twenty seconds, during which time the subject was asked to remain still. The resultant image provided a spatial perfusion map of the hand, derived from underlying erythrocyte velocity and concentration. Data analysis compared mean perfusion within a rectangular region over the dorsum of proximal interphalangeal joints (PIP) 2, 3 and 4, to perfusion within an adjacent, non-synovial tissue (dorsum of phalanx proximal to the imaged joint). In order to account for inter-subject variability in cutaneous blood flow, these values were expressed as a ratio of synovial to non-synovial tissue perfusion.

Results: Six subjects (3 male, 3 female), aged 40-47 (mean = 45.5) met study criterion. Ratios of joint perfusion to tissue perfusion were similar for all subjects imaged, as they averaged 1.56 (SD = 0.16) for all subjects at all joints measured. Perfusion ratios for PIP2, PIP3 and PIP4 were 1.65 (SD = 0.17), 1.50 (SD = 0.20) and 1.54 (SD = 0.16), respectively.

Conclusions: Laser Speckle Imaging has shown early success in imaging joint perfusion in patients without rheumatoid arthritis. It provides a quantitative map of synovial blood flow, safely, quickly and non-invasively, and thus may serve as a useful tool for initial diagnosis and monitoring of disease progression in patients with rheumatoid arthritis.

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THE DECISION MAKING PROCESS INVOLVED IN FIBROMYALGIA PATIENTS DECIDING TO USE COMPLEMENTARY AND ALTERNATIVE MEDICINES Annette Vroegendewey, Maria Verhoef, Liam Martin (Department of Community Health Sciences, University of Calgary, Department of Community Helath Sciences, University of Calgary, Department of Medicine, University of Calgary)

Objectives: To build an explanatory decision-making model based on the process that women with Fibromyalgia Syndrome (FMS) follow when making the decision to use Complementary and Alternative Medicine (CAM)

Methods: Grounded theory methodology was used for this study (Glaser & Strauss, 1967). Individual, in depth, semi structured interviews were conducted with 17 women diagnosed with FMS. Participants discussed their perceptions of CAM, how they approach CAM decision making and what their experiences are with CAM. The interview data was used to generate a substantive theory. The Fibromyalgia Impact Questionnaire was used to capture symptom burden which provided some of the context in which decision-making takes place (Burkhardt, Clark & Bennet, 1991).

Results: All the participants were Caucasian and they were generally well educated. Seven participants were between 21-54 years of age and the remainder of the participants were between 55-64 years of age. All the participants were diagnosed between 1990-1999. It became clear that CAM decision making is a process, occurring in phases. Participants went through 4 phases: 1) Establishing readiness, 2) Initiating FMS self management, 3) Getting organized, 4) Taking action. Motivators and barriers to CAM as well as strategies to overcome these barriers became evident. The main theme was "Improving functional self", meaning that improving day to day functioning was the driving force behind the participants decision-making.

Conclusions: Understanding these phases will assist health care providers in giving tailored care specific to the syndrome stages. By using the Andersen socio-behavioral framework, particularly the individual determinants of health service utilization, the process of CAM utilization can be accurately captured (Andersen & Newman,1973).

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POST OPERATIVE COMPLICATIONS IN RHEUMATOID ARTHRITIS PATIENTS UNDERGOING ORTHOPAEDIC INTERVENTIONS Jennifer Matthews, Richard Hu, Liam Martin (Faculty of Medicine, Department of Surgery, University of Calgary, Department of Medicine, University of Calgary)

Objectives: 1. Determine if the complication rate following orthopaedic surgery RA patients being treated with infliximab or etanercept is different from RA patients not taking an anti-TNFalpha agent.

2. Use the result of this study as preliminary data for a larger, multicentre study to be conducted in the near future. The ultimate goal is to develop clinical practice guidelines for patients taking infliximab or entanercept and undergoing orthopaedic surgery.

Methods: Subjects eligible for this study were identified by filtering the CHR database of orthopaedic procedures from April 1, 2004 to March 31, 2005 for patients with a diagnosis of RA. One-hundred and fourty-two procedures pre-

formed on 126 patients with RA were identified. Orthopaedic procedures are classified as otal hip (n = 32), otal knee (n = 20) or ther (n = 90).
Results: Of 126 patients, 30 (23.8%) were taking anti-TNFalpha agents (1 Humera, 8 Remicade, 21 Enbrel). Thirty-one complications occurred in 142 orthopaedic procedures, 14 (45.2%) of these occurred in patients taking anti-TNFalpha agents. Complications were classified as infection of a joint or wound (18/31, 58.1%), other infections (e.g. pneumonia) (8/31, 25.8%), or other types of complications (e.g. DVT) (5/31, 16.1%).
Overall, 43.3% patients taking anti-TNFalpha agents had complications compared to 15.2% of not taking an anti-TNFalpha agent.
Conclusions: Patient taking anti-TNFalpha agents had a higher rate of postoperative complications following orthopaedic surgery compared to people not taking such drugs. Nearly half the patients taking anti-TNFalpha agents in this study had a complication even though the drugs were discontinued for two weeks before and after their surgery. A larger multi-centre study should be conducted to substantiate these findings and develop universal guidances to help reduce the morbidity associated with these drugs and orthopaedic procedures.

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CLINICAL OUTCOME IN EARLY UNDIFFERENTIATED ARTHRITIS IS PREDICTED BY ANTIBODIES TO CYCLICAL CITRULLINATED PEPTIDES Adarshdip Brar, Christine Peschken, David Robinson, Hani El-Gabalawy, Carol Hitchon (University of Manitoba)
Objectives: A significant proportion of patients with recent onset inflammatory arthritis do not meet ACR criteria for rheumatoid arthritis (RA) at their initial clinic visit. This undifferentiated arthritis (UA) may evolve into RA or another arthropathy, may have persistent synovitis but remain UA, or may remit. We sought to identify the clinical outcome of patients with early undifferentiated arthritis (UA) after at least one year of follow up and any predictors of this outcome.
Methods: Subjects with early inflammatory arthritis of less than 1 year duration were followed for at least one year. Clinical diagnosis was assigned at baseline and at one year using ACR criteria. Anti-cyclical citrullinated peptide antibodies were measured by ELISA. Physicians were blinded to CCP status. All subjects were treated by their primary rheumatologist with an aim to disease remission. Disease remission at last visit was defined as a DAS(CRP)3 <2.6.
Results: At presentation 79 (45%) of patients met ACR criteria for RA, 31(18%) met criteria for another inflammatory arthropathy, and 66 (37%) had undifferentiated arthritis (UA). UA patients had a longer delay to presentation than RA patients (44 weeks vs 28 weeks p=0.02). One year clinical outcome was available on 34 UA patients who had the following diagnosis at 1 year: UA 20, RA 10, other arthropathy 4 (PsA 2, Spa 1, OA 1). Compared to UA that remained undifferentiated, UA that developed into RA tended to fulfill more RA criteria at baseline (3.4(0.5) vs 2.4(1.4) p=ns), were equally likely to be RF +ve (45% vs 60% p=ns) with similar RF titers and tended to be more CCP +ve (55% vs 10% p=0.06). Baseline CCP titers ((113(130) vs 6 (4) p<0.001) were higher in UA developing into RA. UA patients were less likely to receive DMARD or steroid treatment at the initial visit than RA patients. Remission at last visit (mean duration follow up 24 months) was seen in 59% UA pts vs 46% RA patients (p=ns).
Conclusions: A significant proportion of early inflammatory arthritis patients do not meet ACR criteria for RA at presentation but many will have persistent disease activity regardless of developing RA criteria and should be treated aggressively. The presence of CCP at disease onset, particularly in higher titer, may identify patients needing aggressive therapy.

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A PATIENT WITH SYSTEMIC SCLEROSIS AND SPINAL CALCIFICATIONS Sabrina Fallavollita, Marie Hudson, Murray Baron (McGill University)
Objectives: We present the case of a patient with Systemic Sclerosis (SSc) who presented with neck stiffness and was found to have extensive cervical spine calcifications.
Methods: This 52 year old woman with SSc, diagnosed in 1998, with pulmonary hypertension, pulmonary fibrosis, severe Raynaud and symmetrical polyarthritis presented in June 2001 with neck stiffness and pain radiating up over her face, increasing with neck extension. Examination revealed marked reduction in neck movements but no neurological deficits and a soft mass distal to the antecubital fossa.
Results: A cervical spine x-ray showed extensive calcifications between the dens and the anterior arch of C1 as well as calcifications in the left paracervical area. CT scan of the neck showed calcification of the transverse ligament and soft tissue calcification at the atlanto-axial junction, in the prevertebral, intraspinal, epidural and peri-apophyseal areas. There was no evidence of spinal canal compromise or cord compression.
Conclusions: Her neck stiffness was managed expectantly with analgesia as she had no neurologic symptoms. She has remained stable in the intervening years with no neurologic deficits.Paraspinal and intraspinal calcifications are rare but have been described in patients with scleroderma. Such calcification of the spine will be reviewed.

