PODIUM PRESENTATIONS

1

SEROLOGICAL BIOMARKERS OF CARTILAGE DEGRADATION/TURNOVER ARE ASSOCIATED WITH INCREASED RADIOGRAPHIC DAMAGE IN ANKYLOSING SPONDYLITIS Anna E. Oswald, Stephanie O. Myckatyn, Barbara Spady, Lori Heibert, Walter P. Maksymowych (Division of Rheumatology, University of Alberta, Edmonton, Alberta, Canada)

Objective: To evaluate whether serological biomarkers of cartilage damage/turnover, disease activity, and presence of peripheral disease are associated with radiographic damage in a cohort of patients with ankylosing spondylitis (AS).

Methods: Follow up Research Cohort of Ankylosing Spondylitis study (FORCAST) is a prospective cohort of subjects with AS, meeting modified New York criteria, that recruits consecutive patients. Data is collected regarding demographics, presence of peripheral disease, the Bath AS Disease Activity Index (BASDAI), C-reactive protein (CRP), as well as cartilage degradation/turnover biomarkers, matrix metalloproteinase-3 (MMP-3) and human cartilage glycoprotein-39 (YKL-40). Radiographs are obtained on entry to the study and are scored according to the modified Stoke Ankylosing Spondylitis Score (mSASSS) method by a single rheumatologist. Multiple regression analysis was used to assess for associations of BASDAI, CRP, MMP-3, YKL-40, and presence of peripheral disease on radiographic structural damage as measured by the mSASSS adjusted for age and disease duration.

Results: 49 subjects were enrolled in the study, of whom 72.9% were male and 40.8% had evidence of peripheral disease. Descriptive characteristics are listed in the table below. MMP-3 was a significant predictor of mSASSS adjusted for age (p=0.004) and disease duration, (p=0.021). MMP-3 explained 33% of the variance in mSASSS when adjusted for age and 36%of the variance in mSASSS when adjusted for disease duration. YKL-40 was not a significant predictor of mSASSS when adjusted for age (p=0.072) or disease duration (p=0.061). CRP, BASDAI and presence of peripheral disease were not significant predictors of radiographic damage.

Conclusions: Increased level of serum cartilage degradation biomarker MMP-3 is associated with worse radiographic damage scores. This association will be examined further in patients demonstrating radiographic progression over time.

2

ASSOCIATION BETWEEN SERUM TOTAL CHOLESTEROL AND RENAL OUTCOME IN SYSTEMIC LUPUS ERYTHEMATOSUS Annaliese Tisseverasinghe, Sooyeol Lim, Celia Greenwood, Murray Urowitz, Dafna D Gladman, Paul R Fortin (Queen's University, Genetics and Genomic Biology, Hospital for Sick Children, University of Toronto Lupus Clinic, Centre for Prognostic Studies in the Rheumatic Diseases, Toronto Western Hospital, Arthritis Centre of Excellence, University Health Network Research Institute, University of Toronto)

Objective: To determine if elevated total cholesterol [TC] at presentation to a lupus clinic is associated with worse renal outcome in persons with systemic lupus erythematosus [SLE].

Patients and Methods: Survival analysis methods were employed on data prospectively collected on 1060 SLE patients registered in the University of Toronto Lupus Databank, using the first random serum TC recorded as predictor variable and date of its measurement as zero time [t0]. Outcomes of interest were renal deterioration [RD] (20% increase from an abnormal value, change to abnormal range, or doubling of serum creatinine [sCr]; sustained for ≥ 6 months), end-stage renal disease [ESRD] (sCr ≥ 200µmol/L for ≥ 6 months, dialysis, or transplant), and death. For exploratory analyses, patients were stratified into low versus high TC groups (cut-off=5.2mmol/L), and the difference between their Kaplan–Meier outcome-free survival estimates was tested using the log rank test. Final Cox proportional-hazard models were constructed using TC and stepwise selection of the following variables: age, gender, race, SLE duration, sCr, proteinuria, hypertension, diabetes, prednisone dose, cytotoxics and antimalarials use, at t0; SLICC and extra-renal SLEDAI, as of t0; and, education, and access to ACE-Inhibitors, at last follow-up. Similar analyses were performed on an inception cohort of 524 patients, defined as those seen within one year of their SLE diagnosis.

Results: Population characteristics: at t0, [mean (range) or n (%)] age 36 years (10-84); female 936 (88%); Caucasian 822 (78%), Black 89 (8%), Asian 84 (8%); SLE duration 4 years (0-40); SLICC 0.3 (0-7); extra-renal SLEDAI 7 (0-40); TC 5.3mmol/L (1.6-17.1) and >5.2mmol/L 474 (45%); sCr 89.7mmol/L (39-1313); proteinuria 203 (19%); hypertension 259 (24%); diabetes 24 (2%); at last follow-up, 57% were college/university-educated. Mean follow-up: 8.8 years (0-31). Outcomes: 93 (9%) experienced RD, 42 (4%) had ESRD; 161 (15%) were deceased (48 (30%) had renal involvement at death and 113 (70%) did not). Survival Analyses: For entire and inception populations, Kaplan-Meier survival estimates for each outcome were statistically different between low versus high TC groups (all P<0.02), with lower event-free survival in the latter. In multivariate analyses, TC (HR=1.17;CI=1.01-1.36), sCr (1.01;1.00-1.01), proteinuria (2.44;1.25-4.76), SLICC (1.44;1.16-1.80), and steroid dose (1.01;1.00-1.02) comprised the best explanatory model for RD. Similarly, a significant association between cholesterol and ESRD was observed: TC (HR=1.20;CI=1.06-1.37), sCr (1.01;1.01-1.01), and Asian origin (3.75;1.40-10.04). While TC may increase the risk of death (HR=1.11;CI=0.99-1.25), the effect was statistically significant for "renal" (1.38;1.18-1.63), but not "non-renal" death (0.98;0.83-1.15). Baseline sCr was significant for renal death only, while extra-renal SLEDAI and age at t0 were significant for non-renal death. Similar results were obtained for inception cohort regarding RD and renal death, but Cox models were not fitted on ESRD due to insufficient ESRD frequencies.

Conclusions:An elevated TC at presentation to the clinic is associated with adverse renal outcomes and mortality in persons with SLE. Further studies examining hypercholesterolemia over time are necessary to elucidate whether this finding is a chance association or whether persistent hypercholesterolemia is predictive of adverse renal outcomes and thus could have pathogenic and clinical implications.

3

DETERMINATION OF THE MINIMAL CLINICALLY IMPORTANT DIFFERENCE IN FATIGUE MEASURES FOR RHEUMATOID ARTHRITIS Raheem B Kherani, Matt H Liang, Diane Lacaille, Jacek Kopec, Stephanie Ensworth, Allen J Lehman, Rollin Brant, Jacques Pouchot (Arthritis Research Centre of Canada, Division of Rheumatology, University of British Columbia, Vancouver, BC, Canada, Division of Rheumatology, Immunology, and Allergy, Brigham & Women's Hospital and Havard Medical School, Boston, MA, USA, Arthritis Research Centre of Canada and Department of Educational Studies, University of British Columbia, Vancouver, BC, Canada, University of Calgary, Calgary, AB, Canada, Department of Internal Medicine, Hôpital Louis Mourier, Université Xavier Bichat–Paris VII, Paris, France)

Background: Fatigue is one of the most common symptoms in patients with rheumatoid arthritis (RA) and is a major source of diminished quality of life. To improve its management and treatment, measurement tools that capture the patient's experience are needed.

Objectives: To estimate the minimal clinically important difference (MCID) of six measures of fatigue in RA from the patient's perspective.

Methods: Six self-administered questionnaires were studied: Fatigue Severity Scale (FSS), Vitality Scale of the MOS-SF36 (VT), Multidimensional Fatigue Inventory (MFI), Multidimensional Assessment of Fatigue (MAF), Functional Assessment of Chronic Illness Therapy - Fatigue (FACT), Chalder Fatigue Scale (CFS), and a global assessment of fatigue Visual Analogue Scale (VAS). The technique of Jaeschke and Redelmeier was used. Patients with RA were recruited through rheumatologists affiliated with the Arthritis Centre. All subjects participated in a meeting with 6 to 8 subjects. Patients completed six fatigue questionnaires and then participated in 5 one-on-one interviews of 15 minutes each to discuss their fatigue. After each interview, each patient compared their fatigue to the other's fatigue. Their ratings were compared to the scores of the fatigue measures to estimate the MCID.

Results: 61 patients (2 adults with polyarticular juvenile idiopathic arthritis) participated. Patient demographic and disease information included: mean age 62.1 ± 14.8 years (28.2 - 87.8); women 52 (85%); disease duration 20.2 ± 14.4 years (0.6 - 65.3); HAQ 1.2 ± 0.8 (0 - 3) (median 1.3); disease activity (self-reported) 4.3 ± 2.3 (0 - 10) (median 4.0).

MCID for fatigue instruments

Instrument	Normalized score (SD)	MCID for Worsening (Same to Bit More Fatigue)	MCID for Improvement (Same to Bit Less Fatigue)
FSS	61.5 (26.2)	6.6	16.7
VT	54.1 (21.0)	11.3	11.9
MAF	49.1 (23.7)	10.4	17.4
MFI	50.1 (20.7)	8.6	12.0
FACT	43.5 (20.3)	13	10.1
CFS	48.3 (17.6)	4.4	10.5
VAS	51.1 (26.7)	9.1	15.1

Conclusion: The MCID for the six fatigue instruments in RA are determined and are quantitatively different than ones observed for systemic lupus erythematosus patients (data not shown). This data will help to estimate sample size in future clinical trials using fatigue as a primary outcome.

4

RISK FACTORS FOR ENDOTHELIAL DYSFUNCTION IN SYSTEMIC LUPUS ERYTHEMATOSUS Mandana Nikpour, Murray Urowitz, Dafna Gladman, Dominique Ibanez, Paula Harvey, Robert Iwanochko (University of Toronto Lupus Clinic and Division of Cardiology, Toronto Western Hospital, University Health Network)

Background: There is evidence that endothelial dysfunction precedes atherosclerotic coronary artery disease (CAD). Brachial artery flow-mediated vasodilation (FMD) measured using high-resolution external vascular ultrasound is a validated method for the assessment of systemic endothelial function. SLE is associated with premature CAD. It is postulated that in SLE endothelial dysfunction is a precursor to CAD.

Aim: To determine the prevalence and risk factors for endothelial dysfunction in women with SLE without clinical CAD.

Method: This was a prospective study of 92 women with SLE, excluding those with clinical CAD or major co-morbidities. Patients underwent clinical evaluation including assessment of disease activity, treatment and cardiovascular risk factors. Brachial artery endothelium-dependent (post-ischemic reactive hyperemia; FMD) vasodilation was measured using high-resolution vascular ultrasound. Reduced FMD was defined as <6.6% increase from baseline diameter following the hyperemic stimulus. This value was based on mean minus 1SD FMD measured in 15 healthy pre-menopausal women studied under identical experimental conditions.

Results: 21(22.8%) patients had reduced FMD. Older age (50.7 ± 10.9 vs 43.2 ±12.1 years, p=0.02) and menopausal status (71.4% vs 35.2%, p=0.003) at the time of study as well as hypertension (BP >140/90 mmHg on three or more occasions or use of anti-hypertensives) in the three years prior to study (57.1% vs 31.0%, p=0.04) were significantly associated with reduced FMD. Disease duration, SLEDAI-2K at presentation or at time of study and AMS (Adjusted Mean SLEDAI-2K; a summary of disease activity over time) were not significantly associated with reduced FMD. Other factor such as cholesterol level, homocysteine, CRP, smoking, lipid lowering and hormone replacement therapy at the time of study were not associated with reduced FMD.

Conclusion: This study has identified hypertension as a significant and potentially treatable risk factor for endothelial dysfunction in SLE. Other significant risk factors were older age and menopausal status. Lupus-related factors such as disease activity were not significantly associated with abnormal FMD. Overall this study indicates that while the disease itself has previously been shown to be one of the strongest risk factors for CAD in SLE, conventional risk factors, in particular hypertension may play an important role in the genesis of the earliest endothelial changes that may precede atherosclerotic plaque formation.

5

TOLL-LIKE RECEPTOR 4, ALX4 AND TGF-ß; POLYMORPHISMS IN ANKYLOSING SPONDYLITIS Tara Snelgrove, Lynette Peddle, Sean Hamilton, Proton Rahman (Memorial University)

Objective: We set out to examine Toll-like receptor 4 (TLR4), Aristaless-like homeobox 4 (ALX4) and Transforming growth factor–beta (TGF-ß) polymorphisms association in a founder population. TLR4, located on chromosome, plays an important role in the initiation of cellular innate immune responses. TLR4 can activate nuclear factor-B, induce expression of inflammatory cytokines and co stimulatory molecules, and is associated with susceptibility to gram-negative septic shock. ALX4is a transcription factor located on chromosome 11 and has been linked to Ankylosing spondylitis (AS) through genome-wide scans. Furthermore, a study by Sims et al. (2004) has shown that ALX4 is linked to BASDAI scores and age of onset of AS. This protein is thought to be involved in skull and limb development. The TGF-ß; gene, located on chromosome 19, is involved in the inflammatory response, tissue fibrosis and bone remodeling. In a recent study, a genome wide scan showed an increased probability of association of TGF-ß; in AS. (Jaakola et al., 2004). Given their role in the immune system and location, these three genes are potential candidates in AS.

Methods: All patients with AS met the modified New York Criteria and the controls were ethnically matched. A Newfoundland cohort of 101 AS patients and 100 ethnically matched controls were genotyped for 2 SNPs in TLR4, 3 SNPs in TGF-ß; and 2 SNPs in ALX4 using the Sequenom MassArray platform.

Results: The minor allele frequencies for the candidate genes are presented below with the uncorrected p-value.

Gene	SNP	AS Cases	Minor Allele Freq. (%)	Controls	Minor Allele Freq. (%)	P value
TLR4	299 (G)	100	7.5	98	2.55	**0.03**
	399 (T)	101	7.4	100	3.0	0.07
TGF-ß	1800471 (C)	98	8.7	100	6.5	0.45
	1800468 (A)	101	8.9	100	11.5	0.41
	1800469 (T)	99	30.3	99	36.9	0.20
ALX4	3802805 (T)	101	34.6	100	27.0	0.10
	3824915 (G)	93	33.9	97	25.8	0.09

Conclusion: A novel association was noted between TLR4 299 and AS and a trend was noted for TLR4 399 in AS. This finding is of interest given the proposed function of TLR's and should be validated in a larger sample set with more SNPs so that haplotypes can be generated.

6

LOW DOSE INFLIXIMAB IN ANKYLOSING SPONDYLITIS: EFFICACY AND SAFETY DURING A 4-YEAR FOLLOW-UP OF A PROSPECTIVE OBSERVATIONAL INCEPTION COHORT Stephanie Myckatyn, Cathy Mallon, Anthony Russell, Walter P Makysmowych (Division of Rheumatology, University of Alberta, Edmonton, AB)

Objective. We previously reported on the efficacy and tolerability of a 3 mg/kg dose of infliximab over 14 weeks in a prospective observational inception cohort of patients with nonsteroidal anti-inflammatory drug-refractory AS. We now report efficacy and safety data on this cohort after a 4-year follow up period.

Methods. All consecutive patients with AS starting infliximab therapy at 3 mg/kg IV at 0, 2, and 6 weeks and q 2 months between April 2000 and October 2004 were included. Data were systematically collected at baseline, 14 weeks, and every 6 months thereafter to 4 years or withdrawal. Data included demographic characteristics, Bath AS indices, adverse events, and reasons for withdrawal. Laboratory measures included erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP.

Results. Thirty-four patients (m:f = 26:8), mean age 44.9 years (range 27 - 70), mean disease duration 17.1 years (range 7 - 30), were studied, 17 had active peripheral synovitis at baseline. Fourteen (14) patients discontinued infliximab (mean time to discontinuation 165 days (range 14 – 462 days)): 6 for adverse events (osteomyelitis, delayed hypersensitivity, anaphylaxis and severe infusion reaction; 5 patients at 3 mg/kg q 8 weeks & 1 patient at 3 mg/kg q 6 weeks), and 6 for lack of efficacy (5 patients at 3 mg/kg q 8 weeks & 1 patient at 6 mg/kg q 4 weeks).Two (2) patients were lost to follow-up (1 at 3 mg/kg q 8 weeks & 1 at 5 mg/kg q 6 weeks). Twenty (20) patients are currently receiving infliximab, 15 at the lower dose of 3 mg/kg q 8 weeks, 3 at 3 mg/kg q 6 weeks, 2 at 5 mg/kg q 8 weeks. Five patients (15%) required dose escalation from 3 mg/kg q 8 weeks to q 6 weeks [(median 787 days (range 451 – 1431), 1 patient discontinued at 451 days)], 2 patients (5.9%) increased to 5 mg/kg q 8 weeks, 1 patient (2.9%) increased to 5 mg/kg q 6 weeks (discontinued after 6 doses), and 1 patient (2.9%) increased to 6 mg/kg q 8 weeks then q 4 weeks then discontinued at 465 days. Twenty patients (59%) stayed at 3 mg/kg q 8 weeks (6 eventually stopped infliximab). There were no significant differences in baseline characteristics between patients requiring dose escalation versus low dose infliximab. Duration of treatment for all thirty-four patients ranged from 14 to 1648 days, mean duration for the twenty active patients was 1088 days (range 86 - 1648). Improvement in BASDAI and BASFI was maintained over the 4-year time period. Complete remission in joint disease was seen in the same 8 patients at 1 and 2 years.

Conclusion. Infliximab continues to be efficacious, well-tolerated and safe for peripheral and axial disease in AS at doses lower than those currently recommended for AS. No significant differences in baseline characteristics were found between patients at low versus higher dose infliximab.

POSTER PRESENTATIONS

1

THE EPIDEMIOLOGY OF SELF-REPORTED FIBROMYALGIA IN CANADA James +McNally, Doug Matheson, Volodko Bakowsky (Dalhousie University, Halifax, Nova Scotia, Emergence Consulting, Manotick, ON, Division of Rheumatology, Department of Medicine, Dalhousie University, Halifax, Nova Scotia)

Objective: To carry out the first Canadian-based, large-scale descriptive epidemiological study of Fibromyalgia (FM). The prevalence of FM, disease incidence, and its association with a variety of socioeconomic, geographical, and behavioural determinants of health was investigated.

Methods: Data from the Canadian Community Health Survey (CCHS), a cross-sectional survey conducted in 2000-2001 was obtained from Statistics Canada. CCHS respondents were asked many health questions, including whether they had certain conditions that had or were expected to last 6 months. Based on the survey responses, FM prevalence rates (and corresponding 95% confidence intervals) were calculated by population characteristic. Annual FM incidence rates were calculated using age at diagnosis data.

Results and Interpretation: The overall prevalence of FM in Canada was 1.1%, with a rate for women (1.8%) six fold higher than for men (0.3%). The prevalence in women increased with age, reaching a maximum of 4.2% in those 60 to 64, declining thereafter. Age at diagnosis data demonstrated only a negligible number of new FM diagnoses in the 5 years preceding data collection in those individuals over the age of 60. Calculated incidence rates revealed a rate of 10 cases per 10, 000 per year for those aged 25 to 29 and an average of 0.8 additional diagnoses per year of advancing age. Demographic data showed similar FM rates (2%) for middle aged women in all Canadian regions, except Quebec where the rate was 1.1%. Further analysis demonstrated that rates varied more by region than language (1.8% for Quebec francophones, 3.3% for non-Quebec francophones, 3.4% for non-Quebec non-francophones). Analysis according to socioeconomic status indicated higher FM reporting with lower income levels (lowest quartile, 3.4%; highest quartile, 2.2%). Lower levels of education were not associated with higher prevalence rates. Finally, although no statistically significant differences in FM rates were apparent between any of the smoking or drinking subgroups, a significant positive association between BMI and FM was apparent. Prevalence rates rose progressively with higher BMI levels; 2.1% in middle aged women with a BMI of less than 24, increasing to 4.1% in those with a BMI over 30. Although existing literature describes FM as a disorder predominantly affecting middle aged and elderly women our findings clearly show that it affects all age groups. The very low rate of new diagnosis in the elderly explains part but not all of the apparent decline in prevalence in older women. Other possible contributors to the relatively low rate in seniors include diagnostic or reporting differences and/or increased remission rates in this age group. The identification of lower FM rates in Quebec, independent of language, suggests a greater role for environment, relative to genetics and culture, in the etiology of FM. Finally the lack of an association between FM prevalence rates and education, despite the inverse relationship observed between income and FM prevalence, suggests that lower income may be an effect rather than a causal factor.

2

THE QUALITY OF MY LIFE (QOML) QUESTIONNAIRE: THE MINIMAL CLINICALLY IMPORTANT DIFFERENCE (MCID) IN PEDIATRIC RHEUMATOLOGY PATIENTS Grace WK Gong, Helen Dempster, Michelle Porepa, Nancy Young, Brian Feldman (Hospital for Sick Children, Toronto, Ontario, University of Toronto, Toronto, Ontario, University of Toronto and Hospital for Sick Children, Toronto, Ontario)

Objectives: The objectives of this study were to:

(1) establish the construct validity of the "Quality of My Life" (QOML) questionnaire

(2) determine the "Minimal Clinically Important Difference" (MCID) for the global measures - "Quality of Life" (QOL) and "Health-Related Quality of Life" (HRQOL)

(3) determine the concordance between parent and child responses to the QOML questionnaire.

Methods:136 families of consecutive pediatric rheumatology clinic patients at the Hospital for Sick Children were interviewed. Eligible respondents included 1 parent representative from each family, and each patient aged 10 years and older. Each respondent was asked to complete the QOML questionnaire after considering 3 separate scenarios: child's current state of health, and situations in which there is a hypothetical small improvement and hypothetical small deterioration in health respectively. The MCID scores for each respondent were determined by calculating the difference between original QOL and HRQOL scores and hypothetical improvement and deterioration scores respectively.