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BASELINE CLINICAL AND QUALITY OF LIFE CHARACTERISTICS OF CHILDREN WITH NEW ONSET JUVENILE IDIOPATHIC ARTHRITIS - THE REACCH OUT STUDY Ciar M Duffy, Rae SM Yeung, Lori B Tucker, Michele Gibbon, Xun Zhang, Sebastian Dube, Kiem G Oen, The REACCH OUT Study Group (Montreal Children's Hospital/McGill University Health Centre, Montreal, Quebec, The Hospital for Sick Children/University of Toronto, Toronto, Ontario, BC Children's Hospital/University of British Columbia, Vancouver, BC, Health Sciences Centre/Arthritis Centre, Winnipeg, Manitoba, Canada)
Objectives: No published studies describe the clinical, functional and quality of life characteristics early in the course of juvenile idiopathic arthritis (JIA). Here, we describe these characteristics at baseline for a multi-centre inception cohort of new onset JIA - REsearch on Arthritis in Canadian Children Emphasizing Outcomes (REACCH OUT).
Methods: All patients with new onset of JIA (< 1yr) who enroll in the REACCH OUT study undergo a history and physical examination and provide demographic (age, gender, onset type, disease duration) and clinical [active joint count (AJC), erythrocyte sedimentation rate (ESR)] data, together with specific measures (possible score ranges in parentheses) - global assessments (patient, physician) (0-10), function (CHAQ) (0-3), quality of life [CHQ physical, psychosocial and JIA subscales (0-100), JAQQ (1-7), Peds QL, core and arthritis (0-100), QoML overall and health (0-10)] and pain (PPQ) (0-10) at baseline and every 6-12 m for 5 yrs. A total of 430 patients, of 2,000 projected, have been enrolled at 9 of the 12 participating centres to date. The baseline characteristics for the 363 whose complete data were available are described.
Results: Of the 231 (63.6%) females and 132 (36.4%) males, 141 (38.8%) had oligoarthritis, 77 (21.2%) polyarthritis RF -ve, 15 (4.1%) polyarthritis RF +ve, 30 (8.3%) systemic arthritis, 30 (8.3%) psoriatic arthritis, 43 (11.9%) enthesitis-related arthritis and 27 (7.4%) undifferentiated arthritis, with mean (+ SD), age and disease duration, of 8.1 (4.7) yrs and 96.7 (110.0) days, respectively. The overall means (+ SD) for included measures were as follows: AJC - 5.6 (10.0), ESR - 29.3 (25.9), patient global - 2.4 (2.3), MD global - 3.1 (2.8), CHAQ - 0.52 (0.6), CHQ physical - 40.5 (14.6), CHQ psychosocial - 48.9 (10.2), CHQ JIA subscales - 82.6 (21.8), JAQQ - 2.7 (1.3), Peds QL core - 74.5 (18.8), Peds QL arthritis -74.1 (16.7), QoML overall - 8.0 (2.3), QoML health - 7.3 (2.5), and PPQ 2.1 (2.6). These scores varied within onset categories being worse for polyarthritis and systemic arthritis.
Conclusions: Analysis of these data reveals a predictable distribution of onset type, gender and age with broad variability on all measures indicative of the heterogeneity of the cohort. Mean scores were in the mild to moderate range, except for systemic and polyarthritis whose scores trended worse. This cohort is unique in that it includes patients very early in their disease course with the objective of determining their long-term clinical and quality of life outcomes and, predictors of these outcomes.

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FUNCTIONAL CORRELATES OF REDUCTION OF DIGITAL ULCERS BY BOSENTAN THERAPY IN PATIENTS WITH SYSTEMIC SCLEROSIS (SSC) Pope, J.E., Black, C., Matucci-Cerinic, M., Denton, C.P., Furst, D.E., Korn, J.H., Mayes, M.D., Morganti, A., Seibold, J.R. (St. Joseph Health Centre, London, ON, Canada, Royal Free and University College Medical School London, London, United Kingdom, Dept. Of Internal Medicine, University of Florence, Florence, Italy, Royal Free and University College, London, United Kingdom, University of California at Los Angeles, Los Angeles, CA, United States, Boston University, Boston, MA, United States, University of Texas-Houston, Texas-Houston, TX, United States, Actelion Pharmaceuticals Ltd,, Imperia, Italy, University of Michigan Scleroderma Program, Ann Arbor, MI, Unites States)

Objectives: Digital ulcers (DU) cause morbidity in SSc, including pain, infection and tissue loss. Two RCTs showed that Bosentan reduced the number of new DUs. New DUs were also measured in an open label (OL) extension. The Health Assessment Questionnaire Disability Index (HAQ) was completed by patients repeatedly. We assessed whether the reduction in the number of new DUs in SSc patients associated with Bosentan is accompanied by changes in patient function as assessed by the HAQ.

Methods: Studies included RAPIDS-1 (n = 122), its OL extension (n = 88, all on Bosentan), and RAPIDS-2 (n = 188). The randomization was 2:1 Bosentan to placebo in the first trial and 1:1 in the second. Exploratory endpoints (dressing, hygiene, and grip components of the HAQ-DI) were analyzed individually and in composite using summary statistics, with treatment difference explored using the Mann-Whitney U-test in RAPIDS-1 and the Pitman permutation test in RAPIDS-2.

Results: The overall HAQ improved on Bosentan more than on placebo (p=NS). However, dressing and hygiene were different favoring Bosentan (p=0.02 to 0.08) in all studies, whereas grip was not different.

Conclusions: The overall HAQ was not different between Bosentan and placebo. However, a consistent and sustained improvement in the HAQ "dressing" domain concomitant with a reduction in new DUs was found. The overall HAQ may be unresponsive to the presence of digital ulcers or not related to treatment with Bosentan. Bosentan use has a predictable and durable influence on dressing, a key element in activities of daily living. Digital ulcers did recur in some patients in both treatment groups, and healing time was not affected by Bosentan. Thus changes in the subset of the HAQ may be more related to presence or absence of digital ulcers than just exploring presence or absence of drug effect.

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DOCUMENTATION OF THE MUSCULOSKELETAL PHYSICAL EXAMINATION ON AN INTERNAL MEDICINE INPATIENT UNIT Jingyang Huang, Regina Taylor-Gjevre, John Sibley, Bindu Nair (University of Saskatchewan, Saskatoon, SK)

Objectives: There is recognition of the high prevalence of musculoskeletal conditions in the population. However there has been concern regarding the confidence and competence of both medical students and residents in their musculoskeletal physical examination. The purpose of this study is to assess the documentation of the admitting database of the inpatients on a clinical teaching unit, focusing specifically on the musculoskeletal examination.

Methods: Random selection of charts of inpatients that were admitted to Royal University Hospital Internal Medicine Clinical Teaching Unit from October 2003 to June 2006 was reviewed for the admitting database.

Results: The admission histories and physical examinations of 174 inpatients were reviewed. Seventy-four percent (129) of the admitting notes were written by residents while final year medical students were responsible for completing the history and physical examinations for 45 inpatients (26%). The documentation of physical examination for the cardiovascular system was noted in 98% (170) of the cases, respiratory system 97% (169), gastrointestinal system 95% (165) and neurological system 68% (118) of the cases. Only 38 inpatient charts (22%) had a musculoskeletal physical examination documented on day of admission. The quality of the notes for the musculoskeletal assessment was difficult to evaluate, as there appeared to be little consistency as to how findings were documented. Details were limited with evaluation of gait, range of motion and joint counts rarely done.

Conclusions: Musculoskeletal physical examinations were rarely included on the admitting databases of an Internal Medicine inpatient teaching unit. When musculoskeletal physical examinations were documented, information was limited. These findings highlight concerns that in both undergraduate and postgraduate training, trainees are not including the musculoskeletal assessment as a routine part of clinical practice.

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THE FUNCTION OF OSTEOBLASTIC CELLS IN RHEUMATOID ARTHRITIS MIGHT REDUCE IN COMPARISON WITH THAT IN OSTEOARTHRITIS AT THE MINERALIZATION STAGE. Daiki Morimoto, Koji Nomura, Takuji Kizawa, Yasuo Kunugiza, Shoko Kuroda, Tetsuya Tomita, Hideki Yoshikawa (Department of Orhopaedics,Osaka University Graduate School of Medicine Suita-shi,Osaka,Japan)

Objectives: To evaluate whether the function of bone formation in Rheumatoid arthritis(RA) is different from those in osteoarthritis(OA) by examining the osteoblastic differentiation of human mesenchymal stem cells(hMSCs) derived from bone marrow in patients.

Methods: The hMSCs were obtained from both RA and OA patient at the operation with informed consent.The mononuclear cells were extracted from total bone marrow cells by using Ficoll-Paque. These cells were cultured in alpha MEM with FBS for 2 weeks and the fibroblast colony-forming units(CFU-F) and the osteoblast colony-forming units(CFU-O) are measured. The adherent cells were cultured in alpha MEM with FBS and until confluent in T75 culture flask(passage1). In this stage, the cell surface antigens (CD14,CD29,CD34,CD45 and CD105)of both groups were analyzed by flow cytometory.In passage2, the cells were divided in two groups. In control group, the cells were cultured in alpha MEM with FBS and 10mM beta glycerophosphate(bGp) and in osteogenic group, the cells were incubated with FBS and bGp and ascorbic acid(AA) and dexamethasone(Dex).After 2weeks, alkaline phophatase (ALP) staining, ALP activities were measured in each group.After 3weeks, quantitive alizarin red S mineralization assays were performed.Total RNA was extracted from the cultured cells(passage2) incubated with bGp and AA and Dex for 2weeks. The gene expressions of ALP, bone sialoprotein (BSP), collagen type1a (Col1), osteocalcin (OCN), osteopontin (OPN) and runx2 were examined by real-time PCR. The results are expressed as the mean D.The Mann-Whitney U test was used for the statistical analyses. A p value of less than 0.05 was considered significant.

Results: The either number of CFU-F and CFU-O and the ratio of CFU-F and O showed no significant differences in OA and RA. In flow cytometory analysis, the ratio of the cell surface antigens in OA and RA were not different.In control group, mean ALP activity was 110.7 60.8 in OA and 61.3 2.3 in RA respectively(p=0.133). In osteogenic group, mean ALP activity was 261.6 78.9 in OA and 307.3 88.1in RA respectively(p=0.100). In both group, there were no significant differences between OA and RA.In quantitive alizarin red S mineralization assay, mean absorbance in OA was 0.440 .231 and 0.177 .176 in RA and there are significant differences (p=0.028). In real-time PCR, the expression of runx2 increased significantly in OA and the expression of others showed a trend toward increased in OA although not statistically significant.

Conclusions: In this experiment, we suggested that in RA, the function of osteoblastic differentiation might reduce at the stage of mineralization.

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CORRELATION BETWEEN THE BODY PAIN DIAGRAM AND DIAGNOSIS IN RHEUMATIC DISEASE. Caines, A., Pope, J.E., Thompson, A.E. (St. Joseph's Health Centre, London, Ontario, Canada)

Objectives: Early treatment of inflammatory arthritis (IA)has been shown to slow disease progression. A means of identifying such patients early is paramount if treatment is to alter morbidity. Pain diagrams have been widely used in the literature to evaluate both pain intensity, physical exam findings and even assist in diagnosis, but mostly in chronic non-inflammatory pain conditions such as fibromyalgia and carpel tunnel syndrome. Our objective was to

determine whether patients with various rheumatic conditions were more likely to indicate articular/non-articular pain in certain locations on a pain diagram and if yes, could a pain diagram then be used as a referral tool.

Methods: All patient charts referred to 2 rheumatologists (JP and AT) between the years 2000-2006, were included and eligible for the study if a pain diagram had been completed, the patient was not previously seen by a rheumatologist (hence had no diagnosis), and was >18 years. A diagnosis had to have been made by the second clinic visit. Pain diagrams were organized into groups based on the location of joint areas and/or soft tissue area(herein referred to as patterns). The sensitivity, specificity, positive and negative predictive values(PPV and NPV)of each pattern relating to a specific diagnosis were calculated. In addition, one rheumatologist reviewed all pain diagrams and made a diagnosis where possible to determine whether these diagrams were feasible to aid in a diagnosis.

Results: 1105 patients were included. Five major patterns evolved: primarily soft tissue (such as widespread pain or regional pain such as an entire arm) n=237, primarily symmetrical joint involvement n=649, primarily asymmetrical joint involvement n=136, monoarticular n=36, and back pain n=47. The pain diagrams resulted in good sensitivity and specificity for the polyarticular patterns (with respect to a diagnosis of polyarticular IA but could not necessarily differentiate between RA and psoriatic arthritis or SLE with joint involvement, but RA was the most frequent diagnosis in these patients). Widespread pain was strongly related to non-inflammatory diagnoses. Monoarticular patterns were representative of inflammatory oligoarthritis and also OA, so their specificity was not as good as the other patterns. Back pain did not perform well for differentiating ankylosing spondylitis from mechanical back pain, and the PPV would also depend on the referral practice (such as if the rheumatologist sees a lot of mechanical back pain or not).

Conclusions: The pain diagrams are helpful in discerning early inflammatory arthritis from other pain conditions. This is the first study to look at pain diagrams in undiagnosed inflammatory arthritis and can easily be used by patients in the referring physicians offices to expedite timely patient consults in early IA.

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REDUNDANCY AND RELATIVE RESPONSIVENESS OF QUALITY OF LIFE MEASURES FOR LONGITUDINAL STUDIES IN JUVENILE IDIOPATHIC ARTHRITIS Ciar M Duffy, Kiem G Oen, Rae SM Yeung, Michele Gibbon, Xun Zhang, Lori B Tucker, The REACCH OUT Study Group (Montreal Children's Hospital/McGill University Health Centre, Montreal, Quebec, Health Sciences Centre/Arthritis Centre/ University of Manitoba, Winnipeg, Manitoba, The Hospital for Sick Children/University of Toronto, Toronto, Ontario, BC Children's Hospital/University of British Columbia, Vancouver, BC, Canada)

Objectives: Although several quality of life (QL) measures have been validated for use in juvenile idiopathic arthritis (JIA), it is not clear which of these measures should be used in longitudinal studies. We addressed this issue in our cohort study of new onset JIA - REsearch on Arthritis in Canadian Children Emphasizing Outcomes (REACCH OUT).

Methods: All patients with new onset of JIA, enrolled at the 9 centres that had entered patients, completed a series of measures at baseline, 6 months and 12 months. Clinical [ACR Peds core set (6 measures) including active joint count (AJC) and a functional measure (CHAQ)], QL [CHQ, (physical, psychosocial and JIA subscales), JAQQ, Peds QL, (core and arthritis modules), QoML (overall and health)] and pain (PPQ) measures were included. At baseline, 6 months and 12 months, scores on the various measures were correlated one another to assess for redundancy. For these kinds of analyses correlations of 0.2-0.4 are low, 0.4-0.6, moderate and >0.6, high, and high scores would suggest redundancy. At 6 and 12 months, a standardized response mean (SRM) was also computed to assess the relative responsiveness of the QL measures. In this analysis, SRM of 0.3-0.5 indicate moderate, and > 0.5 good, responsiveness. This report includes the analysis of 363 patients at baseline, 196 at 6 months and 101 at 12 months for whom complete data were available.

Results: Correlations of some of the QL measures with the core set were high being best for the JAQQ (0.4 with active AJC to 0.81 for CHAQ), Peds QL arthritis (0.3 for AJC to 0.75 for CHAQ) and CHQ JIA subscales (0.4 for AJC to 0.8 for CHAQ). Correlations for the CHQ physical, CHQ psychosocial and QoML with the core set were lower. The JAQQ (0.78-0.82), Peds QL arthritis (0.60-0.82) and CHQ JIA subscales (0.60-0.78) also correlated very highly with one another but less well with the CHQ physical, CHQ psychosocial and QoML. The JAQQ (SRM 0.54, 0.39), Peds QL arthritis (SRM 0.41, 0.35) and CHQ JIA subscales (SRM 0.35, 0.29) also showed the best responsiveness at 6 and 12 months.

Conclusions: The JAQQ, Peds QL arthritis module, and CHQ JIA subscales performed best overall; however, these measures are highly correlated with one another and thus only one merits inclusion in this longitudinal cohort. Since the JAQQ performed well and is somewhat more responsive, easier to score and to compute, it is the measure that we will retain for this longitudinal cohort study.

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CENTRAL REFERRAL & TRIAGE FOR RHEUMATOLOGY (CREATE RHEUM) IN CALGARY Susan Barr, Theresa Lupton, Liam Martin, for the Division of Rheumatology (University of Calgary, Calgary, AB)

Objectives: Compare referral volumes and wait times before and after implementation of Central Referral and Triage for Rheumatology (CReATe Rheum) in Calgary.

Methods: All new referrals are received by a single fax, additional data is obtained as needed, the referral is triaged by the Nurse Clinician and assigned a tentative appointment date with the specified physician or next available rheumatologist based on urgency. Patients requiring expedited care are directed to specialized clinics (i.e. Urgent Assessment, Early Arthritis and Young Adult) that were developed in parallel. Less complex cases are assessed at a new Nurse Practitioner (NP) Clinic. A database was developed to track all referrals. Referral volumes and wait times during the first 5 months of operation were compared to baseline data from a 2005 practice audit of 485 referrals by 12 Calgary rheumatologists.

Results: The number of rheumatologists in Calgary remained stable in 2005-2006. In 2005, mean (SD) wait times were: routine 155 (88), moderate 110 (57), urgent 29 (46), and overall 133 (89) days (range 1-436). Huge variability among rheumatologists resulted in wait list shopping by referring physicians, with frequent no-shows (8%) and duplicate consults (>6%). About 2/3 of referrals were of poor or moderate quality. Referring physicians had low baseline satisfaction with the existing referral process (mean 4 out of 10), as did rheumatologists (5/10). Referral volume has remained stable (2005-2006) at ~100 referrals per week, with 25% of patients residing outside of Calgary. During the first 5 months, CReATe Rheum processed 2314 referrals; 56% were referred for possible inflammatory disorders. A significant ($p<0.00005$) decrease from 2005 wait times overall [113 (69)], and for routine [128 (66)] and moderate referrals [69 (51)] was observed. Urgent wait time remained stable [29 (27)]. The NP Clinic received 149 referrals and was partly responsible for the reduced wait time for routine patients, however, the study findings were unchanged when these patients were excluded from the analysis. The proportion of no-shows among 587 patients with appointments during the study period was 0.7%.

Conclusions: Preliminary analysis of the first 5 months after implementing Central Referral and Triage in Calgary showed evidence of significantly reduced wait times and reduced variability. This result was obtained despite a mean wait time at baseline of 4.4 months. Further research will assess whether this result is due to improved efficiency, reduced no-shows and/or fewer unnecessary duplicate consults.

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CONTRIBUTION OF MEASURING FATIGUE AND SLEEP QUALITY IN ADDITION TO QUALITY OF LIFE IN RHEUMATOID ARTHRITIS PATIENTS George Wells, Tracy Li, Pablo Lapuerta, Peter Tugwell (University of Ottawa, Ottawa, ON, Bristol Myers Squibb, Princeton, NJ)

Objectives: Given the importance of fatigue and sleep as perceived by arthritis patients and the central role of generic quality of life instrument SF-36, the goal is to evaluate the independent contribution of fatigue and sleep quality

with respect to SF-36 domains and component scores needed in order to explore the value added of these measures.

Methods: Two randomized, double-blind, placebo controlled trials in patients with active RA were considered in this assessment: a 6 month trial (ATTAIN) comparing treatment with abatacept (n=258) to placebo (n=133) on a background of DMARD therapy in patients who were anti-TNF therapy failures; and a 12 month trial (AIM) comparing treatment with abatacept (n=433) to placebo (n=219) on background methotrexate therapy. Outcomes assessed included ACR core set measures, activity limitation, fatigue, sleep quality and the SF-36 (domains physical functioning (PF), role-physical (R/P), bodily pain (BP), general health (GH), vitality (V), social functioning (SF), role-emotional (R/E), mental health (MH); physical and mental component scores (PCS, MCS). Factor analysis was used to examine the interrelations among the outcomes, in order to identify simple patterns (factors) and, more specifically, the relationship of fatigue and sleep quality to SF-36 domains. For outcomes within a factor, Cronbach's alpha was used to assess internal consistency and importance of each outcome to the factor.

Results: For the 2 trials, with treatment groups considered separately and combined, consistent patterns in the factor scores and Cronbach alphas were found. Generally, fatigue was related most often to the physical domains and sleep to vitality and general health. For the analysis in which both groups in both studies were combined, the outcomes with high loadings (>.6) for the 3 factors were: factor 1 (HAQ, patient pain assessment, BP, PF, R/P, activity limitation, fatigue); factor 2 (GH, V, sleep); and factor 3 (MH, R/E). The Cronbach alpha for factors 1,2,3 were .92, .87, .79 respectively.

Conclusions: Fatigue and activity limitation are related to and provide an independent contribution to the more physical domains of the SF-36, particularly BP, PF, R/P. Sleep quality is related to and provides an independent contribution to the vitality and GH domains. Measuring fatigue and sleep quality in addition to SF-36 is value added and provides further insight into patient reported outcomes.

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THE EFFICACY AND SAFETY OF ABATACEPT OR INFLIXIMAB IN RA PATIENTS WITH AN INADEQUATE RESPONSE TO MTX: RESULTS FROM A 1-YEAR DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED TRIAL Louis Bessette, Michael Schiff, Mauro Kieserman (Univeristy of Laval, Ste-Foy, QC, Denver Arthritis Clinic, Denver, CO, Pontifical Catholic University School of Medicine, Porto Alegre, Brazil)

Objectives: To assess the efficacy and safety of abatacept and infliximab in RA patients with an inadequate response to MTX.