Results: The QOML questionnaire was valid in this population. Moderate to strong negative correlations were established between QOL and pain (r= -0.745, p</= 0.0001), and between QOL and disease severity (r= -0.659, p</= 0.0001). Similarly, negative correlations were found between HRQOL and pain (r= -0.648, p</= 0.0001), and between HRQOL and disease severity (r= -0.524, p</= 0.0001). The median MCID on the visual analogue scale for improvement in QOL was determined to be 2mm, and 6mm for HRQOL. The median MCID on the visual analogue scale for deterioration in QOL was determined to be 13mm, and 14 mm for HRQOL. Child-rated QOL was found to be significantly higher than parent-rated QOL (p=0.0002).

Conclusions: This study shows the QOML questionnaire to be a valid measurement tool for QOL and HRQOL in patients with juvenile arthritis. The MCID scores for improvement and deterioration should be considered separately rather than pooling them together. Determination of MCID scores for QOL and HRQOL places QOML scores in a meaningful context for clinicians. The difference in parent-child responses to the QOML questionnaire should also be taken into account.

3

LUPUS ENTEROPATHY Jill Wong, Eric Yoshida, Silvia Chang, Henry Chung, Hugh Freeman, Urs Steinbrecher, Graham Reid, John Watterson, Stephanie Ensworth (Univ. of British Columbia)

Purpose: Gastrointestinal (GI) manifestations are common in patients with systemic lupus erythematosus (SLE) and can mimic any type of abdominal condition. Intraabdominal vasculitis resulting in ischemia and infarction of the intestine has been reported to be the most common and severe manifestation. Bowel ischemia in SLE has a poor outcome with a mortality rate of up to 53%, which has encouraged early surgical intervention. In this report, we describe our experience in 6 patients with active SLE who presented with GI symptoms related to intestinal involvement which were not secondary to vasculitis.

Methods: The medical records of 6 consecutive patients with SLE who presented to a tertiary care center gastroenterology service between 1994 and 2004 were reviewed.

Results: All patients fulfilled the American College of Rheumatology criteria for SLE. The patients ranged in age from 18 to 40 years. Two patients developed GI symptoms prior to the diagnosis of SLE, while 4 developed GI symptoms 0 to 6 years after diagnosis of SLE. All 6 patients were female and of Asian descent (Japanese, Chinese, Korean, or Philippine). All had symptoms of GI disease including abdominal pain, nausea, vomiting, bloating and diarrhea. All patients had hypoalbuminemia and laboratory evidence of active SLE at the time of presentation with GI symptoms including elevated anti-dsDNA antibodies and decreased complement levels. Stool cultures were negative. CT abdominal imaging revealed small bowel wall thickening in 4 patients, ascites in 5, and dilated bowel loops in 4. Abdominal angiography was performed in 3 patients and all were normal. Small bowel biopsies in 5 patients revealed non-specific inflammation with no evidence of vasculitis. Treatment in all cases included a combination of bowel rest, corticosteroids, and azathioprine or mycophenylate. Symptoms resolved in all cases; however similar symptoms recurred in 2, who again responded to the same management.

Conclusions: CT features of mesenteric vasculitis include dilated bowel loops, ascites, bowel wall thickening, engorgement of mesenteric vessels, and increased attenuation of mesenteric fat. These features are non-specific. The patients in this series, who were all Asian females, had some of these features on abdominal imaging; however they had a better outcome than previously reported patients with mesenteric vasculitis and did not require surgical intervention. Moreover, treatment with tapering prednisone and azathioprine was effective and they did not require cyclophosphamide. Their clinical presentation was diverse, including protein-losing enteropathy in all cases, pseudo-obstruction in 2, and abdominal pain in 5. Thus, abdominal pain is not always the only presenting feature of lupus enteropa-

thy and the etiology can't always be assumed to be ischemia. Characterization and recognition of this non-vasculitic SLE associated enteropathy is important because potentially toxic therapy and unnecessary surgical intervention can be avoided.

4

RITUXIMAB IN SEVERE, ACTIVE RA: EFFICACY AND SAFETY AT 2 YEARS FOLLOWING A SINGLE TREATMENT COURSE Paul Emery, T Sheeran, Boulos Haraoui, PB Lehane, N Saiedabadi, TM Shaw (Leeds General Infirmary, Leeds, UK , Cannock Chase Hospital, Cannock, UK , CHUM, Hôpital Notre-Dame, Montréal, Canada, Roche Products Ltd, Welwyn Garden City, UK)

Objective: Efficacy of rituximab in RA following a single course of treatment showed significant improvement in outcome measures at 24 and 48 weeks; We report the results of the double-blind 2-year extension .

Methods: 161 patients with an inadequate response to methotrexate (MTX) and long standing (mean 10.4 yrs) severe and active disease (mean DAS 6.9) were randomized to 4 treatment groups: Continuing MTX; rituximab (RTX); RTX plus cyclophosphamide (CTX); RTX plus continuing stable MTX. All groups received a 17 day course of corticosteroids. RTX (1 g) or placebo was administered as an i.v. infusion on Days 1 and 15. No further treatment with RTX was given to this cohort of patients during the 2 years and treatment groups remained blinded to investigators and patients. ACR response was determined for the ITT population using a non-responder analysis. Safety data were collected throughout this extended period.

Results: More patients completed the 2 years in the MTX + RTX arm compared with MTX control (18/40 [45%] versus 6/40 [15%]) reflecting fewer withdrawals for Lack of Efficacy and entry into the Retreatment protocol. During the study, 45% of patients in the RTX+MTX group achieved an ACR70 response compared to only 17% in the MTX group (mean duration 109 days vs 33 days). At Week 104, twice as many of the remaining patients in the RTX+MTX group (8/40 [20%] versus 4/40 [10%]) achieved ACR50 whilst 33% achieved ACR20, compared to 13% on MTX alone. A major clinical response (ACR70 maintained for ≥ 6 months) was achieved by 13% of patients in the RTX+MTX group versus none in the control group. No significant differences in infections between treatment arms were noted and immunoglobulin levels and anti-tetanus titres were maintained At study completion, peripheral B cells returned to within normal ranges in 38% of the remaining patients in the RTX+MTX group. There was no apparent correlation between B cell depletion and the overall incidence or severity of adverse events.

Conclusions: A single treatment course of rituximab in combination with methotrexate produced a substantial duration of response in patients with active RA over 2 years. All three rituximab regimens were well tolerated with preserved levels of immunoglobulins and anti-tetanus titres over 2 years.

Disclosure: P. Emery, received grant support from F. Hoffman-La Roche; T. Sheeran:Nothing to declare; B. Haraou:Nothing to declare; P. B. Lehane, N. Saiedabadi and T. M. Shaw : Roche employees

5

HOW SYSTEMIC LUPUS ERYTHMATOSUS PRESENTS IN PATIENTS WITH SICKLE CELL DISEASE? Mustafa H. Al-Maini, Salam Al-Kindi, El-Nour Al-Ajeb (University of Toronto, Toronto, ON, Canada, Sultan Qaboos University, Muscat, Oman, Sohar Hospital, Sohar, Oman)

Background and Objective: The coexistence of Sickle Cell Disease (SCD), a genetic disorder of hemoglobin usually presenting early in life, with Systemic Lupus Erythematosus (SLE) has been reported. Since both diseases share similarity of the clinical manifestations and laboratory abnormalities during their course, it is important to detail the manifestations in patients thought to have both conditions. We report the presenting symptoms of six patients with SCD and SLE, the overall organ involvement and the laboratory findings.

Method: From existing database, we identified the patients who fulfilled ACR criteria for SLE and have coexistence diagnosis of SCD between January 1994 and January 2000 at Clinical Immunology and Rheumatology Unit at Sultan Qaboos University Hospital in Oman. Presenting symptoms of SLE, complications from both diseases and laboratory data were recorded.

Results: Six Arab patients (2 males; 4 females) between ages 18-29 year were found to have SLE and SCD. The initial presenting manifestations can be divided as follow: Three (one male and two females) presented with new onset arthritis (50%), which is distinct from the usual pain of SCD crisis. Two female patients presented with increase frequency of vaso-oclusive crisis (33%), and one male patient presented with hemolytic anemia (17%). The time between presentation and diagnosis ranged from 3-10 months and can be subdivided as follow: longer period (mean 9 months) in patients with new onset arthritis and shorter period (mean 3 months) in patients with increased frequency of vaso-oclusive crisis. At presentation, all patients had positive ANA. Anti DNA antibodies and anticardiolipin antibodies were each detected in 50% of the patients. During the course of the disease (follow up time: range 1-10 year and mean of 5 year) they have the following: Malar rash 67%, Discoid rash 0%, Photosensitivity 33%, Oral ulcers 0%, Arthritis 83%, Serositis 0%, Renal disorder 50%, Neurological disorder 17%, Hematological disorder 50%, Immunological disorder 83%. Hypocomplementemia was present in all patients with renal disorder. Finally, the treatment given consists of the following: Hydroxychloroquine 83%, Prednisone to 67%, Azathioprine 67%, Cyclophosphamide 33%, and Methotrexate in 17%.

Conclusion: SCD patients are not immune from autoimmune diseases like SLE. New onset arthritis and increased frequency of vaso-oclusive crisis should alarm the physicians to look for alternative disease process. We recommend screening all SCD patients using a validated SLE questionnaire and ANA. We are currently conducting a prospective study using the above parameters to screen all SCD patients for SLE.

6

CANCER SCREENING IN LUPUS PATIENTS: NO EVIDENCE OF SURVEILLANCE BIAS Sasha Bernatsky, Ann Clarke, Glinda Cooper, Christopher Mill, Rosalind Ramsey-Goldman , Christian Pineau (Montreal General Hospital, NIH, Durham, N. Carolina, Northwestern University, Chicago, Ill)

Patients with systemic lupus erythematosus (SLE) may have an increased risk of certain malignancies. Some have postulated that this is related to a surveillance bias, whereby SLE patients get more cancer screening tests. However, no studies to date have examined the frequency of cancer screening in SLE. In fact, because of the acute nature of care often provided to SLE patients, screening for diseases such as breast and colorectal cancer may be inadvertently over-looked. Objectives: Our primary objective was to determine whether SLE patients undergo cancer screening (colorectal exams and mammograms) according to established guidelines. Our secondary objectives were to compare with figures from the general population: i) The percentage of SLE subjects who had recommended colorectal screening; and, ii) The percentage of women with SLE who had recommended mammography screening.

Methods: We conducted a survey of cancer screening practices reported by patients registered in the Montreal General Hospital lupus cohort. We compared the self-reported frequency of cancer screening for colorectal and breast cancer to the guidelines suggested for the general population. Breast cancer screening was assessed according to guidelines recommended by the Canadian Task Force on the Periodic Health (annual mammography for women ages 50 – 69 years). Colorectal cancer screening was assessed according to the 2001 Canadian Task Force on Preventive Health Care, which recommends yearly fecal occult blood testing or periodic sigmoidoscopy or colonoscopy in individuals older aged 50 and older.Results: Of the sample of 94 respondents, 84 were females. The median age of the entire group (N=94) was 44 years (average age 43.9, SD 15.0 years). Regarding colorectal cancer, none of the respondents had a personal history of past colorectal cancer; eight of the respondents (8.5%) had a family history of colorectal cancer. Of these eight, only two reported having had appropriate screening in the past 5 years. Of the subjects aged 50 and older (N=34), only 17.7 % (95% CI 8.4, 33.5) reported screening within the recommended time frame. This compares with a figure of 41.1% (40.4, 41.8) for the report of colorectal screening practices within the recommended time period, for persons >50 in the general population.Regarding breast cancer, among the 84 women, three reported a past history of breast cancer; all of these reported having a mammogram in the past 12 months. In the sample, three women reported a family history of breast cancer; of these, 2 had had a mammogram in the past 12 months. Of the 28 women aged 50-69, 15 (55.6%, 95% CI 35.8, 75.0) had had a mammogram in the past 12 months. This compares to a figure of 74.2% (95% CI 73.3, 75.0) for similarly aged Quebec women reporting yearly mammograms. Conclusions: These data do not provide evidence of a "surveillance bias" (i.e., increased cancer screening) among SLE patients. Rather, these data suggest that appropriate screening for colorectal and breast cancer may be inadvertently over-looked in SLE.

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A PILOT STUDY ON THE MEASUREMENT AND DETERMINANTS OF THE QUALITY OF LIFE (QOL) IN PEDIATRIC RHEUMATOLOGY PATIENTS Grace WK Gong, Sarah Lord, Shashi Bhat, Maru Barrera, Unni Narayanan, Manuel Carcao, Nancy Young, Lillian Sung, Joseph Beyene, Brian Feldman (Hospital for Sick Children)

Objective: To evaluate a novel method of measuring "Quality of Life" (QOL) based on the conceptualization of QOL as the "gap" between an individual's life circumstances and a standard for comparison. As the relationship between global and multi-attribute measures of QOL remains unclear, we will also determine the correlation between a multi-attribute measure and a global measure.

Methods: We developed a multiple item questionnaire to reflect the myriad of factors that could impact on a child's QOL. Modified "Visual Analogue Scales" (VAS) were used to measure the "gaps" between a child's expectations", "desires" and "realizations" as relating to each item of the questionnaire. Families of 20 consecutive patients were recruited through the rheumatology outpatient clinics at the Hospital for Sick Children. Interviews were conducted to ascertain the individual patient's opinions on the relevance and comprehensiveness of the items in the QOL questionnaire. Each patient was also given the opportunity to nominate additional items which they thought should be included in the QOL questionnaire. The feasibility of completing the modified VAS associated with each item in the questionnaire was also ascertained. Patients were asked to complete the "Quality of My Life" (QOML) questionnaire and the "Time Trade-Off" (TTO) method. The QOML questionnaire has previously been validated in pediatric rheumatology patients. The TTO method is a global measure and involves measuring a patient's willingness to live a shorter, but healthier life.

Results: Content analysis of each interview will be performed on an ongoing basis. Descriptive statistics will be used to analyze the data collected. Amendments to the questionnaire or any part of the interview process will be made as necessary.

Conclusions: The pilot study will provide information on the feasibility of utilizing this novel method to measure a child's QOL. The correlation between a multi-attribute measure and a global measure like the TTO, will be determined.

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THE IMPACT OF KAWASAKI DISEASE ON PARENTS: A NATURALISTIC INQUIRY Grace WK Gong, Erin Christie, Brian McCrindle, Katherine Boydell, Rae SM Yeung (Hospital for Sick Children)

Objective: A qualitative descriptive study was undertaken to elicit the concerns of parents with children previously diagnosed with Kawasaki Disease.

Methods: Fifteen families were recruited through the cardiology outpatient clinic at the Hospital for Sick Children. Individual face-to-face semi-structured interviews were conducted with either or both parents. Content analysis of textual data was used to identify recurrent themes and categories of concerns. The textual data comprised observational and verbatim field notes taken during each interview. Team and peer-based debriefing about emerging trends and observations was also conducted throughout the study.

Results: The time from initial diagnosis in a child of Kawasaki Disease to the latest cardiology review ranged from 6 weeks to 13 years. Interviews were conducted with fathers in 5 cases, mothers in 5 cases, and with both parents in the remaining 5 cases. Concerns identified focused on the consequences of Kawasaki Disease, family coping strategies and long-term parenting issues. Issues of concern varied depending on the length of time since the diagnosis of Kawasaki Disease was made. Early parental concerns were regarding the uncertainty of the initial diagnosis of Kawasaki Disease and the subsequent "loss" of a healthy child. Late parental concerns were in relation to coping with a potentially life-threatening condition in a child and the loss of normality. The uncertainty surrounding the diagnosis of the cardiac condition secondary to Kawasaki Disease and its prognosis permeated many of the concerns identified by the participants.

Conclusions: This study provides preliminary evidence that parents of children with a history of Kawasaki Disease have significant issues of concern which have not previously been recognized. This will allow for interventions to be specifically targeted at those areas where parental need is the greatest. This study also provides the impetus for more extensive research into parental coping strategies.

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MEDICATION USE AND RISK OF CONGESTIVE HEART FAILURE IN RHEUMATOID ARTHRITIS Sasha Bernatsky, Marie Hudson, Samy Suissa (McGill University)

Objective: To assess the risk of new-onset congestive heart failure (CHF) associated with the use of disease modifying anti-rheumatic drugs (DMARDs) and other medications.

Methods: We used a case-control design nested within a cohort of patients with rheumatoid arthritis (RA) who were dispensed a DMARD between September 1998 and December 2001. For each case of CHF identified during follow-up, 10 controls matched on age and time were selected from the cohort.

CHF events were identified from ICD-9 diagnostic codes. Conditional logistic regression was used to estimate the rate ratio of new-onset CHF associated with the current use of specific drugs, adjusted for sex and comorbidity.

Results: The cohort included 41,885 patients; 75% were women, with an average age at cohort entry of 51 years. During follow-up, 520 cases of CHF occurred, for a rate of 10.1 per 1,000 per year. The adjusted RR of CHF for current use of any DMARD was 0.7 (95% CI: 0.6-0.9) relative to no current use. By DMARD category, the clearest evidence of a beneficial effect was for TNF-alpha antagonists (RR 0.3, 95% CI: 0.1-0.9) and methotrexate monotherapy (RR 0.8, 95% CI: 0.6-1.0). For non-DMARD medications, the rate of CHF was not clearly increased or decreased, except for COX-2 inhibitors. The data suggested an increased risk of CHF with rofecoxib (RR 1.3, 95% CI: 1.0-3.2) and a decreased risk of CHF with celecoxib (RR 0.6, 95% CI: 0.4, 0.9).

Conclusion: The use of DMARDs was associated with a reduction in the risk of new-onset CHF in this RA cohort. The increased risk of CHF with rofecoxib alongside a decreased risk with celecoxib suggests the absence of a class-effect with respect to COX-II inhibitors and cardiovascular morbidity

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HEALTH CARE COSTS IN JUVENILE IDIOPATHIC ARTHRITIS Sasha Bernatsky, Ciaran Duffy, Pete Malleson, Yvan St. Pierre, Michelle Gibbon, John Penrod, Oliva Oritz-Avarez, Ann Clarke (Montreal General Hospital, Montreal, PQ, Montreal Children's Hospital, Montreal, PQ, Children's Hospital, Vancouver, BC)

Juvenile Idiopathic Arthritis (JIA) is a chronic pediatric disease that can potentially be disabling; significant morbidity may arise, due to continued disease activity and drug toxicity. Although high health care costs have been well-described in adult arthritis, little is known about the economic impact of JIA. Our purpose was therefore to describe health service use costs in JIA, and to compare this to pediatric controls. We enrolled consecutive clinic attendees (N=155) with JIA from two tertiary referral pediatric centres. We recruited controls without JIA (N=180) from the community and from outpatient clinics at the respective centres. We collected data on direct costs at 3 month intervals, using The Cost Assessment Questionnaire (CAQ), a modification of the economic portion of the Stanford Health Assessment Questionnaire. We obtained unit costs for health services from a variety of federal, provincial, hospital, laboratory, and professional association sources. We calculated average annualized costs (weighted by number of observations contributed by patients), expressed in 2002 Canadian dollars, and compared the JIA sample and controls. Costs presented represent health services; medication use was not included in these analyses. Our results were as follows. The average age at enrolment was similar in the JIA sample (10 years, SD 4.3) and in controls (10.5 years, SD 4.0). Somewhat more of the JIA patients were female (69.7%) as compared to the controls (47.8%). The mean JIA disease duration at enrolment was 4.3 yrs (SD 3.7). The average annualized cost of health services in the JIA sample was $CDN 1629 (95% CI $1129, $2130), compared to $CDN 1050 (95% CI $709, $1390) in controls. The total difference in annualized average costs for JIA subjects versus controls was $CDN 579 (95% CI $-21, $1180). Regarding cost components, JIA subjects had more costs related to visits to health care professionals. This was noted particularly for specialty physicians, where the difference in average annual cost for JIA subjects versus controls was $CDN 218 (95% CI $182, $253). This was also true for non-physician visits, where the difference in average annual cost for JIA subjects versus controls was $CDN 203 (95% CI $72, $334), and for diagnostic tests (imaging and laboratory), where the difference in average annual cost for JIA subjects versus controls was $CDN 168 (95% CI $95, $241). For other health service components, the average annual costs were not

clearly different between the two groups. We conclude from these results that the economic impact of JIA is substantial. We suspect that additional cost differences related to medication use would further highlight the greater total direct costs in the JIA sample compared to controls. Our team has undertaken further work to describe the total economic impact of JIA, including indirect and direct costs, and to establish clinical and social determinants of health care costs in JIA.

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SCREENING FOR CERVICAL DYSPLASIA: PRELIMINARY RESULTS OF A SURVEY IN SLE PATIENTS Sasha Bernatsky, Ann Clarke, Glinda Cooper, Chris Mill, Rosalind Ramsey-Goldman , Chris Pineau (Montreal General Hospital, Quebec, NIH, Durham, N. Carolina, Northwestern University, Chicago, Ill, Montreal General Hospital,Quebec)

Recent work has suggested that women with systemic lupus erythematosus (SLE) have an increased prevalence of cervical dysplasia and atypia on Pap testing. However, no studies to date have examined the frequency of Pap test screening in women with SLE, compared to the general population or to established guidelines. Objectives: To determine the frequency of Pap test screening in an SLE sample, and to determine if the frequency is higher or lower than that of the general population. Methods: Consecutive patients (N=95) seen in the Montreal General Hospital lupus clinic were surveyed regarding health screening practices. Reported practices of Pap testing among women with SLE were compared to Quebec population figures. Results: Only one patient declined the survey, based on inability to read or speak English or French. Of the 94 respondents, 84 were females. Of these 84 women, sixteen (19.0%) were aged less than thirty, 40 (47.6%) were 30-49, and the remainder (28, 33.3%) were 50 or older. Three women reported a past history of cervical dysplasia (3.6% of the sample). Only one of these three had had a Pap test in the last 12 months. Altogether, only 39.3% (95% CI 29.5, 50.0) of the 84 female SLE respondents reported having a Pap test in the preceding 12 months. This compares with a Quebec population rate for reported yearly Pap tests of 52.0% (51.7, 52.3%). In younger women, for whom recent guidelines emphasize yearly Pap tests, only 6 of 16 SLE subjects aged less than 30 had Pap tests done in the past 12 months (37.5%, 95% CI 18.5, 62.4). This compares with a general population rate of 55.9% (52.9, 58.9) for similarly aged women in Quebec. Conclusions: Our sample of women with SLE was less likely than the general population to have had yearly Pap testing. Younger women with SLE in particular may be under-screened. Care should be taken that recommendations regarding Pap testing are not neglected in SLE patients, particularly those with a past history of dysplasia.