Methods: Patients with an inadequate response to MTX and no prior anti-TNF therapy were randomized to abatacept (~10 mg/kg every 4 wks; N=156), infliximab (3 mg/kg every 8 wks; N=165), or PBO (every 4 wks; N=110). Placebo patients were switched to abatacept after Day 197, and were not included in the 365-day analysis. Primary endpoint was reduction in mean DAS28 with abatacept vs. placebo at Day 197. Secondary endpoints included ACR response rates, HAQ, SF-36 and safety. The differences between abatacept and infliximab were evaluated at 1 year.

Results: Baseline characteristics were similar between treatment groups. Mean HAQ and DAS28 scores at baseline were 1.7 and 6.8, respectively. Through 6 months, efficacy measured by DAS28, ACR response rates, HAQ, and SF-36 was similar following treatment with either abatacept or infliximab ($P<0.05$ vs. placebo for all comparisons). At 12 months, the ACR20 response rate of abatacept (72.4%) was statistically significantly different from that of infliximab (55.7%). Differences in improvement in DAS28 (mean change from baseline to 12 months for abatacept was -2.9 and for infliximab -2.3) and SF-36 PCS (mean change from baseline to 12 months for abatacept was 9.6 and for infliximab 7.6) were also statistically significant. There were trends in favour of abatacept compared to infliximab in HAQ, SF-36 MCI, ACR50 and ACR70 response rates.

The frequency of adverse events (AEs) was similar between treatment groups. After 1 year, more SAEs (18.2 vs 9.6%), discontinuations due to AEs (7.3 vs 3.2%) and SAEs (3.6 vs 2.6%), infections (8.5 vs 1.9%), and acute infusional AEs (24.8 vs 7.1%) were reported with infliximab than with abatacept. Two cases of tuberculosis were reported, both in patients treated with infliximab.

Conclusions: 1-year efficacy and safety data suggest that abatacept has a more favourable benefit risk profile than infliximab.

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THE CLINICAL PRESENTATION OF PATIENTS WITH SYMPTOMATIC ACETABULAR LABRAL TEARS, UNRESPONSIVE TO MEDICAL MANAGEMENT, WITH THE DIAGNOSIS SUBSEQUENTLY CONFIRMED BY MRI HIP ARTHROGRAMS. Neil Desai, Jean Gillies, Charles Ratzlaff, Jay Barberie, Jason Clement, Anthony Wong (Graduate student, Simon Fraser University, Burnaby, BC, Division of Rheumatology, University of British Columbia, Vancouver, BC, Department of Health Care & Epidemiology, University of British Columbia, Vancouver, BC , Department of Radiology, University of British Columbia, Vancouver, BC)

Objectives: To determine the symptoms and signs in our patient group with the provisional diagnosis of symptomatic acetabular labral tears with a positive office diagnostic test and unresponsive to medical management, where subsequent MRI hip arthrograms confirmed the diagnosis.

Methods: We retrospectively reviewed the records of ten consecutive patients [eleven hips] referred to a tertiary/quaternary rheumatology clinic specializing in orthopaedic medicine, whose presenting chief complaint was groin pain. The pre-MRI provisional diagnosis was a symptomatic acetabular labral tear in ten of the hips, and symptomatic loose bodies with a possible symptomatic labral tear in one hip. We reviewed our records for the critical history and physical findings suggestive of symptomatic labral tears, and compared it to the literature. We reviewed the results of our office diagnostic test [hip manipulation using the Cyriax protocol] that supported the provisional diagnosis of a symptomatic labral tear or a symptomatic loose body. We recorded the MRI arthrogram results and, where available, the hip ultrasound results.

Results: All patients reported one or more of the following symptoms suggestive of a labral tear: painful arc/impingement symptoms ["clicking," "catching," "popping," "give-way" sensations], and pain with loaded pivoting movements. On physical examination of the hip joint, all patients presented with a decreased passive range-of-motion [pROM] in a non-capsular pattern [as described by Cyriax], and the following hip stress tests: a positive hip F-90/add/IR test [hip flexion @ 90 degrees + adduction + internal rotation], a positive hip F-120/add/AC test [hip flexion @ 120 degrees + adduction + axial compression], and a positive FABER test. Physical examination before and after "diagnostic" hip manipulation with traction resulted in a substantial improvement in both the hip pROM and the hip stress tests. Because all these patients either reported only a transient or partial response to a course of hip manipulation [three treatments, on three consecutive days], they underwent an MRI hip arthrogram prior to referral to an arthroscopic hip surgeon. All 11 hips [ten patients] were positive for labral tears on the MRI hip arthrogram.

Conclusions: Acetabular labral tears have been associated with the subsequent development of hip osteoarthritis. Symptomatic acetabular tears are difficult to diagnose, with the average delay to diagnosis being 21 to 24 months reported in two recent reviews. We present an office diagnostic test, which in association with specific symptoms and signs, could increase the likelihood of a positive MRI hip arthrogram.

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CLINICAL RESPONSE TO A SECOND OR THIRD ANTI-TNF AGENT AFTER DISCONTINUATION OF THE FIRST. IMPLICATIONS FOR THERAPEUTIC DECISION-MAKING. B Haraoui, L Cameron, J L'Archeveque, M Ouellet, D Choquette, JP Raynauld (Institut de rhumatologie de Montreal, Montreal QC)

Objectives: To evaluate the clinical response to a second and eventually a third anti-TNF agent and reasons for discontinuation in patients with rheumatoid arthritis (RA).

Methods: One hundred RA patients treated for the first time in 2001/2002, with either etanercept (ETN, n=50) or infliximab (IFX, n=50) were included. To qualify for this analysis, patients had to have received ETN or IFX for a

minimum of 3 months unless discontinued for an adverse event (AE). Patients were followed prospectively up to November 2005.

Results: Both groups (ETN and IFX) were comparable for age (55y), sex (F=74%), weight (72Kg), the presence of rheumatoid factor (81% RF+) and disease activity, including fatigue scores (4.6 /10 VAS). They differed in their disease duration (ETN: 12.7 and IFX 16.8 years p=0.03) and IFX patients had higher, though not statistically different HAQ scores (1.38 vs. 1.17). 50% of the IFX patients required a dose increase (mean 4.5mg/kg).

A total of 35 patients discontinued therapy for lack /loss of efficacy (LOE n= 18), adverse events (AE n=14) or other (n=3). The mean time to discontinuation was comparable (ETN=0.8 vs. IFX=1.2 years ns). Twenty-one patients switched to a second anti-TNF (15 from the LOE group, 6 from the AE group). Nine patients (60%) from the LOE group discontinued the 2nd anti-TNF for inadequate clinical response and 3 patients (50%) from the AE group discontinued the 2nd anti-TNF because of AEs. Only 9/21 (43%) of the total switch population were able to continue the 2nd anti-TNF. Eleven patients received a 3rd anti-TNF and only 4 (37%) are still continuing after a mean of 8 months.

Conclusions: The maintenance rate and the clinical response to a 2nd or a 3rd anti-TNF drug are lower than for the 1st one. Patients seem also to follow the same pattern for the reasons of discontinuation; the majority of patients stopping the first anti-TNF for LOE had an inadequate clinical response to the 2nd TNF inhibitor. This observation, coupled to other reports raises the issue of the appropriateness of switching to another anti-TNF agent versus starting another class of biologics. Further randomised and ideally head-to-head trials are needed to answer this important question.

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SMOLDERING RA: IS THE CANADIAN HEALTH CARE SYSTEM NEGLECTING A SIGNIFICANT DISEASE POPULATION? Steven Edworthy, Michel Zummer, Gilles Boire, Sharon LeClercq, Vivian Bykerk, Gunnar Kraag, Janet Markland, Daina Thomas, Stephanie Garner, John Thomson, Jaimie Henderson (University of Calgary, Universite de Montreal, Universite de Sherbrooke, University of Toronto, University of Ottawa, University of Saskatchewan, University of New Brunswick)

Objectives: To evaluate the disease activity status of RA patients followed in rheumatology clinics across Canada and to assess treatment regimens. We hypothesized that a significant proportion of patients who have "smoldering" disease activity may be inadequately treated.

Methods: Practicing rheumatologists across all regions of Canada were invited by the Canadian Rheumatology Association to participate in this observational study. Consecutive patients seen in their regular clinics were classified according to 4 states of disease activity; remission, controlled adequately, smoldering, and uncontrolled. Demographics (age, gender, geographic region), therapy (NSAIDS, DMARDS, Biologicals, Steroids), joint counts (tender/swollen), comorbidity, and treatment decisions at the time of the visit were recorded. Data was collected at the time of the visit with personal digital assistants (PDAs) and aggregated, without personal identifiers, for analysis in SPSS.

Results: The majority of patients (N=1596) were either "smoldering" (29%) or "uncontrolled" (23%), with the remainder in "remission" (15%) or "controlled adequately" (33%) at the time of their visit. No changes to therapy were identified in 52% of smoldering patients. Following the appointment, the uncontrolled group had a 100% increase (from 10% to 21%) in the addition of biological agents, however, there was no significant increase in the rates for those with smoldering disease (19.4% to 20.5%). While 69% of 458 patients with smoldering disease were on Methotrexate, 87% of these were on a dose less than 25mg (SC or IM). Single DMARD therapy was used in 57% of smoldering patients and 11% were not on any DMARD. Additionally, 37% of 458 smoldering patients were on prednisone. Of the 238 smoldering patients with no therapy change, 38% were considered to be "satisfactorily" controlled and 18% of patients did not see the value in increased intervention. There were no significant differences across geographic regions of Canada to explain the differences in disease state or treatment regimens. However, it was noted that the overall disease activity was significantly different across provinces (p<.01). Moreover, there was an indirect association of smoldering disease with varying provincial policies on release of biological agents.

Conclusions: Despite Canada universal health system, current treatment regimens may not be optimized on the basis of disease activity. A large proportion of RA patients (29%) seen in Canadian rheumatology practices may be experiencing unnecessary disease for a variety of reasons. Future research will examine patient, physician and system factors to explain the lack of therapeutic changes in smoldering RA.

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COST-EFFECTIVENESS OF ABATACEPT VERSUS OTHER BIOLOGIC AGENTS IN DMARDS AND ANTI-TNF INADEQUATE RESPONDERS FOR THE MANAGEMENT OF MODERATE TO SEVERE RHEUMATOID ARTHRITIS IN CANADA B. Haraoui, A. Russell, C. Thorne (Institut de rhumatologie de Montreal, Montreal QC, University of Alberta, Edmonton, AB, University of Toronto, Toronto, ON)

Objectives: To assess the cost-effectiveness of different treatment strategies for moderate to severe Rheumatoid Arthritis (RA) based on current medical practices in Canada.

Methods: Simulation modeling was used to assess the cost-effectiveness of various biologic treatment sequences based on current medical practices in Canada. The model used a simulation decision framework and a 2-year time horizon over four 6 months intervals. The model used two clinically meaningful effectiveness endpoints: low disease activity (LDA) defined as DAS28 score < 3.2 and remission defined as DAS28 score < 2.6. Data sources come from published clinical data for induction treatment and from abatacept clinical trials specific analyses for maintenance treatment. Probabilistic sensitivity analyses were conducted using 5000 Monte-Carlo simulations taking into account specific distribution shapes for each cost and effectiveness parameters. Canadian costing data was based on DAS score categories and average recommended dosing.

Results: DMARDs inadequate responders

Abatacept as first biologic agent is cost-effective, providing greater treatment success rate of achieving LDA than sequential anti-TNF therapy (29.4% versus 15.6%) with overall cost savings of $730. The mean cost-effectiveness ratio also shows significantly lower cost on average to achieve LDA with abatacept as first biologic (p<0.0001).

Using remission as effectiveness endpoint, abatacept as first biologic agent provides greater treatment success rate of achieving remission compared to sequential anti-TNF therapy (14.8% versus 5.2%) with overall cost savings of $504. The mean cost-effectiveness ratio also shows significantly lower cost on average to achieve remission with abatacept as first biologic (p<0.0001).

Anti-TNF inadequate responders

Abatacept as second biologic after an inadequate response to one anti-TNF is cost-effective, providing additional effectiveness with 6.9% additional treatment success rate of LDA and 3.5% additional treatment success rate of remission, at an incremental cost-effectiveness of $20,377 per additional case of LDA and $26,400 per additional remission.

Conclusions: This robust cost-effectiveness modeling is the only study assessing the cost-effectiveness of various RA biologic treatment sequences according to current medical practices in Canada. This study establishes that introducing abatacept as the first biologic agent is a dominant strategy (more effective and less costly) in DMARDs inadequate responders, and a cost-effective strategy in anti-TNF inadequate responders.

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PLANNING FOR A RHEUMATOLOGY DIVISION ELECTRONIC RECORD DEPLOYMENT: Zain Kassam, Steven Edworthy, Elisia Teixeira, Christopher Penney (University of London, University of Calgary)

Objectives: Electronic Medical Records (EMR) have been shown to improve quality of patient care. However, EMRs have not been widely adopted in Canadian academic care centers. Barriers to effective EMR implementation include, among other factors: (i) inadequate clinician involvement in software development and (ii) lack of a cohesive, task-specific computer work-flow to support coordinated care. We undertook a preliminary work-flow design and

surveyed the rheumatology division regarding their views on template design for TNF-alpha blocking agents in rheumatoid arthritis.

Methods: Anticipating EMR deployment at the University of Calgary, rheumatologists and biologics nurses completed a self-reported survey regarding their perceptions, attitudes and involvement in EMR development. A semi-structured focus group provided feedback for preliminary template modification. Implementation of the approach was made possible by adapting the tool to a new, commercially available, EMR.

Results: Rheumatologists (11) and nurses (3) participated. Participants felt strongly that clinical input was required for the template, but preferred that a small committee develop templates for the division. Few participants felt confident they would be very involved in the template process, yet did not feel that a consensus by all clinicians would be necessary to achieve a satisfactory template design.

Self-reported confidence in personal computer skills was strong in 9 of 14, but only 6 reported confidence in using templates to record clinical observations. User-friendliness and efficiency were rated as more important than monitoring adverse events or research. Reporting adverse events to either pharmaceutical companies or Health Canada was not scored as a strong need for the software.

Two felt that data input should be undertaken by nurses, while the majority felt it should be a combination of rheumatologists and nurses.

Conclusions: Clinicians feel strongly that clinical input to systems development is needed, but are often reluctant or unable to dedicate the time required. A small work-group, with feedback to the larger group, was chosen by our division. Template development was undertaken with close attention to efficient and ser-friendly formats. Consideration was given to both nurses and rheumatologists, regarding input to a common record. EMR deployment will necessitate changes in practice patterns. Clinician involvement in the design and implementation of data input instruments is felt to be necessary for successful adoption of this technology.

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ABATACEPT PROVIDES SUSTAINED IMPROVEMENTS IN PAIN, FATIGUE AND SLEEP QUALITY THROUGH 2 YEARS IN THE TREATMENT OF RHEUMATOID ARTHRITIS PATIENTS IN THE AIM AND ATTAIN TRIALS M. Dougados, Anthony Russell, Tracy Li, Y. Sherrer, J. Teng, T. McCann, R. Westhovens (Hopital Cochin, Paris, France, University of Alberta Hospital, Edmonton, AB, Bristol-Myers Squibb, Princeton, NJ, Center for Rheumatology, Immunology and Arthritis, Fort Lauderdale, FL, Department of Rheumatology, Leuven, Belgium)

Objectives: Pain, fatigue, and sleep quality were assessed through 2 years of Abatacept treatment in the AIM (Abatacept in Inadequate responders to Methotrexate [MTX]) and ATTAIN (Abatacept Trial in Treatment of Anti-TNF INadequate responders) trials.

Methods: AIM and ATTAIN were randomized, double-blind (DB), Placebo-controlled, Phase III trials of 12 and 6 months duration, respectively. Patients received a fixed dose of Abatacept (~10 mg/kg) or Placebo. AIM patients continued with background MTX. ATTAIN patients washed out anti-TNF therapy prior to enrollment and remained on =/>1 DMARD. Patients who completed the DB phases were eligible to enroll in the open-label (OL) long-term extension (fixed dose of Abatacept ~10 mg/kg every 4 wks plus MTX/DMARDs). Pain and fatigue severity were assessed using a 100 mm visual analog scale (VAS). Sleep quality was assessed using the Medical Outcomes Study Sleep Scale (MOS-Sleep). Scores for all measures were 0-100, with higher scores indicating more problems.

Results: 433 and 219 AIM patients were randomized to Abatacept or Placebo, respectively, with 385 (88.9%) and 162 (74.0%) completing 1 year. Of these, 539 patients were enrolled in the OL phase. Of the 258 and 133 ATTAIN patients randomized and treated with Abatacept or Placebo, respectively, during the DB phase, 223 (86.4%) and 99 (74.4%) completed 6 months of treatment and 317 entered the OL period. Improvements from baseline in pain, fatigue, and MOS-Sleep were seen for Abatacept vs Placebo-treated patients after 1 year/6 months (AIM/ATTAIN, respectively). Patients who originally received Placebo in the DB and had received 1 year/18 months of Abatacept (AIM/ATTAIN, respectively) in the OL, had improvements at year 2 in pain, fatigue, and MOS-Sleep that were comparable to patients who had received 2 years of Abatacept treatment.

Conclusions: Abatacept provided sustained improvements in pain, fatigue, and sleep quality through 2 years of treatment in MTX and anti-TNF inadequate responders. These data suggest Abatacept has the potential to provide meaningful benefits to patients with active RA.

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TRANSITION TO ELECTRONIC MEDICAL RECORDS: WHAT RHEUMATOLOGISTS NEED TO KNOW. Stephanie Garner, Terri Lupton, Susan Barr, Christopher Penney, Liam Martin, Steven Edworthy (University of Calgary)

Objectives: To describe changes in work flow, staff roles and barriers encountered when making the transition from paper-based to electronic medical records (EMR).

Methods: This was a single site prospective observational study of changes in work flow and staff roles during implementation of an EMR. Staff were observed and interviewed to determine baseline work flow. Throughout the transition to the EMR investigators monitored work flow, staff roles and level of satisfaction.

Results: Work Flow

1. Communication: Staff and clinics are distributed across the city, making communication arduous. With the EMR communication has become simple, instantaneous and easy to track. In an emergency the EMR allows physician access to other patients charts directly benefiting patient care.
2. Filing: Paper flows from medical mail, lab and pathology services, and fax information. Filing this paper is time-consuming, error prone, and ultimately restricts information to one location: the paper chart. Filing has been replaced with scanning, a task that requires new skill sets and different tools. Unlike filed documents and charts, scanned documents are always available to all EMR users.
3. Central Triage: Prior to EMR, CT noted that 53% of patients needed to be re-booked because the anticipated referral slot was no longer free. CT now has direct access to physician schedules and can search for the most appropriate appointment time for a particular patient problem.
4. Consult Letters: Transcription work flow and paper "sign-off" was found to be time consuming prior to EMR. Dictated letters are now directly transcribed into the EMR. Letters are reviewed and signed electronically. Time from dictation to RP receiving letter has been decreased.

Staff Roles

1. Physicians transitioned to the EMR eagerly; however some had an initial reluctance to part with paper charts.
2. Administrative staff quickly identified the benefits of the EMR. It allows them to focus on patient inquiries and office management and not waste time finding charts and documents.
3. Computer skills were varied amongst clerical staff. Some were more apt at scanning, while others excelled at scheduling visits.

Conclusions: The EMR increased communication between staff, improving patient care. A scanning solution is vital to the EMRs success, however, its significance was commonly disregarded. Electronic access to information improves access to care. This increases satisfaction of referring physicians and their patients.

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SUSTAINED EFFICACY AND SAFETY THROUGH 2 YEARS IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA) IN THE LONG-TERM EXTENSION OF THE ATTAIN TRIAL M. C. Genovese, E. Keystone, M. Schiff, M. Luggen (Stanford University, Stanford, CA;, University of Toronto, Toronto, ON, Denver Arthritis Clinic, Denver, CO, University of Cincinnati Medical Center, Cincinnati, OH)

Objectives: To evaluate efficacy and safety of abatacept through 2 yrs of treatment in RA patients with an inadequate response to anti-TNF therapy.

Methods: The ATTAIN (Abatacept Trial in Treatment of Anti-TNF INadequate responders) trial was a 6-month, Phase III, double-blind (DB),

placebo-controlled trial with an open-label long-term extension (LTE). No anti-TNF therapies were permitted following washout. In the DB phase, patients received a fixed dose of abatacept (~10 mg/kg) on Days 1, 15 and 29, and every 4 wks thereafter, plus =/>1 background DMARD. Patients completing the DB phase entered the LTE (Abatacept ~10 mg/kg every 4 wks plus background DMARDs). ACR 20, 50 and 70 responses, Disease Activity Score (DAS)28-defined remission (DAS28 <2.6, using C-reactive protein [CRP] levels) and Low Disease Activity Score (LDAS; DAS28 =/<3.2) were all assessed at Months 12, 18 and 24.