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ARTHRITIS PRESENTING DURING THE ACUTE PHASE OF KAWASAKI DISEASE Grace WK Gong, Joyce C Ching, Brian W McCrindle, Rae SM Yeung (Hospital for Sick Children)

Objective: To define the incidence, pattern and clinical course of arthritis presenting at time of diagnosis of Kawasaki Disease (KD) in children.

Method: A single center, retrospective study of 421 consecutive patients diagnosed with KD between 01/1997 and 12/2002 was performed. Standardized clinical assessments, laboratory, and imaging test results plus treatment regimens were reviewed. Coronary arteries were visualized using echocardiography and coronary artery lesions (CAL) were reported as BSA adjusted Z scores. Those presenting with arthritis were identified, and the pattern of arthritis and clinical course documented. Children were separated into two groups, those with arthritis and those without arthritis, and clinical, laboratory, treatment response, and coronary outcome data were analyzed.

Results: During the study period, arthritis was documented in 38 children versus 383 without evidence of arthritis. The children with arthritis had effusions in one or more joints at KD diagnosis. The pattern of affected joints was variable, with both pauci- and polyarticular patterns and involvement of both large and small joints. In the majority of cases, the arthritis rapidly resolved with standard therapy for acute KD and did not require any additional medications. The children presenting with arthritis did not differ from children without arthritis with respect to their demographics, clinical features or laboratory findings. Additionally, presence of arthritis did not alter the response to treatment with IVIG, nor coronary outcome.

Conclusions: Arthritis is common during the acute phase of KD. The pattern of joint involvement varies with both pauci- and polyarticular involvement. Most cases of arthritis resolve without additional therapeutic intervention. Children with arthritis share all the same clinical features, biochemical parameters and coronary outcome as patients without arthritis. Acute inflammation of multiple targets, including joints, is part of the clinical spectrum of acute KD.

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DEVELOPMENT AND VALIDATION OF A SCORING SCHEME THAT MEASURES STRUCTURAL DAMAGE IN FACET JOINTS OF PATIENTS WITH ANKYLOSING SPONDYLITIS Stephanie Myckatyn, Anna Oswald, Robert Lambert, Barbara Conner-Spady, Walter Maksymowych (Division of Rheumatology, University of Alberta, Edmonton, AB, Department of Radiology, University of Alberta, Edmonton, AB, University of Alberta, Edmonton, AB)

Background. Radiological scoring methods have only been validated at one site and do not measure structural damage in the facet joints of AS patients. Facet joint pathology has significant impact on patient function as it is primarily responsible for impaired spinal mobility. Previous work has shown that facet joint ankylosis precedes vertebral ankylosis in AS. We have devised a simple grading system for scoring structural damage in cervical facet joints that can be used independently or integrated into the cervical component of the mSASSS (Edmonton mSASSS (EmSASSS)).

Objective. To assess the reliability of a new scoring system for measuring structural damage in cervical facet joints of patients with AS and to validate the scoring against self-reported cervical spinal function and a direct measure of cervical mobility.

Methods. Two blinded observers (rheumatologists) scored 77 AS radiographs from a consecutive cohort of AS patients followed at the University of Alberta. Each lateral cervical spine x-ray was scored by the following methods: 1. cmSASSS – anterior vertebral corners of lower C2 endplate to the upper T1 endplate; 2. total facet score (cEmSASSSv2) – facet levels from C2 to T1 were graded as score of 0 = normal, score of 3 = joint space narrowing, score of 6 = ankylosis; the facet scores from C2 to T1 were totaled to a maximum of 36; 3. cEmSASSSv1 – the facet score and vertebral body score for each level from C2 to T1 were compared and the higher value taken for a total maximum of 36. Intraclass correlation coefficients (ICC) were used to assess inter- and intra-rater reliability. Bland-Altman plots were drawn to further analyze inter-observer agreement. Spearman correlation analyses were performed to analyze correlations between cervical rotation (degrees of movement), cervical function (item 8 of the BASFI-0-10 VAS) and cervical radiological scores

Results. Radiographs of 77 AS patients, mean age 43.3 years (range 17 - 70), m:f = 59:16, mean disease duration 19.5 years (range 1 - 47) were assessed. Baseline parameters included: cervical function score 4.6 (range 0 – 4.5),, cervical rotation 58.9 degrees (range 5 – 85), cmSASSS 10.1, cEmSASSSv1 15.1, cEmSASSSv2 11.9

Correlations with cervical rotation and cervical radiological indices were as follows: Cervical mSASSS: $r = -0.73$ ($p < 0.0001$), cEmSASSSv1: $r = -0.73$ ($p < 0.0001$), cEmSASSSv2: $r = -0.81$ ($p < 0.00001$).

Radiographic Scoring Index	Analysis	Score	P value
cmSASSS	Intra-observer ICC	0.95/0.98	<0.0001
	Inter-observer ICC	0.94	<0.0001
cEmSASSSv1	Intra-observer ICC	0.95/0.94	<0.0001
	Inter-observer ICC	0.91	<0.0001
cEmSASSSv2	Intra-observer ICC	0.96/0.92	<0.0001
	Inter-observer ICC	0.88	<0.0001

Conclusions. Individual facet joint scoring and inclusion into a total spinal scoring system may provide further evidence of structural damage not included in previous AS radiographic scoring methods with good correlation to cervical mobility.

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PRELIMINARY VALIDITY STUDIES OF THE EARLY INFLAMMATORY ARTHRITIS SELF-ADMINISTERED CO-MORBIDITY QUESTIONNAIRE (EIA-SCQ) IN EARLY INFLAMMATORY ARTHRITIS Murray Baron, Pantelis Panopalis, Joanna Caron, Marie Hudson, Maura Buchigniani, Suzanne Taillefer , McGill Early Arthritis Research Group (McGill)

The effect of co-morbid conditions as a confounder on outcomes in studies of early inflammatory arthritis (EIA) is unknown. There is no self-administered co-morbidity questionnaire that has been shown to be reliable and valid in patients with EIA. We have adapted the Self-Administered Comorbidity Questionnaire (SCQ)(ref) for patients with EIA (EIA-SCQ). Scores range from 0 to 45; a higher score indicates more comorbidity.

Objectives: To validate the EIA-SCQ in EIA . We hypothesized that the results of the EIA-SCQ would correlate well with age, only weakly with health related quality of life (HRQoL), and not at all with indices of inflammation.
Methods: The EIA-SCQ was administered to 66 patients in the McGill Early Arthritis Registry. Baseline clinical and demographic characteristics, as well as tender and swollen joint counts were obtained. The SF-36, HAQ-DI and the McGill Pain Questionnaire (MPQ) were completed by all 66 patients. Univariate analyses were performed on the above data.
Results: Mean (+ SD) EIA-SCQ score was 4.4 (± 3.7). EIA-SCQ score was found to correlate well with age, (r= 0.49, p=0.01) and with the HAQ-DI score (r = 0.3, p<0.05) but not with either the SF-36 physical (r = -0.23) or mental (r = -0.10) component summary scores, nor with tender joint counts (r=-0.13), swollen joint counts (r=-0.19) or MPQ (r=0.11) scores.
Conclusions: Preliminary results indicate that the EIA-SCQ correlates primarily with age as predicted. Correlations between the SCQ and HRQoL were weaker than expected. The EIA-SCQ may be a valid, easy to use measure of comorbidity in patients with EIA. More extensive validity studies are ongoing. ref:Sangha et al. Arthritis Rheum 2003; 49:156-63.

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ESOMEPRAZOLE RELIEVES NSAID-ASSOCIATED UPPER GI SYMPTOMS IN PATIENTS TAKING EITHER CONTINUOUS COX-2 SELECTIVE NSAIDS OR NON-SELECTIVE NSAIDS Walter Kean[1], on behalf on the VENUS/PLUTO Steering Group, (Neville Yeomans, James M Scheiman, Joseph Sung, Nicholas J Talley, Roger Jones, Christopher J Hawkey). [1]McMaster University, Hamilton, Canada
Objective: NSAID-associated upper GI symptoms significantly impact on quality of life. We therefore performed two studies comparing esomeprazole with placebo in the treatment of upper GI symptoms associated with continuous COX-2 selective and non-selective NSAID use. Methods: H. pylori-negative patients aged 18 years or over, with a chronic condition requiring continuous (7 months or more) daily NSAID treatment, including COX-2 selective NSAIDs, underwent an endoscopy to ensure that they had no gastroduodenal ulcers or erosive esophagitis. Following a 7-11 day run-in, patients with moderate or worse upper GI symptoms on 3 days or more of the run-in period (7-point scale: 0=none to 6=very severe) were entered into one of two randomized, double-blind, 3-armed, parallel-group trials (NASA1: n=608 and SPACE1; n=556). Patients received oral esomeprazole 40 mg (E40), esomeprazole 20mg (E20) or placebo daily for 4 weeks. Patients were allowed rescue antacid medication (<6 doses/day). The cumulative proportion of patients who achieved relief (none/mild) of upper GI symptoms at 2 and 4 weeks were calculated using Kaplan-Meier estimates. Results: In the pooled ITT population, both E20 and E40 were significantly more effective than placebo in relieving upper GI symptoms at week 4 in patients using both COX-2 selective NSAIDs (n=385, E40: 73.3%, p<0.001 vs placebo; E20: 70.1%, p=0.003 vs placebo; Placebo: 55.9%) and non-selective NSAIDs (n=754, E40: 67.7%, p=0.002 vs placebo; E20: 73.5%, p<0.001 vs placebo; Placebo: 56.6%). Conclusion: Esomeprazole 40 mg and 20 mg over 4 weeks provided more patients with upper GI symptom relief than placebo, and were effective in both COX-2 selective and non-selective NSAID users.

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RELATIONSHIP BETWEEN SCINTIGRAPHIC MYOCARDIAL PERFUSION DEFECTS AND CORONARY ANGIOGRAPHIC FINDINGS IN PATIENTS WITH SLE M. Nikpour, D. Gladman, D. Ibanez, R. M. Iwanochko, M. B. Urowitz (University of Toronto Lupus Clinic, Toronto Western Hospital, University Health Network, Division of Cardiology, Toronto Western Hospital, University Health Network)
Background: Up to 40% of all patients with SLE have abnormalities on myocardial perfusion scintigraphy (MPS). In a prospective study 62% of asymptomatic patients with SLE and myocardial perfusion defects had no atherosclerotic plaques identified on angiography.
Aim: To determine the relationship between scintigraphic myocardial perfusion defects and findings on conventional coronary angiography in patients with SLE.
Method: This study was a review of all patients attending the University of Toronto lupus clinic that underwent coronary angiography in the course of clinical care from January 1995 to September 2003 inclusive, in whom MPS had been performed within 6 months of angiography. Records were reviewed, noting the indication for coronary angiography and the nature of abnormalities on myocardial scanning and angiography. An abnormal MPS was defined as a scan, which showed a perfusion defect (fixed or reversible) in one or more coronary artery territories. A 'plaque' was defined as a localized narrowing in a coronary vessel. An abnormal angiogram was defined as a study which showed plaque in one or more main coronary vessels.
Results: 24 patients were identified as having had both coronary angiography and MPS. 20/24 patients were symptomatic with documented angina, MI or CHF. The remaining 4 asymptomatic patients had coronary angiography to investigate perfusion defects detected in the course of a research study. Overall 21/24 patients had abnormal myocardial scans. Of the 21 patients with perfusion defects on MPS, 14(67.0%) had no plaques on angiography. The remaining 7(33.0%) patients had occlusive atherosclerotic plaques in coronary vessels corresponding with areas of hypoperfusion on MPS. In patients with abnormal MPS and normal angiography, perfusion defects were mostly small in area and mild to moderate in severity. 3/24 patients had normal MPS but went on to coronary angiography because they had cardiac symptoms or ischemic ECG changes; 2 had normal angiograms, 1 had two-vessel CAD.
Conclusion: In this study 67% of patients with SLE and perfusion defects on myocardial scanning had no atherosclerotic plaques on coronary angiography. A possible explanation for this apparent discordance may be that conventional coronary angiography lacks sensitivity in detecting non-occlusive vascular disease or disease of the coronary microvasculature. The mechanism and prognosis of perfusion defects in absence of atherosclerotic plaques on coronary angiography in patients with SLE requires further investigation in prospective studies.

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THE RELIABILITY OF ADMINISTRATIVE DATABASES TO DETECT AMBULATORY MUSCULOSKELETAL VISITS IN ALBERTA Katherine Gooch, Peter Faris, Jian Sun, Kelly Novak, Larry Svenson, Cy Frank (Institute of Health Economics, Alberta Health and Wellness, University of Calgary)
Background: The accuracy of estimates of ambulatory visits for health related conditions through administrative databases is uncertain. The accuracy of these databases depends largely on the completeness and appropriate disclosure of the diagnostic codes by healthcare providers. The purpose of this study was to assess the reliability of an administrative database for detecting ambulatory visits to general practitioners (GPs) for musculoskeletal (MSK) related conditions. Methods: Chart reviews were undertaken within selected GP practices throughout rural and urban Alberta, Canada. Data was collected for all ambulatory visits to these physicians between 01 April 1997 and 30 June 2001 for a total of 929 patients and 14,698 visits. All visits for an MSK condition were compared to the diagnostic codes that were submitted and maintained within the Alberta Health and Wellness administrative databases. Results: 25% of ambulatory visits included an MSK reason. The documented physician diagnosis was considered the 'gold standard' against which the administrative database diagnosis codes were compared. The sensitivity results for each of the MSK clusters were low (range 0.157 – 0.493), however the specificities were high (range 0.95 – 1.00). The overall sensitivity of any MSK diagnosis in the administrative database was 0.531. Using generalized linear mixed effect models, there was evidence that administrative accuracy was associated with the number of patient visits as well as the number of coexisting comorbidities. Conclusion: This study indicates that the administrative databases are not an accurate source for detecting the prevalence of MSK GP visits in Alberta. These findings have implications for the use of administrative databases for public health and epidemiological purposes.

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HIGH PRIORITY CANDIDATE GENES IMPLICATED IN AUTOIMMUNE DISEASES ARE NOT ASSOCIATED WITH PSORIATIC ARTHRITIS IN THE NEWFOUNDLAND POPULATION. Chris Butt, Lynette Peddle, Sean Hamilton, Dafna Gladman, Proton Rahman (Memorial University, University of Toronto)
Objective: Recently there have been major advances in the genetics of complex autoimmune diseases with the identification of candidate genes in psoriasis (SLC9A3R1), rheumatoid arthritis [OCTN1 (rs3792876) and RunX1] and Crohn's disease [OCTN1 (rs105012) and OCTN2]. As there is epidemiological, clinical and immunological overlap of these disease entities with PsA, we set to examine the association of these SNPs in the

Newfoundland psoriatic arthritis PsA) population.
Method: PsA was defined as subjects with inflammatory arthritis in the presence of psoriasis. All PsA subjects were native Newfoundlanders and healthy controls were ethnically matched. In total 255 PsA patients, and 233 controls from Newfoundland were genotyped for the SNPs in SLC9A3R1, OCTN1, RunX1, and OCTN2, using the Sequenom MassArray platform. All primers were designed using the SpectroDESIGNER software, scanned using a mass spectrometry workstation (Bruker), and analyzed using the SpectroTYPER-RT software.
Results: The minor allele frequencies of five SNPs is presented below.

Gene / SNP	Disease Associations	PsA patients n=255	Controls n=233	P value
Slc9A3R1 / rs734232 (A)	Psoriasis	42.2	46.8	0.15
OCTN1 / rs3792876 (T)	RA	6.4	8.0	0.34
RunX1 / rs2668277 (C)	RA	33.1	36.5	0.27
OCTN2 / rs2631367 (G)	Crohn's	51.0	48.7	0.47
OCTN1 / rs1050152 (T)	Crohn's	46.1	43.3	0.37

Conclusion: No association was noted between these high priority candidate genes in related autoimmune diseases (psoriasis / rheumatoid arthritis / Crohn's disease) and psoriatic arthritis.

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IL-1 FAMILY GENE CLUSTER AND PSORIATIC ARTHRITIS Proton Rahman, Lynette Peddle , Tara Snelgrove, Chris Butt, Bill Melay, Dafna Gladman (Memorial University, University of Toronto)
Introduction: In a recent study in ankylosing spondylitis, strong association and transmission of IL-1 SNPs were noted by Timms et al., 2004 in a 360kb region in chromosome 2q. As there is clinical and immunological overlap between PsA and AS, we examined the association of SNPs in the IL-1 family cluster in psoriatic arthritis (PsA).
Methods: PsA was defined as subjects with inflammatory arthritis in the presence of psoriasis. All PsA subjects were native Newfoundlanders and healthy controls were ethnically matched. In total 212 PsA patients, and 150 controls from Newfoundland were genotyped with 32 SNPs in the IL-1 cluster covering IL-1a, IL-1b, IL-1RN and IL-1F5 to IL-1F10 using the Sequenom MassArray platform. All primers were designed using the SpectroDESIGNER software, scanned using a mass spectrometry workstation (Bruker), and analyzed using the SpectroTYPER-RT software.
Results: The minor allele frequencies of SNPs that showed a association or trend is presented below along with the uncorrected p-value.

SNP rs#'s	**Gene**	**PsA** Allele Freq. (%)	**Control** Allele Freq (%)	**P value**
1533463 (C)	IL-1α	29.6	34.5	**0.06**
3783526 (A)	IL-1α	28.7	34.4	**0.07**
3783543 (T)	IL-1α	29.1	35.0	**0.09**
3783547 (C)	IL-1α	43.0	34.8	**0.03**
16944 (A)	IL-1ß	28.1	38.1	**0.005**
3811047 (A)	IL-1F7	32.5	23.6	**0.01**

Conclusion: Multiple SNPs of interest in were noted in the IL-1 family cluster. These SNPs now need to be assessed with haplotypes in the Newfoundland population and validated in an independent population.

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TO DECREASE THE AMOUNT OF CITRULLINATED PROTEINS AND ANTIGENS: A POSSIBLE ROLE FOR METHOTREXATE IN THE TREATMENT OF RHEUMATOID ARTHRITIS. M. Lora, ZJ Zhou, T. Senshu, HA Ménard (McGill University and MSK Axis of the McGill University Health Centre Research Institute, Montreal, QC, Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan)
Objective. Citrullination of proteins, citrullinated (cit-) antigens and methotrexate (MTX) are important in the inflammatory reaction, the immunopathogeny and the treatment of rheumatoid arthritis (RA), respectively. The exact anti-inflammatory/arthritic mechanism of action of MTX is still unclear. In most RA patients, MTX treatment added in significant dosage to anti-TNF treatment is more efficient then either treatment given alone. Our work explores their relationship. Methods. We screened eight cell lines and found only two that contained peptidylarginine deiminase (PADI) activity. Both were capable of producing cit-proteins and cit-antigens detectable by western blot (WB) using a rabbit anti-modified citrulline and polyvalent RA sera, respectively. The latter were selected because they were anti-Sa (cit-vimentin) positive. The cell lines were treated with increasing doses of MTX in a dose range corresponding to that obtained during treatment of RA patients and the semi-quantitative effect on cit-proteins and cit-antigens was estimated. Further, folinic acid protection against the effects of MTX was estimated. We also studied by WB the direct inhibition of PADIs by MTX.Results. UMR 106, osteoblast-like cells, had low amounts of PADI activity and ECV 304, endothelial/epithelial-like cells, had high amounts. MTX treatment of UMR 106 showed a dose dependent decrease in PADI activity: significantly less production of cit-proteins and cit-antigens. That MTX effect could be prevented by folinic acid. At the same low dosage, MTX had a limited effect on ECV 304. MTX does not inhibit PADIs directly.Conclusions. Our observations would suggest the hypothesis that MTX acts upstream and anti-TNF, downstream from the immuno-inflammatory reaction generated by the cit-proteins/antigens. In RA patients with positive antibodies to cit-antigens like anti-Sa (cit-vimentin), MTX should significantly decrease the antigenic load and remove one of the elements responsible for chronicity.