Results: Of the 258 patients randomized and treated with abatacept during the DB phase, 223 (86.4%) completed 6 months of treatment and 218 (84.5%) entered the LTE, with 156 (71.6%) of these completing 2 years of the study. ACR responses were maintained through 2 years of abatacept treatment when an ITT analysis (discontinued patients considered as non-responders) was performed: ACR 20 of 56.2%, ACR 50 of 33.2%, and an ACR 70 of 16.1%. ACR responses increased over time, when an as-observed analysis was used: ACR 20 of 65.2% and 75.0%, ACR 50 of 32.3% and 45.8%, ACR 70 of 18.3% and 22.6%, after 1 and 2 years respectively.

Similarly, LDAS and remission, respectively, were increased through 2 years (as-observed analysis: Month 6, 18.3% and 11.1%; Month 24, 32.0% and 20.3%, respectively). For the 6-month DB and 18-month LTE, respectively, serious adverse events/100 patient-years were 34.5 and 29.4; malignancies/100 patient-years were: 2.3 and 2.1 and serious infections/100 patient-years were 4.6 and 3.7.

Conclusions: In the ATTAIN trial, abatacept provided sustained improvements in the response to treatment (ACR responses) and the status of disease (LDAS/DAS28-defined remission), and was generally safe and well tolerated through 2 yrs. The long-term as-observed analysis suggests possible increased efficacy over time.

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ABATACEPT PROVIDES CLINICAL BENEFITS IN RHEUMATOID ARTHRITIS (RA) PATIENTS WHO PREVIOUSLY DEMONSTRATED A LACK OF RESPONSE OR NO RESPONSE TO ONE OR MORE ANTI-TNF THERAPIES E. Keystone, R. Aranda, J-C Becker, A. Covucci, M. C. Genovese (University of Toronto, Toronto, ON, Bristol-Myers Squibb, Princeton, NJ, Stanford University, Palo Alto, CA)

Objectives: To evaluate whether responsiveness to prior anti-TNF therapy affects the efficacy of abatacept.

Methods: A post-hoc analysis was undertaken of the ATTAIN (Abatacept Trial in Treatment of Anti-TNF INadequate responders) trial. This was a 6-mth, randomized, double-blind, placebo-controlled, Phase III trial of a fixed dose of abatacept (~10 mg/kg, based on weight range) vs placebo in patients with active RA (=/>10 swollen joints and =/>12 tender joints) who were not adequately responding to =/>3 mths of anti-TNF therapy (etanercept, infliximab, or both independently). Study medication was given on Days 1, 15 and 29, and every 4 weeks thereafter. All patients received =/>1 background disease modifying antirheumatic drug. Disease Activity Score 28 (DAS28, using C-reactive protein levels) was assessed over 6 months and related to whether patients were primary (no response) or secondary (loss of response) failures (based on clinical measures) to etanercept, infliximab, or both independently (at baseline).

Results: A total of 258 vs 133 patients were treated with abatacept vs placebo, respectively. At baseline, characteristics were similar between the abatacept and placebo groups (mean DAS28 for abatacept vs placebo: 6.5 +/- 0.9 vs 6.5 +/- 0.8). At 6 months, abatacept demonstrated significant reductions in the DAS28 vs placebo (adjusted mean change [standard error]: -1.83 [0.08] vs -0.74 [0.11]; p<0.001, for abatacept vs placebo, respectively). Reductions in DAS28 were seen for abatacept vs placebo, regardless of the reason for prior anti-TNF therapy failure (etanercept, infliximab, or both independently). The most marked reductions were in abatacept patents who failed to respond to both etanercept and infliximab, independently. Reductions were comparable in patients who had no response or experienced a loss of response, to etanercept or infliximab.

Conclusions: The reason for prior failure of etanercept or infliximab does not influence a subsequent response to abatacept. Results suggest that consideration should be given to using abatacept in patients failing to achieve a response to etanercept or infliximab, or both independently.

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LONG-TERM EFFICACY OF ABATACEPT THROUGH 2 YEARS OF TREATMENT IN RHEUMATOID ARTHRITIS PATIENTS IN THE AIM TRIAL J. Kremer, A. Russell, R. Westhovens (Center for Rheumatology, Albany, NY, University of Alberta Hospital, Edmonton, AB,, Department of Rheumatology, Leuven, Belgium)

Objectives: To evaluate the long-term efficacy of abatacept through 2 years of treatment in patients with active rheumatoid arthritis and an inadequate response to MTX, using assessments of response to treatment and status of disease.

Methods: AIM (Abatacept in Inadequate responders to Methotrexate [MTX]) was a Phase III, 1-year, double-blind (DB), placebo-controlled trial with an open-label long-term extension (LTE). Patients were treated with abatacept (~10 mg/kg) or placebo on Days 1, 15 and 29, and every 4 weeks thereafter (+ MTX for 1 year during the DB period). Patients completing the DB phase entered LTE, where all patients received a fixed dose of abatacept (~10 mg/kg) every 4 weeks. ACR 20, 50, 70 and major clinical response (MCR) (maintenance of an ACR 70 response for 6 continuous months), Disease Activity Score 28 (DAS28)-defined remission (DAS28<2.6, using C-reactive protein [CRP] levels), and Low Disease Activity Score (LDAS [DAS28=/<3.2]) were assessed at months 12, 18 and 24.

Results: 433 and 219 patients were randomized to receive abatacept and placebo, respectively, with 385 (88.9%) and 162 (74.0%), respectively, completing 1 year of treatment. A total of 539 patients entered LTE, with 488 (90.5%) of these completing 2 years. ACR responses were maintained through 2 years of abatacept treatment when an ITT analysis (discontinued patients considered as non-responders) was performed: ACR 20 of 80.3%, ACR 50 of 55.6%, and an ACR 70 of 34.3%. ACR responses increased over time, when a post-hoc, as-observed analysis was used: ACR 20 of 82.3% and 87.7%, ACR 50 of 54.3% and 61.7%, ACR 70 of 32.4% and 38.0%, after 1 and 2 years, respectively. The proportion of patients with an MCR increased through 2 years of treatment: 16.0% vs 28.2% pts, at 1 and 2 years respectively. Similarly, the proportions of patients with LDAS (44.1% at 12 months; 46.4% at 18 months and 56.1% at 24 months) and DAS28-CRP-defined remission (25.4% at 12 months; 29.5% at 18 months and 30.9% at 24 months) increased though 2 years with the as-observed analysis.

Conclusions: Abatacept provided sustained improvements in the response to treatment and the status of disease. The long-term as-observed analysis shows possible increased efficacy benefits over time.

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MALIGNANCIES IN THE RHEUMATOID ARTHRITIS (RA) ABATACEPT CLINICAL DEVELOPMENT PROGRAM: AN EPIDEMIOLOGICAL ASSESSMENT D. Lacaille, T. A. Simon, A. L. Smitten (University of British Columbia, Vancouver, BC, Global Epidemiology, Bristol-Myers Squibb Company, Hopewell, NJ, USA, Harvard School of Public Health, Boston, MA)

Objectives: The objective was to compare the malignancy experience in the rheumatoid arthritis (RA) abatacept clinical development program with that observed in the general population and determine whether standardized incidence ratios (SIRs) obtained were consistent with those seen in published literature for other RA populations compared to non-RA or general population rates.

Methods: Numbers and age- and sex-specific incidence rates of pre-specified malignancies in the cumulative abatacept clinical trial program (double-blind and open-label periods) were calculated. Age and sex-specific malignancy incidence rates from Surveillance, Epidemiology, and End Results (SEER) were used to estimate expected numbers in the abatacept trials applying indirect adjustment. Numbers of malignancies observed in the abatacept trial experience were compared to the numbers expected based on the general population using SIRs. A literature search was conducted for population-based

observational studies published from 1990 through Oct 2006 assessing risk of cancer in adult RA patients. We graphically compared the SIRs we calculated for RA patients on abatacept to those presented for other RA cohorts.

Results: Cumulative abatacept experience included a total of 2,688 abatacept-treated patients representing ~6,400 person-years of exposure. Crude rates (per 100 person-years) were as follows: overall malignancy (excluding non-melanoma skin cancer): 0.61 (95% CI:0.43-0.84); lymphoma: 0.06 (95% CI:0.02-0.16); lung cancer: 0.20 (95% CI:0.11-0.35); breast cancer: 0.08 (95% CI:0.03-0.18); colorectal cancer: 0. Calculated SIRs based on SEER data were 0.82 (95% CI:0.59-1.13) for overall malignancies (excluding non-melanoma skin cancer), 2.62 (95% CI:0.61-5.79) for lymphoma, 1.98 (95% CI:1.05-3.39) for lung cancer, and 0.39 (95% CI:0.13-0.91) for breast cancer. A total of 17 publications examining SIRs of malignancy in RA patients met our inclusion criteria: 12 studies reported SIRs for lymphoma, 10 for lung, 7 for breast and 8 for colorectal cancers. Our SIRs fell within the range of SIRs presented in the literature.

Conclusions: The SIRs of abatacept-treated patients compared to general population were similar to those reported in the literature. Published literature suggests RA patients are at higher risk of lung cancer and lymphoma and lower risk of colorectal cancer than the general population making the general population a non-ideal reference population. The SIRs we obtained were also consistent with those from other RA cohorts.

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LOW PROPORTION OF REMISSION WITH AGGRESSIVE INITIAL DISEASE MODIFYING ANTI RHEUMATIC DRUG (DMARD) THERAPY IN PATIENTS WITH EARLY INFLAMMATORY ARTHRITIS (EIA) USING DAS, SDAI AND CDAI REMISSION CRITERIA V Bykerk, C Kitamura, S Walji, MH Chen, MG Milton, EC Keystone (University of Toronto)

Objectives: In Ontario, Canada patients initial treatment of RA typically includes 2 DMARDs including methotrexate (MTX) and leflunomide (LEF) with frequent use of combination MTX and LEF. Patients who fail this approach will be eligible according to provincial criteria to be treated with a TNF alpha antagonist. In this study the success of this approach in an observational "real-world" cohort of patients with EAI is evaluated by determining the proportion of patients who reached remission (based on multiple remission criteria) when exposed initially to aggressive DMARD therapy in the first 6-9 months.

Methods: The first 94 patients with early inflammatory arthritis (EIA) recruited to the Toronto Early Arthritis CoHort (TEACH) were analyzed for frequency of remission. Patients included are > 16 years old, had symptoms for =/> 6 weeks and < 12 months, and have 2 or more swollen joints or 1 swollen MCP or PIP and =/> 1 of positive RF, anti-CCP, AM stiffness > 45 min, a response to NSAID or painful MTP squeeze test. 60% of patients received initial combination DMARD (MTX + hydroxychloroquine +/- sulfasalazine) therapy (MTX dose = 20-25 mg, 30% of which were given s.c. MTX) and 40% were given MTX at this dose with either oral or parenteral steroids. Less than 5% started with biologic therapy. Patients were assessed every 3 months with therapy adjusted each time targeting for zero swollen joints. The proportion of patients reaching target remission criteria of DAS-CRP<2.6, SDAI=/<3.3 and CDAI=/<2.8 were calculated.

Results: The mean age was 45.6 +/- 4.5 years; 81% are female, median symptom duration 5.1 months. At baseline 59% fulfilled ACR criteria for RA, 24% were RF positive, 25% had erosions on baseline x-rays and 52% of the first 40 patients were anti-CCP positive. Mean baseline HAQ was 0.86 and DAS28-CRP was 4.9. 60% received initial combination DMARDs (MTX + hydroxychloroquine +/- sulfasalazine) (MTX dose = 20-25 mg, 30% given s.c. MTX) and 40% were given MTX alone with oral or parenteral steroids. <5% started with biologic therapy, 50% of the first 40 patients received biologic therapy by 12 months. At 6 and 12 months, 29% and 50% of patients met a DAS remission, 2 % and 17% met a SDAI remission, 2.8 % and 21% met a CDAI remission. The mean swollen joint count at baseline was 8.3, at 6 months was 5.2 and at 12 months was 3.8.

Conclusions: These data indicate the proportion of patients reaching remission at 12 months is 50% with fewer reaching an SDAI or CDAI remission. The SDAI or CDAI remission criteria are more stringent.

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SAFETY AND PATIENT-REPORTED OUTCOMES THROUGH 2 YEARS OF TREATMENT WITH ABATACEPT IN RHEUMATOID ARTHRITIS PATIENTS RECEIVING BACKGROUND DISEASE-MODIFYING ANTIRHEUMATIC DRUGS (DMARDS): THE ASSURE TRIAL M. E. Weinblatt, E. Keystone, B. Combe, C. Birbara (Brigham & Womens Hospital, Boston, MA, University of Toronto, Toronto, ON, Immuno-Rhumatologie Hopital Lapeyronie, Montpellier, France, Univ. of MA Medical School, Worcester, MA)

Objectives: To evaluate safety and patient-reported outcomes (PROs), including patient physical function (Health Assessment Questionnaire [HAQ]) and patient global assessments of disease activity and pain (visual analog scale [VAS]), in the ASSURE (Abatacept Study of Safety in Use with other Rheumatoid arthritis [RA] thErapies) trial through 2 years of abatacept treatment.

Methods: During the 1-year, double-blind (DB) phase of the ASSURE trial, patients were randomized to receive abatacept (~10 mg/kg) or placebo on Days 1, 15 and 29, and every 4 wks thereafter. All pts received add-on treatment with 1 or more non-biologic and/or biologic DMARD in the DB period. Patients who completed the DB period entered the open-label (OL) long-term extension (LTE), during which all patients received abatacept (~10 mg/kg) once monthly, in addition to background therapies.

Results: A total of 959 and 482 patients were randomized and treated with abatacept and placebo, respectively, during the DB period. Of these, 800 vs 384, respectively, entered the OL LTE. 1071 (90.5%) patients completed 1 year of LTE. During the OL period, most discontinuations were due to adverse events (3.3%), withdrawal of consent (2.5%) and lack of efficacy (2.4%). Most patients received background non-biologic DMARDs (non-biologic: n=725 vs n=342; biologic: n=75 vs n=42, for patients originally randomized to abatacept vs placebo, respectively). In the OL period, rates of serious AEs (SAEs), serious infections, and malignancies did not appear to increase relative to the rates in the DB period. The rate of malignant neoplasms (DB vs OL: 1.6 vs 0.9/100 patient-years), including lung cancer (DB vs OL: 0.3 vs 0.2/100 patient-years) decreased through the OL. Abatacept-treated patients demonstrated improvements from baseline in all PROs through 2 years of abatacept treatment.

Conclusions: Through 2 years of treatment, abatacept plus background therapies demonstrated a consistent safety profile, with no new signals reported in the OL period. Improvements in PROs were sustained through 2 years of treatment with abatacept. At 2 years, patients in the placebo group who received 1 year of abatacept in the LTE, achieved comparable improvements to the abatacept group.

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INNOVATION IN HEALTH CARE DELIVERY: A NURSE PRACTITIONER CLINIC IN RHEUMATOLOGY Jim Rankin, Terri Lupton, Susan G. Barr, Christopher Penney, Liam Martin (Faculty of Nursing, University ofCalgary, Faculty of Medicine, University of Calgary)

Objectives: To provide a report on a unique and innovative method of health care delivery in Rheumatology.

To describe the institution of a Nurse Practitioner (NP) Rheumatology clinic in Rheumatology with the primary aim of increasing patient access to care and reducing wait-times for Rheumatology patients

Methods: All new referrals to Rheumatology in the Calgary Health Region are sent through a Central Referral and Triage system for Rheumatology (CReATe Rheum). A Nurse Clinician assesses the referrals and triages the patients. Less complex patients are referred to, and seen at, the new NP clinic. The NP clinic is in addition to the clinical services offered through the CReAte Rheum program. The NP works in collaboration with three Rheumatologists.

Results: The clinic began operation in May 2006. Patients are informed when their appointments are booked that they will be assessed by a NP. Up to

September 15th, 2006, 149 new patients have been assessed. The diagnoses in these patients included soft tissue injury, gout and rheumatoid arthritis. The implementation of the NP clinic was, in part, responsible for the reduced wait time for routine patients. Patient response has been very positive towards being seen by a NP. To date no patients booked into this clinic have refused an appointment.

Conclusions: The NP clinic in Rheumatology in the Calgary Hea;th Region is a unique innovative model of health care delivery and collaboration. Patient response to being seen by an NP has been extremely positive. Future plans include expansion of the clinic, and increasing patient referrals by adding another Nurse Practitioner to the team.

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VALIDATION OF MINIMAL DISEASE ACTIVITY FOR RHEUMATOID ARTHRITIS PATIENTS TREATED WITH THE BIOLOGIC THERAPY ABATACEPTGeorge Wells[1], Maarten Boers[2], Tracy Li[3], Peter Tugwell[11]University of Ottawa, Ottawa, Canada; [2]VU University Medical Centre, Amsterdam, Netherlands; [3]Bristol-Myers Squibb, Princeton, NJ.**Objective:** The proportion of RA patients achieving a state of minimal disease activity (MDA) is becoming an important measure for comparing treatments. The objective is to validate two MDA definitions developed at OMERACT 7 (one based on DAS28, the other on the ACR core set) by determining whether being in a state of MDA leads to benefits in terms of functional disability and structural damage.

Method: For each definition, a patient with no tender or swollen joints and ESR =/< 10 is considered to be in MDA; otherwise a patient is considered to be in MDA only if: 5 of the following 7 criteria are met: pain =/< 2, SJC =/< 1, TJC =/< 1, HAQ =/< 0.5, physician global =/< 1.5, patient global =/< 2 and ESR =/< 20 for the core set definition; or DAS28 =/< 2.85.

Two randomized controlled trials in patients with active RA were considered: ATTAIN trial comparing abatacept to placebo on a background of DMARD therapy in anti-TNF therapy failures; and AIM trial comparing abatacept to placebo on a background of MTX. Outcomes assessed included core set measures and DAS28. For each study, the number of patients in the treatment groups that met the definitions was compared. The number of times and first time achieving MDA were determined in the analysis of the AIM study and compared to radiographic scores.

Results: For both studies, significantly greater number of patients in the abatacept group met the core set and DAS-based definition of MDA than the corresponding control group. ATTAIN: ACR core set (10.6% vs 3.1%, p=0.0097), DAS-based (12.6% vs 1.8%, p=0.0007); AIM study: ACR core set (29.0% vs 9.2%, p<0.0001), Das-based (21,9% vs 2.4%, p<0.0001). Change in total radiographic score showed a continual improvement the more often a patient was in MDA. In particular, the change in total score was 1.68, 1.57, 1.25, 0.80 and 0.52 for patients that were in MDA 0, 1, 2, 3, 4 times respectively. Both the erosion and joint space narrowing scores followed this pattern. Similarly, the total score for patients who achieved MDA the first time at 12 and 3 months were 1.19 and 0.73 respectively.

Conclusions: The presence and persistence of MDA was associated with slowing of erosion and joint space narrowing, indicating discriminative and predictive validity. Both MDA definitions discriminated between abatacept and control, with significantly more patients in the abatacept group achieving a state of MDA.

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DEFINING THE BURDEN OF PAGET DISEASE: A CLINICAL AUDIT STUDY

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Objective: Assessing the burden of illness and current management of Paget Disease of Bone (PDB) at Sunnybrook Health Sciences Centre (HSC).

Defining the need for the introduction of additional pharmacologic therapies for the management of PDB to the hospital drug formulary.

Methods: REB approval for chart audit was received from Sunnybrook HSC. Charts of patients diagnosed with PDB were identified through health data records (HDR) and outpatient billing summaries using ICD codes (ICD-10 and ICD-9): *M88, M88.0, M88.8, M88.9, 731, 731.0, 731.1, 731.2, 731.8*. A standardized data abstraction form was used. Variables collected included: demographics, symptoms, lab investigations, imaging, treatment, and outcome. Data was entered into an Excel database and exported into SAS for statistical analysis.

Results : Charts of 97 patients were reviewed. Time frame of chart review was approximately one month. There were 51 males and 46 females, mean age 87.85 years. The ethnic origin of 9 patients was disclosed (1 Asian, 8 Caucasian), the remaining 88 were not specified.