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A COMPARISON OF RECRUITMENT STRATEGIES FOR INTERNET-BASED EPIDEMIOLOGICAL STUDIES Paul Doerfling , Jacek Kopec, Matt Liang, Tom Oxland, Donna McIntire, Dave Wilson, Steven Edworthy, John Esdaile (Arthritis Research Centre of Canada, University of British Columbia, University of Calgary)
Purpose: To assess the efficiency of 3 Internet recruitment strategies for a cohort study of physical activity and knee osteoarthritis (OA).
Methods: Direct email was sent to a random sample of 1,150 registered members of the Canadian Association of Retired Persons (CARP), age ≥ 45, inviting them to participate in a study of physical activity and joint health. Half of the subjects were randomly allocated to an email that contained an incentive (a lottery with cash prizes) while the other half received a non-incentive version. Reminders were sent after 1 and 2 weeks. In addition, general advertisement in an online newsletter was circulated to 14,000 CARP members. All messages contained embedded hyperlinks to the study website. After completing an electronic consent form, subjects were provided with password access to the questionnaire. The online survey consisted of 33 questions on demographics, physical activity, diagnosis of OA, knee pain, and computer usage. The data were stored electronically in a format that could be imported directly into statistical analysis software.
Results: 284 subjects registered on the website and completed the questionnaire: 171 (60.2%) were female and 110 (38.7%) were male. Mean age for the group was 61 years. Participation rates were as follows:
follows:

	Deliveries	Clicks*	Completed Questionnaire
Incentive Email	575	305 (53%)	84 (14.6%)
Non-Incentive Email	575	280 (48.7%)	59 (10.3%)
Online Newsletter	14000	492 (3.5%)	106 (0.75%)
Other	N/A	N/A	32

* people who used the embedded hyperlink to visit the website

The cost of developing the website was $7,100 CND and advertising costs totaled $2,675. We allocated $1,000 for lottery prizes. Based on the response rates from this study, we project a cost of $7.01 per subject to recruit 2,920 participants from a database of 20,000 available through CARP. Choosing not to use the incentive, we project a sample size of 2,060 at a cost of $9.45 per participant. Other incentives the respondents said would encourage participation were a joint health information package, summary of the study results, and links to joint health information websites.
Conclusions: Direct email is an efficient method of subject recruitment for web-based cohort studies, but response rates can be expected to be lower than in mailed surveys. A lottery with cash prizes can increase the response rate by 40-50%. Additional incentives and a simplified log-in procedure are likely to further increase participation.

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EFFICACY OF A WORKPLACE SELF-MANAGEMENT PROGRAM IN REDUCING WORKER ABSENTEEISM Samra Mian, Kim Doyle, Jill Seviour, David Hallett, Yvonne Tobin, Proton Rahman (Memorial University, University of Toronto)
Objective: Sedentary office workers (defined as sitting at least 50%) are at a high risk of developing recurring musculoskeletal (MSK) injuries that can lead to long-term disability subsequently resulting in increased workplace absenteeism. The objective of our study was to follow-up on an existing one-year prospective study to determine the efficacy of a 6-week self-man-

agement workplace program, shown to increase knowledge regarding work place wellness, in reducing long-term absenteeism among office workers.
Methods: In collaboration with physiotherapists, occupational therapists, and a rheumatologist, a self-management program was designed using the guiding principles of the ASMP and delivered as a 6-session course by a trained facilitator. Sedentary office workers obtained from three worksites were randomized into the intervention and non-intervention group. Baseline demographics and baseline absenteeism data was obtained for both groups. Absenteeism data was collected one year after intervention and evaluated for both the active and control group. ANCOVA was used to determine the efficacy of the program in reducing workplace absenteeism and determinants of workplace absenteeism were evaluated.
Results: A total of 146 participants completed the program with 86 receiving the self-management program (intervention). The baseline demographics of the participants in the intervention and control groups were similar with respect to age, sex, marital status, education level, MSK pain, helplessness, depressive symptoms, and baseline absenteeism (Year 2003) (Table 1). The evaluation of our primary outcome dealing with employee absenteeism demonstrated that the intervention had no significant effect on overall absenteeism between the control and Intervention group (P=0.4191) (Table 2). Furthermore, assessment of the workplace determinants including depression, previous MSK pain, and frequency of pain, did not influence worker absenteeism.

Table 1: Baseline data for Active and Control group

	Control Group	Active Group
Number of Subjects	65	87
% age (that are less than 50 yrs)	75.8	78.6
% sex (females)	77.6	78.6
% that exceed High School level	87.9	87.8
% married (includes CL)	79.3	79.6
% with MSK pain	56.7	60.5
% feeling Helpless	15.3	22.6
% feeling Depressed	8.3	10.5
Mean Absenteeism (lost hours)	59.7	55.8

Table 2: One year follow up absenteeism Data (2004) for Active and Control group

	Year 2004 (one year follow-up)	
	Control	Active
Number of Subjects	60	87
Mean (lost hrs)	59.5	66.3
St. Deviation	70.0	84.7

Conclusion: Our one-year prospective study evaluated outcomes of a workplace self-management program designed to target office workers. With respect to workplace absenteeism, we were unable to show that implementation of our new program had any effect.

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RHEUMATOLOGY NURSE TRAINING AND STANDARDIZATION IN RHEUMATOID ARTHRITIS DISEASE ACTIVITY ASSESSMENT Mary J. Bell, Charlie H. Goldsmith, Terri Lupton, Paul Haraoui, Diane Mosher, Sharon LeClercq, Jane Cottrell, Joan Blair, Christian Base (University of Toronto, McMaster University, Sunnybrook and Women's College Health Sciences Centre, University of Montreal, Dalhousie University, University of Calgary, Sunnybrook and Women's College Health Sciences Centre)
Objective: To train, standardize, and certify rheumatology RN's in the Rheumatoid Arthritis Clinical Disease Activity Assessment (CDAA).
Methods: 1. Standardization of five academic rheumatologists (faculty) in the ARA index method of CDAA was completed. 2. Inter- and intra-rater reliability for the faculty was calculated. 3. Ten patients with RA according to the 1987-revised ARA criteria consented to participate in this study. 4. The five faculty members instructed eight RN's over a 1.5 hour period using two patients in the assessment of joint tenderness, swelling, and grip strength. 5. Each RN examined four different patients using the ARA index and re-examined one of these patients (intra-rater reliability). 6. Patient, observer, and assistant reactions were assessed. 7. Descriptive statistics and ANOVA were used to calculate the articular index and inter- and intra-rater reliability
Results: Rheumatologists' inter-rater and intra-rater reliability using the ARA index was calculated and considered the gold standard. Rheumatology RN's achieved similar results. Patients, observers, and assistants observed variation in technique amongst participants.
Conclusion: The ARA index is a reliable and reproducible method of assessing RA clinical disease activity. Rheumatology nurses can perform this assessment with similar results to standardized rheumatologists.
Disclosure: The authors have relationships with and conduct clinical trials with: Abbott, Allelix NPS, Amgen, Anika, Astra Zeneca, Boehringer Ingelheim, Bristol Myers, Centocor, Merck, Novartis, Pfizer, Roche, Wyeth, Health Canada, MOHLTC (Ontario), and Sunnybrook and Women's College Health Sciences Centre Department of Medicine and Clinical Integrative Biology.

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TORONTO EARLY ARTHRITIS COHORT (TEACH): A CANADIAN COHORT OF PATIENTS WITH EARLY INFLAMMATORY POLYARTHRITIS Shahin Walji, Chris Kitamura, Mary-Grace Milton, Vivian Bykerk (University of Toronto, Mount Sinai Hospital)
Background: Rheumatoid arthritis (RA) is a chronic, systemic, inflammatory disease that leads to cartilage and bone destruction, joint deformities and functional disability. There is ample evidence which shows that joint damage and disability occur early in the disease, especially within the first few years. Therefore, there has been increasing interest in early and aggressive treatment to minimize inflammation, and thereby, to prevent irreversible joint damage. Early inflammatory arthritis clinics are being created to study prognostic markers and outcomes in patients with early arthritis and to provide optimal, aggressive treatment. In this study, we describe a Canadian cohort of patients with new inflammatory polyarthritis in the twenty-first century.
Methods: Patients with new onset inflammatory arthritis were recruited from family physicians and specialists starting March 2004. Patients were seen in clinic within four weeks of receiving referral. Prior to clinic visit, they were pre-screened by nurse practitioner to ensure adequate referral. Inclusion criteria: (1) Age > 16 (2) Symptoms for = 6 weeks and < 12 months (3) At least one of the following: (a) 2 (or more) swollen joints (b) 1 swollen MCP or PIP and one of the following: (i) Rheumatoid factor = 20 (ii) Positive anti-CCP antibody (iii) AM stiffness > 45 min (iv) Response to NSAID (v) Positive MTP squeeze test.
Results: After 8 months, 37 patients have been enrolled in the cohort. Mean age is 45 ± 14 years. 75.7% of enrolled patients are female and 24.3% are male. Mean duration of symptoms at presentation was 7 months. 72.2% of patients fulfilled ACR diagnostic criteria for RA at baseline visit, 19.4% had undifferentiated inflammatory arthritis and 8.3% had other diagnoses. 27% had a positive rheumatoid factor at baseline, while 33% had erosions on plain xray. Mean number of tender and swollen joints were 21.61 and 11.97 respectively. Mean baseline HAQ was 1.43.
Conclusion: Our cohort has many similarities and differences compared to other international cohorts. The mean age and female to male ratio remains consistent. Interestingly, a large percentage of our patients (72%) fulfilled ACR diagnostic criteria for RA at baseline, despite a relatively short duration of symptoms. This is different from other cohorts who have reported only 30-50% of patients fulfilling ACR criteria at baseline. Our findings suggest that although the current ACR criteria were developed to differentiate patients with established disease, they may also be applied to patients with early undifferentiated polyarthritis. Despite fulfilling ACR criteria, only a quarter of patients had a positive rheumatoid factor, while one third had erosions at baseline, suggesting that these factors may not be as important in the diagnosis of RA as previously accepted. High numbers of tender and swollen joints at baseline and moderate baseline HAQ scores suggest high disease activity in our cohort, despite short symptom duration. This may contribute to the large numbers of patients fulfilling ACR criteria.

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PERSISTENT FEBRILE ILLNESS FOLLOWING TYPICAL KAWASAKI DISEASE: A REPORT OF 5 CASES Jonathan D Akikusa, Wesley Chan, Rayfel Schneider, Rae SM Yeung (Division of Rheumatology, Hospital for Sick Children, Toronto, Ontario., University of Toronto)
Kawasaki disease (KD) is an acute febrile illness with protean clinical manifestations and a propensity to cause vasculitis of the coronary arteries. For the large majority of children with KD, treatment with a single infusion of intravenous immunoglobulin significantly lowers the incidence of coronary artery abnormalities and results in a rapid resolution of fever and other clinical signs of inflammation. Approximately 15% of children with KD require re-treatment on the basis of failure of fever to resolve completely.

Rarely, fever may persist despite re-treatment. The outcome of this small subset of KD patients is not well described. We report our experience with 5 children presenting with typical KD whose disease course was complicated by persistent fever despite re-treatment. Four were re-treated with IVIg and three additionally received high dose intravenous and/or oral steroid. One patient subsequently developed macrophage activation syndrome and has continued to have intermittent fever and rash without arthritis at 15 months of follow-up. Another patient had persistent arthritis and rash which resolved over 8 months. Three children developed a clinical picture compatible with systemic onset juvenile rheumatoid arthritis (soJRA) with intermittent fevers, rash and arthritis. Therapy in this group of patients ranged from simple non-steroidal anti-inflammatory drugs to regular IVIG infusions and oral steroids. Two patients had coronary artery abnormalities identified at the time of diagnosis of KD. No patient developed new coronary artery abnormalities subsequently.
Conclusion: Typical Kawasaki disease may be complicated by the development of persistent fever which may require a relatively prolonged period of on-going anti-inflammatory or mmunosuppressive therapy. In some children this may be the prelude to the development of soJRA. Despite the persistence of systemic inflammation, long-term coronary artery outcomes do not appear to be adversely affected in this group of children.

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PREVALENCE AND RISK FACTORS FOR FALLS IN WOMEN WITH LONGSTANDING INFLAMMATORY POLYARTHRITIS Anna E. Oswald, Stephen R. Pye, Tarnya Marshall, Deborah P. Symmons, Alan J. Silman, Terence W. O'Neill (ARC Epidemiology Unit, The University of Manchester, Manchester, UK and Division of Rheumatology, University of Alberta, Edmonton, Alberta, Canada, ARC Epidemiology Unit, The University of Manchester, Manchester, UK, Department of Rheumatology, Norfolk and Norwich University Hospitals NHS Trust, Norwich, UK)
Objective: To determine the one year period prevalence and risk factors for falls in a cohort of women with longstanding inflammatory polyarthritis.
Methods: The Norfolk Arthritis Register is a prospective cohort of subjects aged 316 years with early inflammatory arthritis recruited in Norfolk (UK). This study includes patients registered from 1990 to 1993 who have been followed for 10 years. Subjects were referred from primary care physicians or rheumatologists. Subjects were examined at baseline and followed prospectively. At the ten-year anniversary visit, subjects were assessed for the presence of swollen, tender and deformed joints and completed the health assessment questionnaire (HAQ). A subset of subjects were invited to complete a questionnaire about falls in the previous twelve months and asked about their general health status. Logistic regression was used to determine the association between falls in the previous year and disease related risk factors.
Results: 265 women, mean age 58.1 years (standard deviation [sd] 13.1), mean disease duration 10.7 years (sd 0.6) completed the falls questionnaire. 84 (31.5%) reported a fall in the previous 12 months. There was no increase in frequency of falls with age. Adjusting for age, those who had a fall had a higher mean HAQ score (Odds Ratio [OR]=1.7; 95% Confidence Interval [CI] 1.2, 2.4) than those who did not fall. For all domains of the HAQ, increasing scores were linked with an increased risk of falls [OR's 1.4 to 1.7) with the exception of grip and eating where the confidence intervals embraced unity. Total swollen, tender and deformed joint scores were not associated with falls. In contrast general health (not so good & poor vs. satisfactory & good & very good) was associated with an increased risk of falls (OR=2.9; 95% CI 1.6, 5.1).
Conclusion. In this cohort of women with longstanding inflammatory polyarthritis one in three women reported falling in the previous 12 months. Disability was linked with an increased fall risk.

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SUSTAINED EFFICACY AND SAFETY AFTER A SECOND TREATMENT COURSE OF RITUXIMAB IN PATIENTS WITH RHEUMATOID ARTHRITIS L. Szczepanski, J. Szechinski, A. Filipowicz-Sosnowska, M. Nahir, K. Pavelka, T. Sheeran, P. Emery, J. Pope, N. Saiedabadi, P.B. Lehane (Medical University, Lublin, Poland, Medical University, Wroclaw, Poland, Rheumatology Inst., Warsaw, Poland, Rambam Medical Centre, Haifa, Israel, Rheumatology Inst., Prague, Czech Republic, Cannock Chase Hospital, Cannock Chase, UK, Leeds General Infirmary, Leeds, UK, St. Josephs Health Care, London, Canada, Roche Products Ltd, Welwyn, UK)
Purpose: To characterize preliminary long-term efficacy and safety of a 2nd course of treatment with rituximab (RTX).
Methods: 50 patients (pts) who received a single course (C1) of RTX administered as either monotherapy, RTX + cyclophosphamide, or RTX + methotrexate (MTX), within a previously reported randomised controlled trial, received a 2nd course (C2) of RTX as part of an open label extension. Redosing with RTX was permitted once pts completed at least 24 wks in the original RCT and achieved >=50% reduction in baseline SJC and TJC following their first course. Due to trial practicalities, entry into this protocol was prolonged in some cases. The 2nd course consisted of two 1g RTX infusions (Days 1 & 15) together with a 17-day course of corticosteroids. Patients continued to receive weekly MTX.
Results: Median time to a 2nd RTX course was 18 months (range 0.8-2.2 years). At 48 weeks after the 2nd course, 44 pts (88%)remained in the study and required no further infusions. Following the 2nd RTX course, long-term ACR response rates were reinduced, mean DAS28 fell from 6.7 to 4.0, and mean CRP fell from 43 to 10 mg/L (at 24 wks). RF seropositivity fell from 94% to 67%.

n = 50	**24 wk**				**48wk**			
	ACR 20	**ACR** 50	**ACR** 70	**Δ DAS** 28	**ACR** 20	**ACR** 50	**ACR** 70	**Δ DAS** 28
Course 1 (C1)	38 (76%)	17 (34%)	7 (14%)	-2.4	21 (42%)	9 (18%)	2 (4%)	-1.4
Course 2 (C2)	32 (64%)	19 (38%)	6 (12%)	-3.0	34 (68%)	19 (38%)	11 (22%)	-3.0

ITT analysis, non-responder imputed.All responses/changes relative to original study baseline

Safety was assessed from initial RTX treatment through to week 48 after the 2nd RTX course (median 2.5y, range 1.8-3.2). CD19 B-cell counts were below the lower limit of normal in 16% of patients before C1 and in 46% of patients at the start of C2. Despite this, there was no evidence of an increase in the incidence of adverse events (AEs), including infections. Four serious infections (bacterial arthritis, bronchopneumonia, appendicitis, otitis media) were reported overall. AEs occurring during RTX infusions were generally mild, and the incidence decreased with each course and infusion. One serious AE (bronchospasm) was reported during a Day 15 infusion of C2. This pt received RTX monotherapy in the original trial and developed HACA prior to C2. Another HACA+ patient received a 2nd course without incident. Mean Ig levels were slightly reduced compared to baseline, but remained within normal limits throughout.
Conclusions: A 2nd course of treatment with RTX in combination with MTX, is effective and well tolerated in RA pts who had previously responded to this targeted B-cell therapy. Comparable ACR response rates were observed after this 2nd course. No cumulative toxicity was noted, even during periods of peripheral B-cell depletion.

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ERHEUM - INTEGRATING ELECTRONIC CAPTURE AND REPORTING OF PATIENT SELF-REPORT DATA INTO THE PRACTICE MANAGEMENT OF ADULTS WITH RHEUMATOID ARTHRITIS Claire Bombardier, Sherra Solway, Annette Wilkins, Khaled El Emam, Jessica Lee, Akil Sadikali (University Health Network & Mount Sinai Hospital, Toronto, Ontario, University Health Network, Toronto, Ontario, Children's Hospital of Eastern Ontario Research Institute, Ottawa, Ontario)
RATIONALE: Current guidelines for arthritis care promote systematic, regular evaluation of disease activity in order to guide treatment and provide information on the progress of disease over time. Although widely used in research and despite compelling evidence of their important contribution to the understanding, monitoring, management and prediction of patient outcomes, the adoption of self-report measures in clinical practice has been slow due to the time, effort and expertise needed to collect and process the data. Advances in technology now allow for computer administration of questionnaires with direct capture and scoring of data, integration with information from previous visits and immediate presentation of a summary report available at the point of care. OBJECTIVE: The Electronic Rheumatology (eRheum) Initiatives Research Program is aimed at integrating the electronic capture and reporting of patient self-report data into rheumatology care delivery. METHODS: Phased pilot studies: Phase one included key informant interviews with stakeholders; testing of various types of devices and technologies for data entry; and the development of a prototype patient data capture interface that allows patients with rheuma-

toid arthritis (RA) to complete validated self-report outcome measures, medication use and other data directly onto a computer and summarize these data in a cumulative report available at the point of care. Phase two explored the feasibility of having the electronic data capture and reporting system on the web and continued to evaluate patient and rheumatologist perceptions of ease of use, usefulness of the data and satisfaction with the application. Phase three is currently in progress and involves refinement of the point of care report, multi-site deployment and 'real life' implementation to determine the organizational and technical requirements to integrate the application into usual care. Phase four is in the planning stage and will involve the development of a patient summary report to facilitate disease tracking and self-management for individuals with RA. RESULTS: Results to-date include the successful completion of phases one and two. ERheum has effectively been migrated to a web-based system and ease of use and acceptance by patients and rheumatologists has been confirmed. Evaluation results indicate potential for positive impact on health outcomes by providing relevant information on disease status immediately at the point of care, increasing the efficiency of the clinical visit and improving patient-physician communication. Work-to-date has allowed us to identify clinical, information technology, ethical and legal critical factors to consider enabling integrating health informatics into clinical practice. CONCLUSION: Successful demonstration of this electronic data capture and reporting application has the potential to allow clinicians and scientists to collect important data to improve the monitoring of patients in usual clinical practice and to more efficiently participate in clinical trials, surveillance studies and other quality assurance activities.

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ASSOCIATION OF THE INTERLEUKIN-1 LOCUS WITH SUSCEPTIBILITY TO ANKYLOSING SPONDYLITIS: A SPONDYLOARTHRITIS RESEARCH CONSORTIUM OF CANADA (SPARCC) ANALYSIS OF 3 CANADIAN POPULATIONS. Walter P. Maksymowych, Proton Rahman, Jeff Reeve, Dafna Gladman, Lynette Peddle, Robert D. Inman (University of Alberta, Memorial University Newfoundland, University of Toronto)

Background. About half of the genetic contribution to disease susceptibility in AS is derived from non-MHC loci. Both linkage and case control analyses have implicated a gene within the IL1 cluster which is a 360kb region containing the IL1α, IL1ß, IL1RN, and IL1F5-F10 genes. However, some analyses have concluded that there is no association. We postulated that the lack of agreement reflected inadequate power due to small sample sizes.

Objective. To examine the association of the IL1 locus with susceptibility to AS in 3 independent case control cohorts of Canadian patients with AS.

Methods. We analyzed DNA samples from 200 patients and 200 controls from Edmonton, 113 patients and 149 controls from Newfoundland, and 94 patients and 114 controls from Toronto. Patients met the modified New York diagnostic criteria and controls were ethnically matched. Samples were genotyped for a panel of 30 SNP markers by time-of–flight mass spectrometry using the Sequenom platform after amplification of 2.5ng of DNA using forward and reverse primers. Data from 3 SNP markers was analyzed: IL1ß -511(rs16944 -A/G alleles), IL1F8-1 (rs1562304 –A/G alleles), and IL1F10-3 (rs3811058 –T/C alleles). The program SNPEM was used to calculate both single-marker and haplotype associations, using a Chi-squared test. An "omnibus" likelihood ratio (LR) test statistic was used to test for differences in overall haplotype distributions between cases and controls; p values were determined by permutation (1000 randomizations). Linkage disequilibrium (LD) between alleles was calculated using the EMLD program. Logistic regression was used to analyze the hierarchy of associations.

Results. For the combined populations, significant case control differences in overall haplotype distribution were evident for haplotypes comprising all 3 SNP markers as well as 2-marker haplotypes (omnibus p = 0.001).

SNP Haplotype/allele	Controls	Cases	Odds Ratio [95% CI]	P value
AGT*	0.38	0.29	0.67 [0.50-0.92]	0.001
GGT*	0.47	0.58	1.59 [1.19-2.13]	0.001
AG**	0.40	0.29	0.61 [0.45-0.83]	0.001
GG**	0.57	0.66	1.46 [1.09-1.97]	0.001
IL1ß-511 G	0.60	0.70	1.58 [1.17-2.15]	0.001

*3-marker haplotype (IL1ß -511, IL1F8-1, IL1F10-3),**2-marker haplotype (IL1ß -511, IL1F8-1).

Significant associations with the same 3-marker (AGT,GGT) and 2-marker (AG,GG) haplotypes and the IL1ß -511 SNP were also observed in the Alberta and Newfoundland populations whilst a significant difference in overall haplotype distribution was evident in the Toronto population (omnibus p = 0.001). Logistic regression indicated that IL1B -511, followed by IL1F10-3, were primarily responsible for the association between disease status and single marker genotypes. LD was greater than 0.5 between all pairs of markers.

Conclusions. The IL1 locus is associated with susceptibility to AS. The analysis of large datasets provided by a consortium of investigators is essential for the further conduct of these studies.

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MAINTAINED SYMPTOM CONTROL WITH ESOMEPRAZOLE FOLLOWING INITIAL TREATMENT OF UPPER GI SYMPTOMS OF PATIENTS ON NSAIDS INCLUDING COX-2-SELECTIVE NSAIDS Walter Kean[1], on behalf of the VENUS/PLUTO Steering Group, (Chris J Hawkey, Neville Yeomans, James M Scheiman, Nicholas J Talley, Joseph Sung, Roger Jones, Jorgen Naesdal, Goran Langstrom). [1]McMaster University, Hamilton, Canada.

Objective: NSAID-associated upper GI symptoms are improved with 4 weeks' esomeprazole treatment. In two further studies, we determined if esomeprazole maintained upper GI symptom relief over 6 months in users of NSAIDs, including COX-2-selective NSAIDs. Methods: Patients who achieved upper GI symptom relief in the acute studies (NASA1, SPACE1) were re-randomized into two identical, multi-center, placebo-controlled, double-blind studies (NASA2, SPACE2). Patients received oral placebo, esomeprazole 20mg (E20) or 40mg (E40) daily for 6 months. Upper GI symptoms (pain, discomfort or burning in the upper abdomen) were recorded on patient daily diary cards using a 7-grade scale from "none" to "very severe". Relapse was defined as moderate or severe symptoms. The primary endpoint was the proportion of patients with relapse of upper GI symptoms through 6 months' treatment. Results: See table for the estimated cumulative proportion of patients with relapse of upper GI symptoms (diary card). Compared with placebo, E20 and E40 also resulted in significantly (P<0.05) more patients with no heartburn or acid regurgitation. Conclusion: E20 and E40 daily are more effective than placebo in preventing relapse of upper GI symptoms in non-selective and COX-2-selective NSAID users over 6 months.

Pooled ITT population (n=594)	Placebo (95% CI)	E20 (95% CI)	*E40 (95% CI)*
Month 1	31.5% (25.1-37.9)	14.8% (9.8-19.9)	*11.2% (6.7-15.7)*
Month 3	35.9% (29.2-42.6)	20.9% (15.0-26.9)	*20.3% (14.4-26.3)*
Month 6	39.1% (32.2-46.0)	29.3% (22.3-36.2)	*26.1% (19.4-32.9)*
Log rank test vs placebo	-	*P=0.0059*	*P=0.0006*

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EVALUATION OF A RHEUMATOLOGY ADOLESCENT TRANSITION CLINIC Rachel Scott, Adam Huber, Diane Mosher, Inez MacNeil, Suzanne Ramsey, Bianca Lang (Hôpital Ste-Justine, Montreal, Quebec, IWK Health Centre, Halifax, Nova Scotia, QEII Health Sciences Centre, Halifax, Nova Scotia)

Objective:To assess patient satisfaction, education, socio-economic status, quality of life, degree of disability, and compliance with follow-up amongst all patients who attended a rheumatology transition clinic.

Methods: Questionnaires were sent to 151 potential subjects who have attended the pediatric rheumatology transition clinic at the IWK Health Centre. 36 questionnaires were returned to sender without reaching the patient. Of the 117 remaining subjects, 51 completed questionnaires were returned (44%). 38 of the patients were transitioned to the same adult rheumatologist.

Results: The average age of the respondents was 21.9 years. There were 40 females and 11 males. 42 had juvenile arthritis, 4 had SLE, 1 had juvenile dermatomyositis and 4 had other rheumatologic diseases. The average time since transitioning was 2.3 years. All of the respondents have completed high school. 65% have completed or are currently enrolled in post-secondary education. 52% live with their parents. 55% of respondents reported having to cut down on their activities in the past 6 months due to their disease. This occurred on an average of 7.9 days out of 6 months. 44% of those who worked were unable to fulfil all of their work duties in the past 6

months. They missed an average of 2.7 workdays out of 6 months. 88% were transitioned between the ages of 17 and 20. 58% felt they were transitioned at the right age. 74% attended between 1 and 4 transition clinics. 55% felt they attended the right number of clinics. 37 (73%) of the respondents reported that they have on-going appointments with an adult rheumatologist. 29 of the 37 (76%) reported that they have good compliance with follow-up appointments. Actual compliance was assessed in 38 patients now followed by one local rheumatologist, 7 of the 38 (18%) have missed follow-up appointments. 51% of respondents reported that they were not compliant with prescribed medications. Respondents were surveyed on their satisfaction with the transition clinic and how well it addressed adolescent issues. The overall mean satisfaction with the clinic on a 10 cm visual analog scale was 7.3 (standard deviation 2.6). Health-related quality of life, using the SF-36 questionnaire, was assessed. Respondents' scores were all lower than Canadian norms but more markedly so in the domains evaluating pain and physical function. Their degree of disability, using the Stanford Health Assessment Questionnaire (HAQ), was also measured. The mean disability index score was 0.28, which is compatible with a moderate degree of impairment.

Conclusions: A significant number of these patients continue to have impairment in their daily activities. Reported and actual compliance with follow-up are comparable. Satisfaction with the transition clinic was good, although some variability in specific issues may suggest that changes are needed. These patients have significant ongoing impairment in physical function, as assessed by the SF-36 and the HAQ.

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Efficacy and Safety of the Selective Co-stimulation Modulator Abatacept with Methotrexate for Treating Rheumatoid Arthritis: 1-year Clinical and Radiographic Results from the Phase III AIM (Abatacept in Inadequate responders to Methotrexate) Trial

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Purpose: The AIM trial assessed the efficacy and safety of abatacept in RA patients with an inadequate response to MTX. Abatacept is a selective co-stimulation modulator targeting T-cell activation, previously shown to provide clinical benefit in RA patients receiving MTX[1].

Methods: AIM was a 1-year, randomized, double-blind, placebo-controlled, multicenter Phase lll trial of a fixed dose of abatacept approximating 10 mg/kg vs placebo in patients with active RA despite MTX treatment. Patients continued with MTX and were randomized to abatacept or placebo treatment. Study medication was administered on days 1, 15, and 29 and then every 28 days afterwards. Co-primary efficacy endpoints included ACR 20 responses at 6 months and structural damage progression (Genant-modified Sharp score) at 1 year. Secondary endpoints included ACR 50 and 70 response rates at 6 months and all ACR responses at 1 year.

Results: A total of 433 and 219 patients were randomized to abatacept and placebo treatment, respectively, with 385 (88.9%) of the abatacept group and 162 (74.0%) of the placebo group completing 1 year. Baseline patient characteristics were similar.

Mean disease duration was 8.5 ± 7.3 years for abatacept and 8.9 ± 7.1 years for placebo. At 6 months, ACR 20 responses were 67.9 vs 39.7%, ACR 50 responses were 39.9 vs 16.8% and ACR 70 responses were 19.8 vs 6.5% for abatacept vs placebo, respectively ($p<0.001$ for all comparisons). At 1 year, ACR response rates increased with abatacept: ACR 20 = 73.1 vs 39.7%; ACR 50 = 48.3 vs 18.2%; ACR 70 = 28.8 vs 6.1% ($p<0.001$ for all comparisons), 42.5 vs 9.9% of patients had low disease activity (DAS28≤3.2) and 23.8 vs 1.9% were in remission (DAS28<2.6) for abatacept vs placebo treatment, respectively. Radiographic evaluation showed significant reductions in progression of erosions ($p=0.029$), joint space narrowing ($p=0.009$) and total score ($p=0.012$). Abatacept was generally safe and well tolerated with a low incidence of infusion reactions and serious infections (3.9% for abatacept vs 2.3% for placebo).

Conclusions: These data demonstrate the clinical benefit of abatacept in decreasing RA signs, symptoms and disease progression in patients with an inadequate MTX response. This confirms and expands results from earlier studies, providing evidence of the benefit of the selective co-stimulation modulator abatacept in targeting T-cell activation in RA treatment.

[1]Kremer JM, et al. N Engl J Med 2003; 349: 1907-15

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DETERMINATION OF THE MINIMAL CLINICALLY IMPORTANT DIFFERENCE IN FATIGUE MEASURES FOR SYSTEMIC LUPUS ERYTHEMATOSUS Raheem Kherani, Matt Liang, Diane Lacaille, Jacek Kopec, Stephanie Ensworth, Allen Lehman, Rollin Brant, Jacques Pouchot (Arthritis Research Centre of Canada, Division of Rheumatology, University of British Columbia, Vancouver, BC, Canada, Division of Rheumatology, Immunology, and Allergy, Brigham & Women's Hospital and Harvard Medical School, Boston, MA, USA, Arhtiritis Research Centre of Canada and Department of Educational Studies, University of British Columbia, Vancouver, BC, Canada, University of Calgary, Calgary, AB, Canada, Department of Internal Medicine, Hôpital Louis Mourier, Université Xavier Bichat–Paris VII, Paris, France)

Background: Fatigue is a common symptom in patients with systemic lupus erythematosus (SLE) and is a major cause of disability. An ACR committee has reviewed the measures of fatigue for clinical trials in SLE and defined criteria for response and worsening of the measures.

Objective: To estimate the minimal clinically important difference (MCID) of six measures of fatigue in SLE from the patient's perspective.

Methods: Six self-administered questionnaires were studied: Fatigue Severity Scale (FSS), Vitality Scale of the MOS-SF36 (VT), Multidimensional Fatigue Inventory (MFI), Multidimensional Assessment of Fatigue (MAF), Functional Assessment of Chronic Illness Therapy – Fatigue (FACT), Chalder Fatigue Scale (CFS), and a global assessment of fatigue Visual Analogue Scale (VAS). The method of Jaeschke and Redelmeier was used to estimate the MCID. Patients with SLE were recruited through rheumatologists affiliated with the Arthritis Centre. All patients met with 6 to 8 patients. They completed the six questionnaires and then participated in 5 one-on-one interviews of 15 minutes each to discuss fatigue. After each interview, each patient compared their fatigue to the other's fatigue. Their ratings were compared to the scores of the fatigue measures to estimate the MCID.

Results: 69 patients (3 with undifferentiated connective tissue disease) participated. Patient demographic and disease information included: mean age 47.8 ± 12.5 years (22.3 – 74.8); female 66 (96%); disease duration 12.8 ± 8.8 years (0.4 – 47.1); SLAQ 1.2 ± 0.8 (0 – 3) (median 1.3); disease activity (self-reported) 5.0 ± 2.7 (0 – 10) (median 5.0).

Instrument	Mean normalized score (SD)	MCID for each fatigue instrument: MCID for Worsening (Same to Bit More Fatigue)	MCID for each fatigue instrument: MCID for Improvement (Same to Bit Less Fatigue)
FSS	72.3 (24.8)	21.6	2.2
VT	62.8 (25.5)	19.7	8.6
MAF	56.6 (26.1)	20.7	6.8
MFI	56.1 (15.1)	15.9	12.7
FACT	50.6 (23.6)	20.0	8.2
CFS	50.0 (20.3)	9.0	5.6*
VAS	56.5 (27.1)	18.3	7.0

Conclusion: Empirically derived MCID for improvement and worsening are provided for six fatigue instruments. This data will help to estimate sample size in future clinical trials using fatigue as a primary endpoint.

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THE USE OF THE COMMUNITIES OF PRACTICE METHOD FOR CONTINUING PROFESSIONAL DEVELOPMENT ACTIVITIES IN RHEUMATOLOGY Mary Bell, Gary Sibbald (Sunnybrook and Women's College Health Sciences Centre, University of Toronto)

OBJECTIVE: To determine, following introduction to the concept of Communities of Practice (CoPs) in a workshop setting, if a group of medical subspecialists, medical ethicists, medical-legal experts, and informed consumers, adopt and adhere to the use of CoPs for their continuing education and maintenance of certification, and will the participants perceive

that CoPs enhance the quality of patient care?
METHODS: Sunnybrook and Women's College HSC-associated consumers, legal, and health professionals attended an interdisciplinary continuing education workshop on the risks and benefits of biologic therapies in arthritis care. The content of the workshop was determined by a pre-workshop needs assessment. The participants completed a pre-workshop, post-workshop, and 3 month follow-up questionnaire regarding their current practice needs in the area of biologic therapies, and their use and attitudes toward CoPs. A 30 minute interactive lecture was delivered outlining the concept of CoPs and background information on the risk and benefit of biologic therapy in arthritis management. This was followed by case discussions where each participant had the opportunity to work and learn within a CoP. The final portion of the two-hour meeting consisted of a whole group discussion of learning needs to be addressed in a future workshop.
RESULTS: Seventeen participants completed pre-workshop, post-workshop, and 3-month post-workshop questionnaires with 76% being female, all of which were based in an urban area. Identified benefits of CoPs included: networks of knowledge; sharing of ideas, experience, & knowledge; exposure to different practices, areas and backgrounds; and a general increase in knowledge. Barriers included lack of time; inability to implement ideas; lack of access to specialists; and difficulty in defining and understanding roles and expectations. Among the participants, previous experience in CoPs was wide ranging and covered many topics and areas of specialization. Three months post workshop a decrease in the use of CoPs was reported although a strong interest in future CoPs was indicated.
CONCLUSION: CoPs were perceived as beneficial but difficult to implement on an ongoing basis. Improved efficiency in the application of this method of continuing professional development in required.
DISCLOSURE: The authors have relationships with and conduct clinical trials with: Abbott, Allelix NPS, Amgen, Anika, Astra Zeneca, Boehringer Ingelheim, Bristol Myers, Centocor, Merck, Novartis, Pfizer, Roche, Health Canada, MOHLTC (Ontario), and Sunnybrook and Women's College Health Sciences Centre Department of Medicine and Clinical Integrative Biology.

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PREVALENCE OF NON STEROIDAL ANTI-INFLAMMATORY USE AMONG ALBERTA SENIORS Jian Sun, Katherine Gooch, Larry Svenson, Kelly Novak, Walter Maksymowych, Cy Frank (Institute of Health Economics, Alberta Health and Wellness, University of Alberta, University of Calgary)

Purpose: To describe the prevalence and cost of non-steroidal anti-inflammatory drug (NSAIDs) use including cyclooxygenase 2 specific inhibitors (COXIBs) among patients 65 years and older in Alberta. METHODS: NSAID utilization information was extracted from the 2000-2003 Alberta Blue Cross administrative database, which included the Drug Identification Number (DIN), prescribed drug quantity, patient's gender and birth date. Age-gender distributions of the mid-year Alberta population from 2000 to 2002 were extracted from the Alberta Health Care Insurance Plan registry file. Drug unit prices were obtained from the 2003 'Alberta Health and Wellness Drug Benefit List'. Age-gender specific prevalence rates and costs of the overall NSAID and COXIB uses were calculated with these data. Results: Approximately 90,000 seniors were prescribed NSAIDs every year. Of these, 70% were prescribed at least one type of COXIB. Average annual prevalence of overall NSAIDs and COXIBs uses were 29% and 20%, respectively. Annual costs for the overall NSAIDs were (in millions) C$16.3, 19.2 and 17.3. Annual costs for COXIBS (in millions)were C$13.0, 16.3 and 14.5. Women used NSAIDs more than men (1.5 times in number and 1.8 in cost).
Conclusion: Although the prevalence of NSAID use decreased in 2002-2003, the total annual cost was still higher than in 2000-2001. From 2000 to 2003, about 30% of Alberta seniors used NSAIDs, which is higher than found in other published reports.

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POPULATION BASED SURVEY RESULTS ON SYMPTOMATIC PRE-RADIOGRAPHIC KNEE OSTEOARTHRITIS Jonathan Mills, Jolanda Cibere, Jacek Kopec, Anona Thorne, Joel Singer, Hubert Wong, Peter Munk, Savaas Nicolaou, Charles Peterfy, Ali Guermazi, Sherry Trithart, John Esdaile (Arthritis Research Centre, Vancouver, BC, University of British Columbia, Vancouver, BC, Vancouver General Hospital, Department of Radiology, Vancouver, BC, Synarc, Inc., SanFrancisco, CA)

Purpose: To contrast pre-radiographic and radiographic symptomatic knee OA.
Methods: As part of a population-based study of knee pain, 148 persons (aged 40-79) were diagnosed with OA on magnetic resonance imaging (MRI), using a 1.5 Tesla scanner (sagittal T1 3-D spoiled gradient echo with axial and coronal reformat images and coronal T2 fast spin echo with fat saturation). Standardized fixed-flexion PA radiographs were obtained with a positioning frame. Supine skyline radiographs were also obtained. Subjects were classified as pre-radiographic (Kellgren Lawrence [KL]<2) and radiographic (KL≥ 2). Pre-radiographic OA was subclassified based on MR cartilage (MRC) grade, scored from 0-4, into mild (MRC≤ 2); and severe (MRC≥ 3), using the worst of six knee joint surfaces evaluated. Participants underwent a standardized history, physical examination and risk factor assessment, and completed WOMAC and SF-36 questionnaires. X-rays and MRI were read separately and blinded to clinical and other radiographic information. Quality of life (QoL) questionnaires were evaluated for between-group differences using Mann-Whitney's U. Multiple linear regression modeling established the contributions of OA severity to self-reported disability using WOMAC function as the dependent variable.
Results: Persons with pre-radiographic (n=93) compared to radiographic OA (n=55) were younger (56 vs. 64 years, p<0.0001), had a lower BMI (26 vs. 28 kg/m2, p=0.006), had a shorter history of stiffness (6 vs. 9 years, p=0.005), a shorter history of pain (6 vs. 11 years, p=0.007), and lower median scores for WOMAC pain (66 vs. 108, p=0.02), stiffness (31 vs. 59, p<0.001) and function (150 vs. 396, p<0.001). Higher median scores were observed for pre-radiographic OA subjects in all SF-36 domains except social function, but only SF-36 physical function demonstrated a statistically significant difference from radiographic OA (80 vs. 65, p=0.001). Persons with mild pre-radiographic (n=44) compared to severe pre-radiographic OA (n=49) were younger (53 vs. 58, p=0.005), but had similar median scores for WOMAC and SF-36 health indices.
In univariate linear regression analysis, radiographic OA severity, BMI, WOMAC scores, and SF-36 indices were statistically significant predictors of disability. In the final multiple linear regression model, only WOMAC pain, WOMAC stiffness, SF-36 role limitations due to emotional problems, and BMI remained as significant predictors of disability; together they explained 78% of the variance. Age and gender were not significant predictors of disability.
Conclusions: Persons with pre-radiographic vs. radiographic knee OA were clinically distinct. They were younger, weighed less, had a shorter history of stiffness and pain, and experienced less impairment in quality of life. Radiographic OA severity was a significant predictor of disability in univariate analysis. When BMI, pain, stiffness and role limitations due to emotional problems were included, radiographic OA severity did not offer additional information with respect to disability level.

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JUVENILE IDIOPATHIC ARTHRITIS IN INDO-CANADIAN CHILDREN Reem Abdwani, Ross Petty (British Columbia's Children's Hospital, Vancouver, BC)
Most descriptions of juvenile idiopathic arthritis (JIA) are derived from study of populations of Caucasian extraction. However, reports of arthritis in children from Asia describe a lower proportion of children with oligoarthritis, with a male predominance, and low prevalence of antinuclear antibodies (ANA) and chronic anterior uveitis.
Objective:To compare the reported characteristics of children with chronic arthritis in India with those in children of Indian parentage (Indo-Canadian) who live in Vancouver.
Methods: A retrospective chart review identified 21 Indo-Canadian children seen in the Pediatric Rheumatology clinic at BCCH from July 2003-June 2004: 15 had oligoarthritis, 4 had enthesitis related arthritis (ERA), and 2 had polyarthritis (rheumatoid factor negative); no child had systemic, psoriatic, or rheumatoid factor positive polyarthritis. These children are compared to those in India reported by Aggarwal et al. (Indian Ped 2004)
Results and Discussion:

Residence	Criteria	Oligo (M:F)	Poly (M:F)	Systemic (M:F)	ERA (M:F)
India	ACR	76 (63:13)	93 (46:47)	45 (26:19)	0
% of Total		35.5%	43%	21%	
Canada	ILAR	15 (7:8)*	2 (1:1)*	0	4 (4:0)
% of Total		71%	10%	-	19%

* Also meet ACR criteria for respective onset groups

The spectrum of oligo JIA in India differs from that in our Indo-Canadian population. In our Indo-Canadian population, the ratio of M:F is 7:8 whereas, in the Indian population, there was a marked male predominance (63:13). The mean age at onset of oligoarthritis in our Indo-Canadian population was 1.9 years compared to 10 years in the Indian population. The most frequently involved joints in our Indo-Canadian group were knee (93%) and ankle (40%); while in the Indian population, ankle (75%) involvement predominated, followed by knee (63%), SI joint (38%), and hip (28%). These characteristics suggest the inclusion of children with ERA in the study from India; this category accounted for 19% of the Indo-Canadian group.