Mean and range of baseline laboratory results were: alkaline phosphatase (ALP) 345.47 U/L (range 40.0-3900.0), alanine transaminase (ALT) 28.07 U/L (range 5.0-310.0), and aspartate transaminase (AST) 34.29 U/L (7.0-195.0). One patient (female, 86yr) had a baseline for urinary pyridinoline (urinary collagen crosslink) 4.10nmol/mmolCr (normal range female post-menopausal: 7.4 .0 nmol/mmolCr). At the time of chart review, 59/97 (60.8%) patients were on no treatment for their PDB and 38/97 (39.1%) were receiving active treatment which included:

Etidronate: 24/97 (24.7%) mean dose 243.75 mg/day for 3 months (range 50-800 mg/day for 3 months)

Alendronate: 7/97 (7.2%) mean dose 32.14 mg/day for 6 months (range 10-70 mg/day for 6 months)

Calcitonin (subcutaneous injection): 4/97 (4.1%) mean 100 units/day

Pamidronate intravenous: 2/97 (2.1%) 3 infusions mean 145 mg/day over 6 weeks

Risedronate: 1/97 (1%) mean 30.0 mg/day for 2 months

Conclusions: The burden of illness from PDB in a major university teaching hospital is low. Oral bisphosphonates are the mainstay of management in the majority of patients requiring treatment. There is minimal requirement for the introduction of new drug treatments for PDB at Sunnybrook HSC.

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EXPECTATIONS FOR RECOVERY AFTER WHIPLASH INJURY: A PROGNOSTIC FACTOR Linda J. Carroll (Department of Public Health Sciences, University of Alberta, Edmonton, Alberta, Canada), Lena Holm (Department of Clinical Neurosciences Karolinska Institutet Stockholm Sweden), Robert Ferrari (Department of Medicine, University of Alberta, Edmonton, Alberta, Canada), J. David Cassidy (Department of Public Health Sciences, Faculty of Medicine, University of Toronto, Toronto, Ontario, Canada)

Objectives: To determine whether early expectations of recovery predict subsequent global recovery after a whiplash injury, using a large, population-based traffic-injury cohort.

Methods: We included all residents aged 18 or older, in Saskatchewan, Canada, who made an injury claim or were treated for a traffic-related whiplash injury between December 1, 1997 and November 30, 1999, and made a claim within 42 days of the injury. After providing consent, participants were followed by structured telephone interviews, which included self-rated global recovery, at six weeks, and three, six, nine and 12 months. We assessed expectations for recovery by asking "Do you think that your injury will" with response options "get better soon; get better slowly; never get better; don't know." Recovery was measured by the question "How well do you feel you are recovering from your injuries?" with response options: 1) "all better" (cured); 2) "feeling quite a bit of improvement"; 3) "feeling some improvement"; 4) "feeling no improvement"; 5) "getting a little worse"; and 6) "getting much worse." We built Cox proportional hazard models to determine the association between expectation for recovery and time-to-recovery.

Results: Of the 8,634 claimants during the two-year inception period, 6,749 met the criteria for whiplash, 6,021 made their claim within 42 days of the injury, and 6 did not answer the expectations question, leaving a study sample of 6,015. Most (41.9%) expected to get better slowly, 24.4% expected to get better soon, 1.9% expected to never get better and 31.8% did not know. After adjusting for confounders, and in comparison with those who expected that they would **Never Get Better** (our reference category), those who expected to **Get Better Soon** recovered over three times as quickly (adjusted

HRR=3.62; 2.55-5.13)); those who expected to Get Better Slowly recovered over twice as quickly (HRR=2.66; 1.88-3.75); and those who **Did Not Know** recovered almost twice as quickly (HRR=1.95; 1.38-2.76).

Conclusion: We found that expectations for recovery was a prognostic factor for speed of recovery, regardless of demographic or socioeconomic factors, prior health, post-injury symptoms, mood and pain intensity.

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EDUCATIONAL INTERVENTION TO IMPROVE PRIMARY HEALTH CARE MANAGEMENT OF ARTHRITIS

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**Partners:[1]Arthritis Community Research and Evaluation Unit, Division of Outcomes and Population Health, TWRI, [2]The Arthritis Society, [3]Sunnybrook Health Sciences Centre, Canadian Rheumatology Association, Arthritis Health Professions Association, Canadian Alliance of Community Health Centre Associations,

Canadian Nurses Association, Ontario Ministry of Health and Long-Term Care, Patient Partners® in Arthritis

Objective: To implement and evaluate a community-based educational program to improve the diagnosis and treatment of rheumatoid arthritis (RA) and osteoarthritis (OA) in primary health care (PHC).

Methods: A taskforce of PHC providers, adults with arthritis, health services researchers and government representatives designed this evidence-based program. The program was based on a successful pilot study and published arthritis clinical practice guidelines (best practice). Nation-wide implementation of the program consisted of 30 accredited workshops, educational toolkits for patients and providers and follow-up reinforcement activities for providers working in PHC sites. Workshop content focused on the pharmacological and non-pharmacological management of OA and RA and was delivered by local arthritis specialists and community partners. Program impact was determined through mailed surveys to providers and patients at baseline and 6 months after the workshop. Primary outcome analysis compared provider recommendations to patients meeting arthritis best practices at baseline and at follow-up. Provider outcomes included their use of arthritis best practices in response to standardized case scenarios, confidence in the assessment and management of arthritis, perceptions of barriers to arthritis care delivery and the impact of the program.

Results: Rural and urban PHC facilities (219) participated in the project; 900 PHC providers attended one of 30 workshops. Participants included: physicians (20%), nurses (37%), rehabilitation therapists (29%) and other providers (14%). Providers (765/789) and patients (931/3419) completed baseline surveys and were resurveyed at 6 months (395 providers; 567 patients). Patients were primarily female (73%) with an average age of 66.5 +/- 3.4 years. The most frequently identified diagnosis was OA (65%). At follow-up, patients reported receiving significantly more recommendations for arthritis best practices from their PHC providers including information regarding arthritis community resources, treatment choices, arthritis self management strategies and healthy weight (in OA) [Chi-Square; $p<0.05$]. Provider confidence in the musculoskeletal exam and initiating disease modifying anti-rheumatic drugs significantly increased at follow-up (Paired t-test; $p<0.01$). Providers indicated the greatest impact in arthritis collaborative care (75%), patient self-management (74%), early detection (65%), access to specialty care (59%) and prevention (53%).

Conclusions: This national evidence-based community educational intervention increased PHC providers ability to deliver collaborative arthritis care and patient self-management. Building strong partnerships between the patient, PHC teams, local specialists and the community improves patient care and support.

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DEFINING THE UNMET NEED FOR CV RISK ASSESSMENT AND MANAGEMENT IN RHEUMATOLOGY PRACTICE THROUGH CHART AUDIT AND CROSS-SECTIONAL SCREENING

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Objectives: To define the unmet need for CV risk assessment and management in rheumatology practice through chart audit and cross sectional screening

Methods:

1.94 ambulatory clinic patients with established RA were identified through clinic database

2. Framingham variables, waist and hip measurements, and drug list were collected at usual follow-up visits

3. 14 hour fasting lab for hsCRP, s.insulin, total cholesterol, LDL, HDL collected

4. Descriptive analyses were performed

Results: Study population: 17 male:74 female; mean age 51.45 years (SD 26.25; range 20–82); 19.15% smoking; Framingham risk assessment mean score 7.03%, range 0.2%–23% CV risk over 10 years; 50.67% elevated LDL; 65.33% elevated total cholesterol.

Conclusions: There is a significant unmet need for CV risk screening and management in rheumatology practice. It is the rheumatologist responsibility to address the propensity to CVD in their RA patients either directly or by advising their primary care provider. Strategies to reduce ASCVD in patients with RA include:

1. Hypertension goal: BP < 130/80 mmHg Method: ACE inhibitors
2. Hyperlipidemia goal: LDL < 2.5 mmol/L, Cholesterol <4.0 mmol/L Method: statins
3. Hyperglycemia goal: maintain normal fasting plasma glucose
4. Smoking cessation: Method: nicotine replacement and formal cessation programs
5. Weight management goal: BMI , 25 kg/m^2
6. Physical activity goal: 30 min/day 3-4x/week

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CORTICOSTEROIDS IN CHIKUNGUNYA VIRAL POLYARTHRITIS IN TWO CANADIAN TRAVELERS

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Chikungunya fever is caused by the Chikungunya virus (CHIKV), an arthropod-borne RNA virus (genus Alphavirus, family Togaviridae). CHIKV is endemic to areas in Africa, Asia and the Indian Ocean, with on-going epidemics in India since April 2006, and several Indian Ocean islands since March 2005.[1] It is transmitted to humans by the bite of infected mosquitoes, primarily the Aedes aegypti and Aedes albopictus species.[2] Epidemics are sustained by human-mosquito-human transmission. Human-human transmission is not known to occur. Eighteen (18) cases were serologically confirmed in Canadian travelers in 2006, with the majority occurring in those returning from the aforementioned endemic areas.

Symptoms of infection, which generally last 3-7 days, include sudden onset of fever, malaise, headache, myalgias and severe arthralgias/arthritis. A maculopapular rash occurs in up to 77% of patients.[3] Residual arthritis, with swelling and morning stiffness, may persist for weeks to months, mimicking rheumatoid arthritis. Approximately 12% of patients have chronic joint symptoms for more than 3 years post-infection.[4] There has been at least one report of a destructive arthropathy following CHIKV infection.[5]

There is no vaccine or antiviral agent available for CHIKV. Treatment is primarily supportive with fluids, rest, NSAIDs and other analgesics. In one study, chloroquine sulphate provided significant improvement in patients with chronic CHIKV arthritis.[6]

We present 2 cases of CHIKV polyarthritis in Canadian travelers, confirmed by hemagglutination inhibition serology. The first patient, a 59-year-old man returning from Mauritius, presented in April 2006 with symmetric polyarthritis involving the wrists/MCP /PIP , ankles/MTP , and enthesitis at the insertion of the Achilles tendons. He had developed symptoms of infection about two months earlier, and was referred after failing to respond to NSAIDs. He received intramuscular methylprednisone with prompt improvement. This was followed by hydroxychloroquine and low-dose prednisone, with the latter being weaned off in 6-8 weeks.

The other patient, a 55-year-old man, developed symptoms in October 2006 while in China. He presented after 3 months of symptoms with similar symmetric polyarthritis and synovitis. Interestingly, serology demonstrated co-infection with CHIKV and Dengue virus, which is known to occur. He was started on prednisone and is currently awaiting reassessment.