In the Indo-Canadian population, oligo JIA accounted for most patients (71%), whereas in the report from India, only 35.5% of the children with JRA had oligoarthritis. Since it is likely that this group included children with ERA, it appears that the proportion of children living in India with oligoarticular JRA or JIA maybe even lower. Chronic anterior uveitis was present in 1 Indo-Canadian child with ANA negative polyarthritis, and was reported in 4 Indian children with ANA negative polyarthritis. No child with oligoarthritis in either group had uveitis.

Conclusion: Ethnic variation of expression of JIA is well documented. However, whether these differences are environmental, cultural or biologic is not known. Although the numbers of Indo-Canadian patients in the present retrospective study are small, comparison with published data of children living in India, suggests that patterns of referral and care, rather than genetics, may account for these apparent differences.

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HORMONE REPLACEMENT THERAPY IN WOMEN WITH SLE AND RISK OF CARDIOVASCULAR DISEASE Jackie Hochman, Dominique Ibanez, Murray Urowitz, Dafna Gladman (University of Toronto Lupus Clinic, Toronto Western Hospital, University Health Network)

Recent studies have shown that hormone replacement therapy (HRT) does not confer cardioprotection and may, in fact, increase the risk of cardiovascular events. The aim of this study was to determine the impact of HRT on the incidence of coronary heart disease (CHD) in women with SLE using a nested case-control design.

Methods: Since 1970, SLE patients of the Toronto Lupus clinic have been followed prospectively at 2-6 month intervals. At each visit, patients are assessed according to a standardized protocol including demographic features, clinical and laboratory features of SLE, medication use, menopausal status, and CHD. All information is entered into a computer database. The database was searched for women who had taken HRT with no history of CHD at the start of HRT. CHD was defined as angina or myocardial infarction (MI). Only the first manifestation of CHD was analyzed in each patient. Patients with HRT use were matched to female patients from the same cohort with no history of HRT use, according to age at SLE diagnosis, disease duration, and duration of follow up. Disease duration was identified at 1st clinic visit, start of HRT, and last clinic visit. The equivalent dates were found for controls. The McNemar and paired t-tests were used to compare the risk factors of CHD in HRT users versus non-users. Analyzed variables included SLEDAI-2K at 1st visit, AMS at start HRT, hypertension, hypercholesterolemia, smoking history, antihypertensive use, and lipid lowering drug use. As well, SLE treatment at start of HRT was assessed including steroids, antimalarials, immunosuppressives.

Results: Of the total 1161 patients registered in the database, 117 patients were identified as HRT-users with no history of CHD at the start of HRT. These HRT users were compared with 117 matched controls. The control group was similar to the HRT group in matched factors: age at SLE diagnosis; disease duration at 1st clinic visit (4.2 ± 5.8 vs 3.8±5.7), at start of HRT (12.2±11.7 vs 13.9±10), at last clinic visit (20.6±11.3 vs 19.2±10.4); and in length of follow up (16.4±9.5 vs 15.3±8.8). The groups were also similar in disease activity, cardiovascular risk factors, and medication use. However, they differed in menopausal status. All HRT users were post-menopausal versus 47% of controls. Interestingly, the same number of patients, 13(11.1%), developed CHD in both the control and HRT groups. Even when only post-menopausal controls were considered there was no difference in the frequency of CHD in the two groups.

Conclusion: The prevalence of CHD was the same in 117 post-menopausal, SLE patients with a history of HRT use when compared to 117 matched controls. Based on this factor, we expected to find a lower prevalence of CHD in the control group. In this small group of patients with SLE, HRT did not appear to predispose to CHD.

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PREGNANCY EXPERIENCE OF RA PATIENTS ON GOLD Mohamed Almarzouqi, Alice Klinkhoff, Deborah Pack (University of British Columbia, Vancouver, BC, Mary Pack Arthritis Centre, Vancouver BC, Mary Pack Arthritis Centre, Vancouver BC.)

Objective: To describe the pregnancy experience of women with RA followed in a dedicated gold clinic.

Methods: Information regarding pregnancy experience, patient, disease, and treatment was taken from the patient record and supplemented by interview of consenting patients.

Results. Between 1997 and 2004 13 women have experienced 18 pregnancies while being followed in our gold clinic. Mean age at time of first gold pregnancy was 33.8 years (24-38), disease duration, 4.7 years (1.5-10) and RF + in 10/13.There were 13 live births and 5 first trimester spontaneous abortions (SA), two of these in a patient with a Robersonian chromosomal translocation. Duration on gold prior to each pregnancy was <12m in 8, 13-24m in 6 , and 3-7 years in 4 pregnancies. The dose of gold was 25-50 mg/wk in 12, 60 mg/wk in 1, and 5-10 mg/wk in 5 at the time of planning pregnancy. Methotrexate had been discontinued in 6 women 6-16 months (mean 11m) prior to conception . Time to conception was <3m in 10, 5-12m in 4, 36m in 1, and in 3 pregnancy was unplanned. Gold was continued throughout pregnancy in 3 (dose 5-10 mg /wk), discontinued 3-5 weeks after conception in 13, and 2 discontinued prior to conception by 7 months in one and by 2 weeks in the other. One who continued gold during pregnancy, also continued hydroxychloroquine. One added sulfasalazine early in pregnancy after discontinuing gold. RA worsened during successful pregnancy in 2/13, remained controlled on gold in 3/13, remained controlled without DMARD in 7/13 and was controlled in 1 who replaced sulfasalazine with gold early in pregnancy.During pregnancy 3 patients used prednisone at a dose of 5-10 mg daily in one, 3-10 mg daily in one and 2 mg prn in one. RA flared 1-12 weeks post-partum and 2-6 weeks post SA in 15 pregnancies. One who remained on gold during pregnancy, 1 who took sulfasalazine in pregnancy, and one who stopped gold 2 weeks prior to conception, while in remission, did not experience post-partum flares. Gold was resumed 1-24 weeks post-partum and 2-6 weeks post SA in 15/18 pregnancies.One who stopped gold prior to conception, and one who replaced gold with sulfasalazine, remained controlled post-partum without further gold therapy. Pregnancy complications included hypertension in one requiring induction at 36 weeks, and hyperemesis and hypertension in one. Babies were healthy, mean weight 7.6 lb in 12 full term and 5.7lb in one induced at 36/wk. Of 13 babies, 1 had cysts blocking his tearducts and one was mildly affected by an inherited weakness of extraocular muscles, Duane's syndrome.

Conclusion. In our experience gold is a safe DMARD for women planning pregnancy.

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RELATIONSHIP BETWEEN MYOCARDIAL PERFUSION AND ENDOTHELIAL FUNCTION IN SYSTEMIC LUPUS ERYTHEMATOSUS Nikpour, M., Urowitz, M., Gladman, D., Ibanez, D., Harvey, P., Iwanochko, RM (University of Toronto Lupus Clinic & Division of Cardiology, University Health Network)

Background: 35% of patients with SLE without a history of coronary artery disease (CAD) have abnormalities on myocardial perfusion scintigraphy (MPS) reflecting a high prevalence of sub-clinical CAD. Endothelial dysfunction is postulated to be a precursor to coronary atherosclerosis in SLE. Brachial artery flow-mediated vasodilation (FMD) measured using high-resolution external vascular ultrasound is a validated index of systemic endothelial function.

Aim: To determine the relationship between endothelial function measured using brachial artery ultrasound and myocardial perfusion measured scintigraphically in women with SLE.

Method: This was a prospective study of 92 women with SLE, excluding those with clinical CAD. Patients had assessment of endothelial function using brachial artery external vascular ultrasound. Endothelium-dependent flow mediated (FMD) and endothelium-independent (EID) vasodilation were measured. Reduced FMD was defined as <6.6% increase, and reduced EID as <13.3% increase from baseline diameter following hyperemia and GTN respectively. These values were based on mean minus1SD FMD and EID measured in 15 healthy premenopausal women studied under identical experimental conditions. All patients also underwent MPS using SPECT 99mTc-sestamibi at rest and after dipyridamole-exercise stress. Myocardial

scans were interpreted using a standardised scoring system. Summed stress score (SSS) was obtained by adding the scores of 20 designated segments of 'stress' images. SSS ^{3} 1 was indicative of a perfusion defect. Kappa (K) statistics were used to determine the agreement between FMD and SSS, EID and SSS as well as FMD and EID.
Results: 21(22.8%) had reduced FMD (mean ± SD; 11.3% ± 7.7%), and 31(33.7%) had abnormal SSS (mean ± SD; 1.37 ± 2.4). In 36(39.1%) patients there was discordance between FMD and SSS (23[25.0%] had abnormal SSS with normal FMD and 13[14.1%] had normal SSS with reduced FMD). There was no agreement between FMD and SSS (K = 0.05). 44(47.8%) patients had an abnormality in either FMD or SSS or both. In 34(37.0%) patients there was discordance between EID and SSS (K = 0.21, 95% CI: 0.1 to 0.41). There was poor agreement between FMD and EID (K = 0.17).
Conclusion: There are several possible explanations for the discordance between FMD and MPS. Reduced FMD with normal MPS is in keeping with the hypothesis that endothelial dysfunction is a precursor to myocardial ischemia, whereas normal FMD with abnormal MPS may reflect external influences such as disease factors or therapy at the time of study, which may lead to 'pseudo-normalisation' of FMD. Our findings indicate that brachial FMD and MPS may be independent investigations in assessing the cardiovascular health of patients with SLE. When used in combination, brachial FMD and myocardial scanning identify 47.8% of patients with SLE who may be at risk of developing clinical CAD. Abnormal EID in the presence of normal FMD may define a subset of patients with SLE who have smooth muscle dysfunction.

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OUTCOME MEASUREMENTS IN SCLERODERMA Hashim Gazi, Janet Pope (University of Western Ontario, London, ON , University of Western Ontario, St. Joseph's Health Care, London, ON)
Objective: To obtain a consensus on the minimal clinically important difference (MCID) in various scleroderma disease outcome measures to be used in future clinical trials. METHODS: A Delphi consensus building exercise was employed in the administration of a survey that was sent out to members of the scleroderma clinical trials consortium (SCTC). The 65 SCTC members were divided into two groups. Group 1 was informed of the current MCID for rheumatoid arthritis. The first round of the exercise presented the scleroderma experts with a survey composed of 95 questions/clinical scenarios divided into 8 categories. These included situations where the treatment group improved, or worsened, or where some outcome measures improved, while others worsened. From the responses of this first round, a mean, mode, median and range of responses for each of the 95 questions was obtained. This information was sent out, in the second round of the Delphi exercise, only to those respondents who answered the first round. It gave them the option of changing any of their initial responses. The median of their responses was used to calculate the final values for the MCID (or acceptable final scores) following treatment. Results: Thirty-one of the 65 SCTC members returned the first round of the Delphi exercise. Twenty-one of these 31 members returned the second round. The first 5 sections of the survey presented several questions regarding the 5 main outcome measures considered. With respect to the modified rodnan skin score (MRSS), the median response to one of the questions gave an MCID value of at least 32% improvement over baseline (a skin score of 20), in order to consider the drug to have worked. To define improvement using the health assessment questionnaire (HAQ), the respondents required an improvement in score by at least 0.25 units. Worsening by at least 0.22 units in the HAQ score would signify deterioration in the patient's condition. For both patient and physician global assessment, if 20% of patients on placebo reported improvement, at least 40%, of the patients on active drug would need to improve for the drug to be considered useful. The survey yielded an MCID value of 10% predicted for defining improvement in diffusion lung capacity for carbon monoxide (DLCO). In the second round of the Delphi exercise, 447 out of the 1356 questions answered (33%) were changed by the respondents to a value closer to the median/average of the first round's responses. Individually, of the 95 questions asked, one respondent changed 60% (maximum change) of his previous responses, while another changed 7.5% (minimum change) of his answers. There was not an appreciable difference in the responses of the two groups except in a section of the survey that directly asked for the MCID in 32 brief scenarios (group 1 required a lower MCID). Conclusion: This study served to address the current deficiency in our knowledge of appropriate values for the MCID in various scleroderma disease outcome measures.

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PROGNOSTIC FACTORS AND MORTALITY IN CANADIAN PATIENTS WITH SCLERODERMA: RENAL INVOLVEMENT IS A STRONG PREDICTOR OF DEATH Firas Al-Dhaher, Janet Pope (The University of Western Ontario, London, ON)
Purpose: To describe the morbidity and mortality in Canadian scleroderma patients seen in a scleroderma clinic serving Southwestern Ontario, focusing on gender, scleroderma type, and organ specific prognosis in a prospective cohort of patients seen from 1994 to 2003.
Methods: All patients seen in the scleroderma clinic were entered into a database. Prognostic factors important in determining survival in scleroderma were computed using odds ratios, and contingency and life table analyses with survival plots.
Results: 186 scleroderma subjects (159 females), 66% with limited SSc were included. Thirty % of females had diffuse scleroderma, compared to 70% of males. Males had an earlier onset of disease with respect to females (41.3 ± 2.6 vs. 49.7 ± 1.2, respectively, $p < 0.008$). Males with Scleroderma died at median of 44.6 ± 7.9 yrs (23% deceased with a median follow-up of 7 ± 5.3 yrs) vs. 66.2 ± 2.4 for females (22% died with a median follow-up of 5.5 ± 1.6 years). A strong realationship between death and renal involvement is seen overall in males (OR 9.5 [95% CI 1.1-82.7], $p < 0.04$,) but not females (OR 1.7 [95% CI 0.6-5.2,] $p < 0.4$), where 23% of patients were male (vs. 15 % in overall cohort). Diffuse patients died earlier than those with limited SSc (58.4 years ± 3.7 age at death with 6.8 ± 1.5 years disease duration in diffuse vs. 68.4 years ± 3.5 age at death with 11.9 ± 2.8 years disease duration in limited). Diffuse patients had more renal involvement ($p < 0.002$) and shorter life spans ($p< 0.09$) compared to limited patients. Sixty-seven % were ANA+ in limited and 62% in diffuse. Thirty-one % of patients with renal crisis symptoms died (8 out of 26 renal patients). Those with renal involvement had the lowest median survival of 1.5 ± 0.8 years vs. non-renal involvement ($p < 0.008$); however, surviving renal patients have a follow-up of 9.0 ± 1.1 years. This survival was worse compared to PAH involvement, where 26% of patients with PAH died (11 of 41), with a median survival of 5.2 ± 1.6 years, and a follow-up of 8 .1± 1.6 years for live patients with PAH. ANA+ was associated with more cardiac abnormalities ($p < 0.008$). Forty-seven % of patients with cardiac involvement have died, with a median survival of 6.5 ± 1.9 years and median follow-up of 9.5 ± 1.0 years for remaining patients. Median survival for ILD was 6.0 ± 2.3 years
Conclusion: Despite aggressive recent advances in treatment of scleroderma renal crisis, renal involvement in scleroderma is still strongly associated with mortality with 31% of patients dying with a median time of 1.5 years.

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KAWASAKI DISEASE IN TWO CHILDREN WITH ACUTE LEUKEMIA SERDAR CANTEZ, RAE S. M. YEUNG (Division of Rheumatology, The Hospital For Sick Children, University of Toronto)
Background: Kawasaki Disease (KD) is an acute vasculitis affecting primarily young children. The diagnosis of the KD is made with: Prolonged fever, and presence of four out of the following 5 criteria, nonexudative conjunctivitis, cervical lymphadenopathy, rash, oral mucosal changes and peripheral extremity changes. Although the etiology of the KD is not known, the immune system is intimately involved in disease development with activation of the immune system well documented during the acute phase of the disease.
Objectives: Define the clinical and laboratory characteristics and coronary outcome of two patients, who developed KD during cytotoxic treatment for their leukemia.
Method: A detailed chart review documenting the clinical presentation, laboratory features, response to treatment and coronary outcome was undertaken.
Results: Patient 1, a 1.4 year old boy, diagnosed with acute lymphoblastic leukemia (ALL), presented with fever 16 months after the initial diagnosis, when he was on maintenance treatment with IV/IT methotrexate, vincristine and 6-mercaptopurine. He remained febrile for four days with negative cultures. Despite the broad-spectrum antibiotics for febrile neutropenia, he developed the following clinical findings consistent with KD: bilateral conjunctivitis, oral mucosa changes, rash and extremity changes. His bloodwork revealed WBC 700/mm^3, poly count 100/mm^3, lymphocyte

count 490/mm^3, platelet count 290.000/mm^3, ESR 96 mm/h, IgG 5.5 g/l. Initial ECHO revealed coronary ectasia and dilatation in the left coronary artery (LCA) and proximal right coronary artery (RCA). After treatment with IVIG, fever and acute KD features resolved immediately. Patient 2, a 7.1 year old girl, one month after a diagnosis with acute myeloblastic lymphoma (AML), during induction chemotherapy, developed fever lasting for 9 days with no evidence of infection. She had bilateral conjunctivitis, cervical lymphadenopathy, oral mucosa changes, rash and extremity changes. Her laboratory findings revealed WBC 1100/mm^3, lymphocyte count was 770/mm^3, poly count was 150/mm^3, platelet count was 237.000/mm^3, ESR 77 mm/h, IgG 6.3 g/l. ECHO performed at that time, showed mild ectasia in the RCA. Her fever resolved immediately with IVIG treatment, but fever recrudescence 3 days later required retreatment with IVIG resulting in complete resolution of fever and acute symptoms. Follow-up echos showed complete resolution of coronary artery lesions in both patients.
Conclusion: KD is a systemic vasculitis characterized by massive immune activation. It is interesting, that even under vigorous cytotoxic treatment and consequently neutropenia and lymphopenia, KD can develop. The coexistence of white cell malignancy and KD may lead to better insight to the pathogenesis of KD.

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INTRA- AND INTERRATER RELIABILITY OF THE GLOBAL RADIOGRAPHIC SCORE 10 (GRS-10) IN SURGICAL PATIENTS WITH OSTEOARTHRITIS (OA). Jolanda Cibere, Nelson Greidanus, Donald Garbuz, Paul Doerfling, Eric C. Sayre, John Esdaile, Jacek A. Kopec (Arthritis Research Centre of Canada, Vancouver, BC)
Purpose: To assess the intra- and interrater reliability of the GRS-10, a novel x-ray grading system, and to compare its reliability with the Kellgren-Lawrence, joint space narrowing (JSN) and osteophyte grading, three commonly used grading systems that allow for only a limited range of x-ray findings in surgical OA patients.
Methods: The GRS-10 was developed to allow scoring of knee and hip x-rays on a 0-10 point scale. The score is based on a global impression of degree of degenerative changes using the percentage of joint space narrowing in the worst compartment as a main feature for grading. Knee and hip radiographs were evaluated by a rheumatologist and 2 orthopedic surgeons for the GRS-10 score, Kellgren-Lawrence grade (0-4) (using the 1963 atlas) and for individual grading of JSN (0-3) and osteophytes (0-3) (using the atlas by Altman et al). Each radiograph was scored blinded and independently by the 3 readers. Radiographs were re-read by each reader 3 months later. Radiographs were obtained from subjects on a surgical waiting list. Control radiographs with normal to moderate OA were included to reduce reader bias but were removed from the analysis to prevent overestimating the agreement between readers. Intra- and interrater reliabilities were calculated for each of the 4 scoring systems using intraclass correlation coefficients (ICCs).
Results: Radiographs from 78 hip and 36 knee surgical wait list patients were read. 76% of hip and 76% of knee x-rays were rated as Kellgren-Lawrence grade 3 or 4. For the GRS-10, agreement amongst readers within 2 points was seen for 68% of hip x-rays and 75% of knee x-rays; agreement within 3 points was seen for 90% of hip and 92% of knee x-rays. For Kellgren-Lawrence, JSN and osteophyte scoring, agreement amongst readers within 1 point was present for 91%, 95% and 74% for hip readings and for 97%, 100% and 89% for knee readings, respectively. The mean intrarater ICCs were highest for GRS-10 (0.79 for hip, 0.82 for knee) and ranged from 0.54 to 0.72 for hip and knee Kellgren-Lawrence, JSN and osteophyte scores. The interrater ICCs are shown in the following table:

	Interrater ICCs	
	Hip	Knee
GRS-10	0.65	0.74
Kellgren-Lawrence	0.61	0.72
JSN	0.60	0.69
Osteophytes	0.36	0.62

Conclusions: Reliability for knee x-ray grading is higher compared to hip for all scoring methods. The intra- and interrater reliability of the GRS-10 is superior to traditional methods of x-ray scoring in surgical patients. Further validation of this novel radiographic scoring system is required in non-surgical OA populations.

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THE EFFECTS OF LEFLUNOMIDE ON SYSTOLIC AND DIASTOLIC BLOOD PRESSURE: DOES LEFLUNOMIDE INCREASE BLOOD PRESSURE IN THE PRACTICE SETTING? Christopher Kitamura, Vivian Bykerk, Edward Keystone, Hong Chen (University of Toronto Student, Assistant Professor University of Toronto, Professor University of Toronto, UHN Research)
Objective: To quantify the effects of leflunomide (LEF) on systolic and diastolic blood pressure in a rheumatology practice setting, and investigate the effects of potential confounders such as gender, age, and concomitant drug therapies. Methods: A retrospective chart audit of 124 rheumatoid arthritis patients from two university academic clinics was undertaken. Inclusion criteria included rheumatoid arthritis patients who had been administered LEF in the past 5 years. Results: 12.9% of patients were found to have a >10% increase in systolic and diastolic blood pressure by 12 (+/-2.22) months following treatment initiation. The proportion of patients who were hypertensive (defined as >140/90 mmHg criterion) increased from 6.45% prior to LEF treatment to 12.90% following treatment. Overall systolic and diastolic blood pressures for the entire cohort increased by 3.12% (+/-2.47, p=0.14) and 2.72% (+/-2.34, p=0.13) respectfully. Using the variance ratio test (F-test), patient age contributed to a statistically significant increase of systolic (p<0.05) or diastolic (p<0.05) blood pressure, as patients aged >65 were more likely to experience systolic, 13.58% (+/-8.85, p=0.08), and diastolic, 10.78% (+/-7.36, p=0.16), blood pressure increases than younger patients. NSAID therapies did not contribute to the elevation of systolic (p=0.15) or diastolic blood pressure (p=0.24). Mean systolic and diastolic increases were 3.89% (+/-3.17, p=0.09) and 3.86% (+/-3.24, p=0.09) respectfully for patients taking NSAID therapies, compared to 2.03% (+/-3.96, p=0.37) and 1.09% (+/-3.28, p=0.45) for those not taking NSAIDs. Gender did not predispose patients to increases in either systolic (p=0.14) and diastolic (p=0.29) blood pressure. Women experienced changes of systolic, 3.94% (+/-2.73, p=0.12), and diastolic, 3.78% (+/-2.55, p=0.19), blood pressure, but this was not statistically significant. In males there was no change in systolic (-1.41% (+/-5.37, p=0.89)), or diastolic (-0.10% (+/-5.87, p=0.72)), blood pressure.
CONCLUSIONS: In our retrospective cohort, clinically significant increases in systolic and diastolic blood pressure were seen with a greater frequency than reported in clinical trials, which report a 5% incidence of hypertension. Out data suggest that patients aged >65 should be closely monitored for significant increases in blood pressure if prescribed LEF.

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UTILIZATION OF A RHEUMATOLOGY EXPERT NURSE IN EARLY RHEUMATOID ARTHRITIS CLINIC: Majed Khraishi, Karen White (Memorial University of Newfoundland, St. John's,Nl, St. Clare's Mercy Hospital, St. John's, NL)
Purpose: To document the effectiveness of a rheumatology expert nurse in diagnosis and management of early rheumatoid arthritis (RA) patients who are referred to a rheumatology clinic in an academic center.
Methods: The primary objective of the study is to evaluate the effectiveness of a rheumatology specialist nurse in identifying early RA patients under the supervision of a rheumatologist)
The secondary objective is to estimate the utility of early RA clinic in:
- shortening the waiting list for these patients
- accelerating the initiation of much needed disease modifying antirheumatic drugs (DMARDS)

The study is done in a prospective manner. An "Early RA Clinic" is scheduled once a week. Family physician referrals are triaged by the rheumatologist and potential inflammatory arthritis patients are identified. These patients are then contacted and are initially seen in the clinic by the Rheumatology nurse. Each patient completes a HAQ,the nurse then takes history, does a detailed joint count and records the vital signs . These findings are then verified by the rheumatologist. The concordance of the data gathered by the two examiners is documented. Once an appropriate therapy is prescribed, the nurse will then educate the patient re:
- disease process
- therapy (importance of compliance, possible side effects, storage and administration of drug)
- community support services

Additional data collected include:
- time elapsed from referral to the rheumatology assessment
- HAQ scores

• geographical distribution of referrals

Results: This interim analysis includes baseline data for the first 35 patients were seen in the first 5 months. Participants were 72.7% female and all Caucasian, with a mean age at baseline of 52.7 years (+/-12.4years).Sixteen patients were diagnosed with RA (45%), 5 with PSA, 4 have inflammatory arthritis or other connective tissue diseases, 4 with OA, 1 with fibromyalgia and the rest had no definite diagnosis made. The time elapsed from referral by GP to assessment averaged 83 days. Concordance with the joint count of the nurse and the rheumatologist was nearly 80%)

Conclusions: Utilization of a well trained rheumatology nurse in identifying early RA patients may be a useful and effective approach to reducing the waiting time of undiagnosed and untreated patients.

Such expert nurses may play significant role in under-serviced areas by screening patients and accelerating assessments and therapy initiation by rheumatologists.

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MELOXICAM AND IBUPROFEN ASSOCIATED MINIMAL CHANGE DISEASE WITHOUT INTERSTITIAL NEPHRITIS: CASE REPORT AND REVIEW OF THE LITERATURE Genevieve Law, Dr. Caroline Patterson, Dr. Gaylene Hargrove (University of Alberta, Edmonton, Alberta, UBC, Vancouver, BC)

Nonsteroidal anti-inflammatory drug (NSAID) therapy has been associated with a risk of renal complications due to the direct toxic effects of these drugs and to the indirect disruption of renal prostaglandin synthesis. In select patients, NSAIDS have induced electrolyte imbalance, fluid disorders, acute renal failure, and renal papillary necrosis. This case study focuses on nephrotic range proteinuria as a result of NSAID exposure. The majority of NSAIDS (ibuprofen, fenoprofen, piroxicam, diclofenac, tolmetin, naproxen, zomepirac, indomethacin) and one COX-2 inhibitor (celecoxib) have been reported to cause the typical pattern of NSAID-related nephrotic syndrome: minimal change disease (MCD) with an accompanying interstitial nephritis. Only nine clinical cases have noted isolated minimal change disease following NSAID use. This case serves as the first example of a minimal change nephrotic syndrome, with no evidence of interstitial inflammation, occurring secondary to the combined treatment of ibuprofen and a COX-2 inhibitor (meloxicam). This report has indicated that NSAIDS and COX-2 inhibitors have the propensity to cause heavy proteinuria and MCD lesions with or without interstitial nephritis. Therefore, taking a thorough drug history is crucial in adults and elderly persons presenting with MCD to rule out a drug induced renal syndrome.

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CORONARY ANGIOGRAPHIC FINDINGS IN SYSTEMIC LUPUS ERYTHEMATOSUS Nikpour M., Gladman D., Ibanez D,, Urowitz M. (University of Toronto Lupus Clinic, Toronto Western Hospital, University Health Network)

Background: Observational cohort studies have shown that SLE is associated with accelerated coronary artery disease (CAD). It has been shown that in patients with SLE who do not have a history of symptomatic CAD, myocardial perfusion defects correlate poorly with angiographic findings, suggesting mechanisms of silent myocardial ischemia other than vessel occlusion due to plaque.

Aim: To determine the indication for and the nature of abnormalities on coronary angiography in patients with SLE, who underwent coronary angiography in the course of clinical care.

Method: We reviewed the medical records of all patients attending the University of Toronto lupus clinic who underwent coronary angiography in the course of clinical care from January 1979 to September 2003 inclusive, noting the indication for coronary angiography and the nature of abnormalities as well as patient age, sex, disease duration, disease activity and cardiovascular risk profile at the time of angiography. An abnormal angiogram was defined as a study which showed plaque in one or more main coronary vessels. A 'plaque' was defined as a localized narrowing in a coronary vessel.

Results: 35 patients [7(20%) male and 28(80%) female] with SLE underwent coronary angiography in the twenty-five-year interval at the Toronto lupus clinic (cohort of 1100 patients). The most common indication for angiography was coronary symptoms including angina, MI or CHF [30(86%) patients]. Other indications were further investigation of an abnormal myocardial scan performed as part of a research study in asymptomatic patients [4(11%)] and 'work-up' pre aortic valve surgery [1(3%)]. 18(51%) patients had normal and 17(49%) patients had abnormal angiograms with atheromatous plaques. 13/30(43%) symptomatic patients had no plaques on coronary angiography. Of the 17 patients with an abnormal angiogram, 6/17 had single-vessel, 4/17 had two-vessel and 7/17 had triple vessel disease. Overall the lesions were discrete and located proximally in the coronary vessels. There was no statistically significant difference between the normal and abnormal angiogram groups in baseline demographics, disease duration, cumulative steroid dose or cardiovascular risk profile at the time of study. There was a trend toward a significant difference in disease activity measured by SLEDAI at the time of angiography (3.9±3.9 vs 7.0±5.4, p=0.06) in groups with normal vs abnormal angiograms.

Conclusion: In this retrospective study 43%(13/30) of patients with documented coronary syndromes had no atherosclerotic lesions on coronary angiography, indicating mechanisms of ischemia other than stenotic plaques. While the prognosis in these cases of 'non-occlusive' coronary artery disease merits investigation in prospective studies, this study suggests that the natural history of such cases may not be benign as evidenced by the 13 patients in our study who had well documented coronary syndromes yet no plaques on angiography.

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HIGH LEVELS OF DISTRESS IN PATIENTS WITH EARLY INFLAMMATORY ARTHRITIS (EIA) Karl Looper, Murray Baron, Phyllis Zelkowitz, Margaret Purden, and the Mcgill Early Arthritis Research Group. (McGill)

Objective:Assess emotional distress and its relationship to disease characteristics in EIA.

Methods: Data was obtained from the first 66 patients enrolled in the McGill Early Arthritis Registry. Patients were required to have synovitis in >1 joint for >6 weeks and <1 year. Patients were excluded if their synovitis was due to any diagnosis other than rheumatoid arthritis. Rheumatologists provided a global disease severity rating (0-10 scale). The 68 tender and 66 swollen joint counts were recorded. All patients completed the following measures: Centre for Epidemiological Studies Depression scale (CES-D), Self-reported Comorbidity Questionnaire (SCQ), Health Assessment Questionnaire (HAQ), and self-report numerical rating scales of fatigue, pain, and disease activity.

Results: The mean CES-D score was 15.2 (sd=10.7). 42% were above the standard cut off of 16 indicating depression, and 34% were above the more stringent cut off score of 19. Only 13.6% acknowledged having a comorbid diagnosis of depression on the SCQ, and only 4.5% reported concurrent treatment of depression. The CES-D score correlated with the HAQ (r=0.3. p<0.05), number of tender joints (r=0.46, p<0.001), and self-reported measures of fatigue (r=0.49, p<0.01), pain (r=0.42, p<0.01), and disease activity (r=0.28, p<0.05), but did not correlate with the number of swollen joints, or the rheumatologist's rating of disease activity.

Conclusions: High levels of emotional distress are very common in EIA, however only a small number acknowledged a diagnosis of depression, and even fewer were receiving treatment for depression. This discrepancy may indicate under-diagnosis of emotional distress in this population. Emotional distress correlates with overall physical functioning and subjective disease severity but not objective ratings.

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MONOCLONAL GAMMOPATHY OF UNDERMINED SIGNIFICANT (MGUS) IN SLE Yaser Ali, Dominique Ibanez, Dafna Gladman, Murray Urowitz (University of Toronto Lupus Clinic, Toronto Western Hospital, University Health Network, Toronto, Canada)

Background: A monoclonal gammopathy of undetermined significance (MGUS) occurs in up to 2% of persons age 50 or older. We studied the prevalence, type and associated features of MGUS in patients with SLE

Methods: Patients with an abnormal band on serum or urine protein immunoelectrophoresis in the University of Toronto Lupus Database were identified. MGUS patients were matched with 2 controls each by age at SLE diagnosis, sex and disease duration.

Results: 59 of 1083 (5.4%) patients followed at the Lupus Clinic were identified with MGUS. There were 51 females. Mean age at SLE diagnosis was 35.6 ± 15.1 yrs. Average disease duration at 1st abnormal band was 15.0 ± 11.3 yrs, and at last clinic visit 19.8 ± 11.6 yrs. 32 had IgG, 14 IgM and 12 IgA types. 7 (11.9%) MGUS patients died, compared to 34 (28.8%) in con-

trols (p=0.002). 9 (15.3%) malignancies were detected in MGUS and 12 (10.1%) in the controls during the entire course of their disease (p=0.13). None had multiple myeloma.
The adjusted mean SLEDAI (AMS) was 5.8 ± 3.7 in the MGUS group and 6.2 ± 5.6 for the controls (p=0.54). The SLICC/DI at MGUS was 1.73 ± 2.11 for MGUS and 2.14 ± 2.2 for controls (p=0.28). Cumulative dose of steroids was 36.3 gr ± 46.4 for MGUS and 39.8 gr ± 37.0 for controls (p=0.45). The mean ESR at MGUS was 41.7 ± 26.0 and 28.6 ± 28.9 for controls at last visit (p=0.01). Gamma globulin level was 15.8 ± 6.1 for MGUS and 12.8 ± 4.7 for controls (p=0.0002).
Conclusion: MGUS is more frequent in SLE patients than in the population and has a benign course in patients with SLE. There were no differences in disease manifestations, treatment approaches, or malignancies between SLE patients with and those without MGUS.

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SUMMARIZING DISEASE FEATURES OVER TIME – PART 2: THE VARIABILITY OF SLEDAI-2K - DOES IT HELP IN PREDICTING OUTCOMES IN SLE? Dominique Ibanez, Murray B. Urowitz, Dafna D. Gladman (The University of Toronto Lupus Clinic, Toronto Western Hospital, University Health Network, Toronto, Canada)
Objective: To determine if the variability of SLEDAI-2K, along with the Adjusted Mean SLEDAI-2K (AMS), can better predict major outcomes in SLE than the AMS alone.
Methods: Patients followed in a Lupus Clinic for a minimum of 3 visits, and not having been absent for a period > 18 consecutive months were included. 15 different approaches to measure variability of SLEDAI-2K were evaluated for each visit, along with AMS. Approaches were based on standard deviation (3) slopes (6), and other variability statistics (6) such as range, coefficient of variation, percent of the visits with a change in SLEDAI-2K >/= 3. The SLE outcomes under study are death, damage, coronary artery disease (CAD) and avascular necrosis (AVN). The predictability of each of the outcome was evaluated through time-dependent covariate survival analyses. Regression models included other major risk factors such as sex, age at diagnosis, SLEDAI-2K at presentation and disease duration.
Results: 575 patients seen from 1970 to 2002 were included. 83 patients died, 320 developed damage, 55 had CAD and 68 had AVN. None of the 15 variability measures added more statistical significance in the prediction of the 4 outcomes. For the prediction of survival, AMS (p<0.0001) and age at diagnosis (p<0.0001) were the only significant risk factors. For damage, AMS (p<0.0001), age at diagnosis (p=0.004) and disease duration (p=0.0002) were predictors. CAD was associated with AMS (p=0.01), sex (p=0.01), age at diagnosis (p<0.0001) and disease duration (p<0.0001). For AVN, age at diagnosis (p=0.05), SLEDAI-2K at presentation (p=0.007) and disease duration (p=0.02) were significant risk factors.
Conclusion: Variability of SLEDAI-2K over time does not affect the prediction of any of the major SLE outcomes independently of AMS. Thus, the AMS remains a useful predictor of outcomes in SLE.

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INNOVATIVE PROSPECTIVE APPROACH TO CAPTURE PATIENT REPORTED FUNCTIONAL OUTCOME MEASURES IN PATIENTS USING INJECTABLE BIOLOGIC AGENTS, ETANERCEPT (ENBREL®) OR ANAKINRA (KINERET®) Claire Bombardier, Edward Keystone, Boulos Haraoui, Carter Thorne, Majed Khraisi, Enkie Thomas, Patricia Morassut, Lyn Maguire (Institute for Work & Health, Toronto, ON, Mt. Sinai Hospital-Advanced Therapeutics, Toronto, ON, Institut de Rhumatologie, Montreal, QC, Royal Victoria Hospital, Newmarket, ON, St. Clare's Mercy Hospital, St. John's, NF, Amgen Canada Inc., Mississauga, ON, Ottawa, ON, University Health Network, Toronto, ON)
Purpose: To capture prospective patient-reported outcome measures in Canadian patients with rheumatoid arthritis (RA) who start etanercept or anakinra as part of their standard therapy in usual clinical practice.
Methods: The primary endpoint of the study was to evaluate response to treatment using the health assessment questionnaire disability index (HAQ-DI). Secondary endpoints included change in rheumatoid arthritis disease activity index (RADAI) as well as patient and physician global assessments between baseline and each scheduled visit, over a 24 month period. Work status/productivity and patient demographics were also collected on each participant. Trained interviewers conducted computer-assisted telephone interviews in either French or English. Scores for the HAQ, RADAI and patient Global were graphed in real time and sent to the Rheumatologists for treatment-based decision-making. A total of 500 patients will be enrolled over a 30-month period from 42 Canadian centres. Eligible patients are >18 years of age with active RA, not concurrently on biologics and were candidates for initiation of etanercept or anakinra therapy.
Results: This interim analysis includes baseline data for the first 169 patients completing 6 months of follow-up. Fifty-four patients were treated with anakinra, and 115 patients with etanercept. Participants were 77% female and 89% Caucasian, with a mean age at baseline of 52.7 years +/- 14.4years. Only 9.5% reported an educational level of less than high school and 45.6% reported total income as >$35,000. Of those working, [n=61], 41 (69.5%) were full time. Reimbursement for drug came from private 59.5%; provincial 29.5% sources with 11% receiving a combination of private-provincial support. All changes are shown in the Table 1 below. Fifty-four percent of all participants met the targeted HAQ-DI change score of >0.22 showing clinically important change.

Table 1. HAQ, RADAI and Global score changes between baseline and 6 month (n=169)

Measures	Baseline	6 month	Mean changes
HAQ DI (0-3) mean (SD)	1.78(0.6)	1.51(0.7)	0.28(0.53)*
HAQ pain (0-3) mean (SD)	2.23(0.6)	1.63(0.8)	0.60(0.81)*
RADAI summary score (0-10) mean (SD)	6.19(1.7)	4.60(2.1)	1.60(1.87)*
Patient global (1-5)			
Very good	0	6(3.6%)	Frequency of Change:
Good	7(4.1%)	35(20.7%)	**better** 82 (49%)
Fair	76(45.0%)	79(46.8%)	**Worse** 12 (7%)
Poor	70(41.4%)	45(26.6%)	**No change** 75 (44%)
Very poor	16(9.5%)	4(2.4%)	

* p<0.0001

Conclusions: Changes in the HAQ-DI, pain and RADAI from baseline to 6 months of therapy show clinically important improvements. This innovative real-time postmarketing surveillance with patient reported outcomes provided to the Rheumatologists allows for more robust therapeutic decision-making and generates long-term efficacy data outside of clinical trials.

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FLUCTUATIONS OF ANTI-CCP ANTIBODIES AND RHEUMATOID FACTOR DURING FOLLOW-UP OF PATIENTS WITH RECENT-ONSET POLYARTHRITIS: CORRELATIONS WITH CLINICAL OUTCOMES Gilles Boire, Pierre Cossette, Claude Daniel, Artur de Brum-Fernandes, David Hercelin, Patrick Liang, Henri-A. Ménard, Théophile Niyonsenga, Sophie Roux (Division of Rheumatology, Centre hospitalier universitaire de Sherbrooke, Université de Sherbrooke , Division of Internal Medicine, Centre hospitalier universitaire de Sherbrooke, Université de Sherbrooke, Université du Québec-Institut Armand-Frappier, Montréal , Division of Rheumatology, Centre hospitalier universitaire de Sherbrooke, Université de Sherbrooke, Division of Rheumatology, McGill University Health Centre, McGill University, Centre hospitalier universitaire de Sherbrooke, Université de Sherbrooke)
Purpose. Recent-onset polyarthritis (EPA) is highly heterogeneous. Rheumatoid Factor (RF) and anti-Cyclic Citrullinated Peptide (anti-CCP) are used as prognostic markers in EPA patients. We studied the fluctuations during follow-up of RF and anti-CCP in EPA patients, and correlated their titres with clinical outcomes. Methods. In a longitudinal observational study of 197 consecutive EPA patients treated early according to Good Clinical Practice, sera were collected at inclusion (median 3 months after clinical onset) and at 18 and 30 months. Results. At inclusion, RF was present in 71 (34%) and anti-CCP in 71 (34%) of patients, including 13 with low/moderate anti-CCP titres. Upon follow-up, RF decreased in 64% (mean -1 dilution), and increased in only 18%. RF reverted to negative in 17, and converted to positive in 6 patients. Most patients with low RF (20 or 40 IU/ml) at inclusion reverted to RF negative.
Upon follow-up, 13 patients initially anti-CCP negative converted to anti-CCP positive (low/moderate titres in 10). Only three patients reverted from

anti-CCP positive to negative. Half of the 23 patients with Low/Moderate anti-CCP titres (at inclusion or during follow-up) entered clinical remission and only 3 developed a severe Sharp Erosion score during follow-up. Conclusions. In the context of EPA treated early, up to 20% of initially RF positive patients lose RF during follow up.
Contrariwise, high titre anti-CCP is a stable serological marker, although up to 15% of eventually anti-CCP positive patients develop anti-CCP (usually low/moderate titres) after their first evaluation, sometimes up to 18 months into disease. Low/Moderate anti-CCP titres, both present initially and appearing during follow-up, correlate with a relatively good outcome, and should be labeled Intermediate rather than Positive.

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RHEUMATOLOGISTS MAKE A DIFFERENCE: 2 STRATEGIES TO IMPROVE TREATMENT OF OSTEOPOROSIS FOLLOWING FRAGILITY HIP FRACTURE Gilles Boire , François Cabana, Artur de Brum-Fernandes, Patrick Liang, Julie Robindaine, David Hercelin, Isabelle Deschênes, Sophie Roux (Rheumatology Division, Centre hospitalier universitaire de Sherbrooke, Université de Sherbrooke, Division of Orthopedics, Centre hospitalier universitaire de Sherbrooke, Université de Sherbrooke)
PURPOSE. Treatment of osteoporosis in patients with fragility hip fracture should be the norm, but less than 10% of these patients are currently appropriately treated. To address this important care gap, we tested 2 consecutive Interventions. Methods. Intervention 1 (55 patients) involved a trained nurse and an information brochure asking the primary care physician to treat osteoporosis. In Intervention 2 (169 patients), patients were systematically evaluated by a rheumatologist. The patients were followed up by phone at 4 and 12 months to check their use of drugs to treat osteoporosis. Results. We obtained follow up data on 84% of discharged patients. The mean age at fracture was 82 y.o. At 4 and 12 months after fracture, 14% and 20% of the patients had died, respectively. During Intervention 1, 14/55 (25%), 17/43 (40%) and 16/31 (52%) patients were adequately treated at discharge, and at 4 and 12 months, respectively. During Intervention 2, 31% of patients had contraindications to bisphosphonate therapy, mostly severe dementia. After the rheumatologic intervention, 151/160 (94%), 76/119 (64%), and 38/64 (59%) patients were adequately treated at discharge and at 4 and 12 months of follow up, respectively. There was a trend for the patients evaluated by a rheumatologist (Intervention 2) to be back at home more frequently (34% vs 24%) at 12 months after fracture. Conclusions. Informing and involving the family physician in the care of osteoporosis increases the rate of appropriate treatment of patients with fragility hip fractures, but this intervention takes time to have an impact. A systematic intervention by rheumatologists yields a more rapid and universal rate of appropriate treatment (and possibly a better functional outcome at 12 months). This represents a low cost, high impact intervention. Long-term compliance with drug treatment is still a problem, however.

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SCLERODERMA IN CANADA: DEMOGRAPHIC PROFILE AND HEALTH SERVICES UTILIZATION FROM A PATIENT PERSPECTIVE Sindhu R. Johnson, Simon Carette, James Dunne (Division of Rheumatology, University Health Network, University of Toronto, Toronto, ON, Department of Medicine, St. Paul's Hospital, Vancouver, BC)
Objectives. To determine the demographic profile and use of the health care system by Canadian scleroderma patients. In particular, to determine which physicians are diagnosing and following patients, what tests are being used and assess the time intervals between diagnosis and testing.
Methods. A self-administered questionnaire was mailed to 1429 members of the 12 provincial chapters of the Scleroderma Society of Canada. Questionnaires in either English or French and two successive mailings were used to increase response.
Results. The overall response rate was 63%. Eighty-nine percent of respondents were female. 60% were between the age of 30-59. Fifty-four percent live in an urban setting, while 46% live in a rural setting. Only 43% were diagnosed by a rheumatologist. Over 50% of patients have seen a dermatologist, rheumatologist, respirologist, whereas less than 50% have seen a cardiologist, nephrologist, gastroenterologist or physiotherapist in consultation. The mean time to diagnosis over the last 3 decades is 2.4 years. At the time of diagnosis less than 50% of patients had an ECG, echocardiogram, gastroscopy, CT thorax, or skin thickness measurements.
Conclusions. Patients are almost equally divided between urban and rural areas. Less than half of patients were diagnosed by a rheumatologist, and the time to diagnosis from onset of symptoms has remained unchanged over the last 3 decades. Despite the complex, multi-systemic nature of their disease, less than 50% of patients are seeing some sub-specialists or having baseline screening tests for organ involvement of their systemic sclerosis. Further research is needed on health services utilization and on determinants of access to care by scleroderma patients.

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Efficacy and Safety of Adalimumab (HUMIRA®) in Canadian Clinical Practice. A comparison of the Canadian and the European Practice: The CanACT and the ReACT Trial
Authors: Cividino, A. on behalf of the CanACT Investigators
Objective: To evaluate the efficacy and safety of adalimumab in the Canadian practice setting, and to compare it with the results of ReAct, a similar trial that was conducted in Europe.
Methods: The Canadian Adalimumab Clinical Trial was an open-label, multi-center, Phase IIIb study conducted in Canada. A total of 879 patients with moderate to severe rheumatoid arthritis (RA) who had an inadequate response to standard therapy, including MTX, were treated with adalimumab 40 mg SC every other week in addition to their preexisting but inadequate therapy. Efficacy and safety were assessed at baseline, 4, 8, and 12 weeks. Efficacy assessment included tender joint count (TJC, 0-28), swollen joint count (SJC, 0-28), disease activity score (DAS28), health assessment questionnaire (HAQ), and EULAR response. This was a preliminary analysis of 236 patients. The sample size for each outcome variable was based on the data available at the time of the analysis. The data from this preliminary analysis were compared to the 12 weeks' assessments done in the ReAct trial (N=2008).
Results: Patients' baseline characteristics and disease severity scores were (mean): age = 53.5 years; percentage of female = 75%; TJC = 17; SJC = 14; DAS28 = 6.5; and HAQ = 1.4. At 12 weeks, the mean scores had improved to TJC = 8.1; SJC = 7.4; HAQ = 0.86; DAS28 = 4.4; all significant ($p < 0.001$) versus baseline. The comparisons with the ReAct results are presented below:

Efficacy Measures at 12 weeks (Change from baseline)	**CanACT** (N= evaluated patients)	**ReAct** (N=2008)[1]
TJC (0-28)*	-10 (123)	-10
SJC (0-28)*	-7 (123)	-7
DAS28 (mean)	-2.1 (116)	-2.1
HAQ score (mean)	-0.55 (122)	-0.49
EULAR response		
% moderate	78 (121)	82
% good	18 (121)	34

***Median values**

1. Burmester GR, Monteagudo Saez I, Malaise M, Canas de Silva J, Webber DG, Kupper H. Efficacy and Safety of Adalimumab (HUMIRA) in European Clinical Practice: The ReAct Trial, EULAR 2004 Abstract

A HAQ score of < 0.5 was achieved by 28% of the CanACT patients and 25% of the ReAct patients at 12 weeks.
Four (4) serious adverse events were reported, of which 2 (0.9%) were possibly related to adalimumab. Both of these events were post-surgical foot infections - one resulting in discontinuation and one patient resumed treatment. One patient experienced an MI that was thought to be probably not related to adalimumab. Another patient experienced a mesenteric ischemia due to an intestinal volvulus. This was not related to adalimumab. No patient death, reactivated TB, or malignancy was reported. The serious infection rates were comparable for both trials.
Conclusion: Canadian patients with RA receiving adalimumab consistently experienced substantial reductions in signs and symptoms of their disease. These results are consistent with results from the European ReAct trial.

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COST, QUALITY OF LIFE AND DISEASE SEVERITY OF ANKYLOSING SPONDYLITIS IN CANADA Walter P. Maksymowych, Patrick A. Sobocki, Gisela Kobelt (University of Alberta, Karolinska Institute and Stockholm Health Economics, Stockholm, Sweden, Karolinska Institute, Stockholm, Sweden and European Health Economics, France)
Objectives. The aims of the current study were to (1) estimate the cost and the quality of life of ankylosing spondylitis (AS) and (2) investigate the

influence of different levels of disease severity and disease progression on costs and quality of life, in order to provide a baseline for estimating cost-effectiveness of new treatments for AS.

Methods. A cross-sectional retrospective observational study was performed in a cohort of patients with AS in Alberta, Ontario, British Columbia and Manitoba. Patients answered a detailed questionnaire concerning their resource utilization during the past 3 months, as well as current functional status (BASFI), disease activity (BASDAI) and quality of life (utility, EQ-5D). Mean costs and quality of life, as well as disease progression, were estimated using a regression model including age, gender, disease duration, disease activity and functional status.

Results. A total of 1249 questionnaires were mailed. Response rate was 44% (n=545). Based on this cohort (mean age 50), mean total cost per patient per year is estimated at $9,008 (SD $17,724). Hospital care amounts to $1,093 (SD $4555) or 19% of direct costs, while medication accounts for 12% of direct costs ($664). The mean total indirect cost was $2,423 (SD 9593) or 38% of total cost. Ten per cent of working patients had to take time off from work due to AS during the past three months, with a mean absence of 3 days. Twenty per cent of the sample could not work due to AS. Total costs increased with diminishing physical function ($3 850 for BASFI <3 and $23 330 for BASFI≥7). The average utility of the sample was 0.67 (SD 0.23). Utility correlates significantly with age, gender, physical function (BASFI) and disease activity (decreasing from 0.79 for BASDAI <3 to 0.41 for BASDAI≥7).

Conclusion. This Canadian study confirms the relation of disease severity and disease duration on costs and quality of life and provides a baseline to estimate the cost-effectiveness of treatments that affect disease severity and disease progression.

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INCREASING INTEREST IN RHEUMATOLOGY TRAINING: A WEBSITE APPROACH Kam Shojania (Arthritis Research Centre of Canada)

Background: Few undergraduate (UG) or postgraduate (PG) trainees are aware of rheumatology career options in a timely fashion. Rheumatology rotations are usually not mandatory in training programs and UG and PG training is mainly done in hospital, while rheumatology patients are increasingly treated on an outpatient basis.

Objective: To increase the interest and awareness of trainees about Rheumatology.

Methods: In July 2001, a website was developed at a cost of $280 US to introduce trainees to rheumatology and serve as an online resource for journals, awards and training opportunities (www.rheumweb.com). Maintenance costs are approximately $40 US per month. The site highlights the practice of rheumatology, and lists the divisional rheumatologists, their clinics and research interests. Trainees are invited to spend time with the rheumatologists in a typical outpatient rotation or a short 'shadow' experience of up to 2 weeks. Trainees who used the website to obtain this experience were invited to fill out an online questionnaire determining their interest in rheumatology.

Results: There are approximately 1200 hits per month with an average of 16 hits per session. Twelve percent were from Canada and 88% were international (most from the United States). Sixty-five local trainees filled out the questionnaire.

Trainee level	N	Completed rotation or shadow experience	Found the website useful	Interest in Rheumatology as a career		
				Yes	Undecided	No
Undergrad	34	34	20	4	28	2
Postgrad	31	31	29	15	12	4

Conclusions: A website is an inexpensive method of increasing awareness about rheumatology which is appreciated by trainees and appears to increase interest in rheumatology training.

Acknowledgement:
This work was funded through the Arthritis Society of Canada Clinician Teacher Award

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INTERSTITIAL PNEUMONITIS ASSOCIATED WITH INFLIXIMAB. A CASE REPORT AND REVIEW OF THE LITERATURE. Edith Villeneuve, Anne St-Pierre, Joseph Braidy, Boulos Haraoui (Centre hospitalier de l'Université de Montréal)

Introduction : Interstitial pneumonitis is a well-documented rare complication of methotrexate (MTX), occurring in about 5% of patients. We report the case of a RA patient treated with MTX who developed severe interstitial pneumonitis shortly after his third infliximab infusion. Seven other similar cases have been reported in the literature raising concerns that infliximab may be the primary cause or may potentiate the pulmonary toxicity of MTX.

Case report: A 70-year-old male with an erosive seropositive RA who had persistent synovitis despite oral MTX at 22,5 mg per week and 15mg of prednisone was started on infliximab therapy at 3 mg/kg . Nine days after his third infusion, he was hospitalized with increasing dyspnea, fever and fatigue associated with bilateral interstitial infiltrates and hypoxemia. Bronchoalveolar lavage (BAL) revealed an alveolitis with a predominance of lymphocytes and some eosinophils. All cultures were negative and the patient was treated with oxygen, high dose corticosteroids and MTX was discontinued. . He was also found to have Aspergillus fumigatus as a colonizing organism and received prophylactic itraconazole . Patient gradually improved and prednisone doses were tapered. Two months later, the chest Xray revealed an important clearing of infiltrates and the patient had decreasing O2 requirements.

Discussion : Interstitial pneumonitis is a severe but rare complication of MTX. Patients who develop MTX toxicity tend to do so in the first year of therapy. Since our patient was taking MTX for 10 years and was on a stable dose for the past 3 years, it made this diagnosis less probable and led us to search for another cause .Findings on chest computed tomography and BAL cellular analysis suggested an alveolitis of non infectious cause. The negative aspergillus antigen was consistent with these findings and we concluded that the aspergillus found on the BAL culture was a colonizing organism. Seven cases of life-threatening diffuse interstitial pneumonitis related to infliximab therapy in RA patients have been reported to date. All patients were treated with a stable MTX dose and developed symptoms shortly after their third infliximab infusion. When available, histology showed features characteristic of MTX pneumonitis. The temporal relationship of onset of symptoms with initiation of infliximab therapy suggests that it may be in cause. Mechanisms by which infliximab can trigger interstitial pneumonitis or potentiate the pulmonary toxicity of MTX are unclear but could be related to deficient apoptosis of infiltrating inflammatory cells.

Conclusion : These observations should prompt us to be more careful about pulmonary symptoms in patients receiving both MTX and infliximab, especially after the third infusion. We therefore recommend to remind patients about the possible pulmonary toxicity of MTX when starting infliximab therapy.They should cease MTX and seek medical help promptly if they develop new severe pulmonary symptoms.

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THE HAQ-DI AND SHAQ IN SCLERODERMA TRIALS: AN EVALUATION OF THEIR MEASUREMENT PROPERTIES. Sindhu R. Johnson, Gillian A. Hawker, Aileen M. Davis (Department of Health Policy, Management and Evaluation, Division of Rheumatology, University Health Network, University of Toronto, Toronto, ON, Department of Health Policy, Management and Evaluation, Division of Rheumatology, Sunnybrook and Women's Health Sciences Centre, University of Toronto, Toronto, ON, Department of Health Policy, Management and Evaluation, Toronto Rehabilitation Institute, University of Toronto, Toronto, ON)

Objectives. To evaluate the measurement properties of the HAQ-DI and SHAQ for group comparisons in scleroderma trials, and to determine if the SHAQ confers any measurement advantage over the HAQ-DI.

Methods. A MEDLINE computer search for articles describing use of the HAQ-DI and SHAQ in scleroderma between 1966-April 2004 was performed using subject headings: health assessment questionnaire, HAQ, health assessment questionnaire disability index, HAQ-DI, disability, scleroderma, and systemic sclerosis. Evidence supporting the sensibility, reliability, validity and responsiveness of these measures was evaluated.

Results. SHAQ has better face and content validity than HAQ-DI as it addresses scleroderma specific manifestations that also contribute to disability. HAQ-DI has good concurrent validity (ICC = 0.76 compared to a therapist assessment), construct (known group) validity (diffuse scleroderma patients have worse scores than limited scleroderma patients, 1.10 vs 0.67, $p < 0.001$) and predictive validity (low HAQ-DI score is associated with improved skin score OR = 3.4, pulmonary diffusion capacity OR = 3.4). Responsiveness of the HAQ-DI subscales has been demonstrated (ES = 0.01-0.20, SRM = 0.02-0.26).

Conclusion. The SHAQ has greater face and content validity than the HAQ-DI. The HAQ-DI has greater reliability and demonstrated construct, concurrent and predictive validity. Whether SHAQ improves on HAQ-DI in construct, concurrent or predictive validity is uncertain. The HAQ-DI appears more reliable than SHAQ, however reliability studies provide insufficient data to ascertain if minimum standards have been achieved. Further investigation into their measurement properties and their relation to the required standards of measurement is needed before they can be confidently utilized in scleroderma trials.

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THROMBOEMBOLIC COMPLICATIONS ASSOCIATED WITH TREATMENT OF LUPUS ANTICOAGULANT-HYPOPROTHROMBINEMIA SYNDROME Evelyne Vinet, Éric Rich, Dominique Bourrelle, Jean-Luc Senécal (Centre hospitalier de l'Université de Montréal, Montréal, Québec)

Objective: To report a patient with systemic lupus erythematosus (SLE) and lupus anticoagulant-hypoprothrombinemia syndrome (LAHPS) in whom successful treatment of bleeding due to severe factor II deficiency was followed by a thromboembolic complication.

Methods: Case report and review of literature.

Results: A 50 year-old female patient with SLE developed two spontaneous subdural hematomas as a complication of severe factor II deficiency due to LAHPS. She was initially treated with corticosteroids, plasma exchanges, intravenous immunoglobulins and cyclophosphamide, resulting in complete correction of factor II deficiency without recurrence of bleeding. However, during maintenance immunosuppressive therapy, while factor II level was normal, she developed an ischemic stroke.

A literature review revealed two other case reports of patients with LAHPS who developed thromboembolic complications resulting from the treatment of factor II deficiency. Since the first case report in 1960, less than 40 cases of LAHPS have been described. There is no consensus on treatment and its indications have varied from minor bleeding and perioperative prophylaxis to life-threatening hemorrhage.

Conclusion: We suggest that, in LAHPS, factor II deficiency counterbalances the prothrombotic effect of the lupus anticoagulant antibody. Therefore correcting factor II deficiency might actually promote thromboembolism. Caution must be used in deciding which patient to treat and in determining the type and the duration of therapies.

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PRELIMINARY STUDY OF THE VALIDITY OF THE WORLD HEALTH ORGANIZATION DISEASE ASSESSMENT SCHEDULE II (WHODAS II) IN PATIENTS WITH EARLY INFLAMMATORY ARTHRITIS Murray Baron, Pantelis Panopalis, Joanna Caron, Marie Hudson, Maura Buchigniani, Suzanne Taillefer, McGill Early Arthritis Research Group (McGill)

Objectives: To validate the World Health Organization Disease Assessment Schedule II (WHODAS II) as an instrument to assess health related quality of life (HRQoL) in patients with EIA. We hypothesized that the results of the WHODAS II would correlate well with a well-established HRQoL questionnaire, the Medical Outcomes Study Short Form 36 (SF 36), and with indices of joint inflammation, function, pain and depression.

Methods: The WHODAS II and SF-36 were administered to 66 patients enrolled in the McGill Early Arthritis Registry. Baseline clinical and demographic characteristics, tender and swollen joint counts, the Health Assessment Questionnaire-Disability Index (HAQ-DI), the Center for Epidemiology Depression scale (CES-D) and the McGill Pain Questionnaire (MPQ) were also obtained on all 66 patients. Univariate analyses were performed and Pearson correlations were calculated.

Results: The mean (+SD) WHODAS II score was 21.8 ± 20.1. As predicted, the WHODAS II scores correlated very well with both the physical component of the SF-36 ($r = -0.58$, $p<0.001$) and the mental component ($r=-.45$, $p<.001$). It also correlated very well with HAQ-DI scores ($r = 0.47$, $p<0.001$) and CES-D scores ($r = 0.57$, $p<0.001$). The WHODAS II also correlated well with tender joint counts ($r = 0.44$, $p<0.001$), swollen joint counts ($r = 0.29$, $p<.05$), physician global assessment scores ($r = 0.41$, $p<.001$) and scores on the Affect component of the MPQ ($r = 0.33$, $p<.01$).

Conclusions: Preliminary results indicate that the WHODAS II correlates well with the SF-36, HAQ-DI, CES-D, MPQ, tender and swollen joint counts. Thus, the WHODAS II is likely to be a valid and useful tool for future research, including long-term outcomes in patients with inflammatory arthritis.

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CANADIAN FRENCH VERSION OF THE WORLD HEALTH ORGANIZATION DISEASE ASSESSMENT SCHEDULE II (WHODAS II): TRANSLATION, TEST-RETEST STABILITY, AND INTERNAL CONSISTENCY IN PATIENTS WITH RHEUMATOID ARTHRITIS Murray Baron, Pantelis Panopalis, Joanna Caron, Marie Hudson, Maura Buchigniani, Suzanne Taillefer, Louise Demers, McGill Early Arthritis Research Group (McGill, U of Montreal)

Purpose:To adapt the World Health Organization Disease Assessment Schedule II (WHODAS II), a generic multidimensional questionnaire, for use in a French Canadian population with rheumatoid arthritis.

Methods: Initial forward translation of the WHODAS II into Canadian French was performed by two bilingual individuals, one with health-related experience and the other from the lay public, whose mother tongue is French. The forward translation was back translated into English by two bilingual individuals, one with health-related experience, and the other from the lay public and whose mother tongue is English. The original version, the two French forward translations and the two English back translations were then reviewed by a committee that worked by consensus to ensure the conceptual and linguistic equivalence of the two versions and to finalize a single Canadian French version of the WHODAS II. The translated version of the WHODAS II was pre-tested on a sample of six bilingual patients to ensure clarity and comprehension. They were asked to complete both versions of the instruments, in random order, and to indicate if they found any instructions or items difficult or ambiguous. They were debriefed after filling out the questionnaires and all their comments were noted and given to two French mother tongue bilingual members of the initial review committee who readapted the French version accordingly to produce the final version. Field-testing of the final version of the Canadian French WHODAS II was performed on 19 French-speaking rheumatoid arthritis (RA) patients, followed by analyses of test-retest stability and internal consistency.

Results: The WHODAS II was successfully translated into Canadian French and was well received by respondents. Test-retest showed strong reliability with a single measure intraclass correlation coefficient of 0.92. Cronbach's alpha, a measure of internal consistency, was 0.96.

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RELIABILITY AND VALIDITY OF OPTHALMOSCOPIC CAPILLAROSCOPY Murray Baron, Mary Bell, Arthur Bookman, Dana Jerome, Elzbieta Kaminska, Terri Lupton, Janet Pope, for the Canadian Scleroderma Research Group (McGill, U of Toronto, McMaster, Western Ontario)

Purpose: Assess the reliability and validity of opthalmoscopic capillaroscopy.

Methods: 2 fingers of 13 scleroderma patients and 2 normals were examined by 4 rheumatologists with opthalmoscopes. The gold standard was widefield microscopy. The opthalmoscope and microscope examiners determined the presence or absence of dilated loops, giant capillary loops and/or avascular areas for each digit. No scoring was done. Each subject was placed behind a screen with only a gloved left hand exposed. Each finger was examined independently, each examiner examined each finger in a random order determined by a Latin square design, and each finger was examined twice by each examiner in 2 separate rounds. The Kappa coefficient was calculated to demonstrate the percent agreement with chance eliminated. Above 0.6 is considered substantial and between 0.4 and 0.6 moderate agreement.

Results: Average age of subjects was 56.6 yrs. Average disease duration was 12.4 yrs; 2 PSS subjects were black, all others Caucasian. Five had limited and 7 diffuse PSS and the other was uncertain of subtype of scleroderma. Three of the 30 digits could not be assessed by the widefield microscope.

Kappa Coefficients:

	Dilated Capillaries	Giant Capillaries	Avascular Areas
Inter-Rater	0.43	0.54	0.19
Intra-rater	0.61	0.56	0.31
Opthalmoscope-Microscope	0.63	0.52	<0.1

Conclusion: The opthalmoscope provides substantial intra-rater and opthalmoscope-microscope agreement for discerning the presence or absence of dilated capillaries; moderate inter-rater agreement for dilated and giant capillaries and for intra-rater and opthalmoscope-microscope agreement for giant capillaries but poor agreement for avascular areas. We recommend

that if an opthalmoscope is used, avascular areas not be assessed but that assessment of dilated and giant capillaries may have potential for use in the development of new diagnostic criteria for scleroderma.

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EPIDEMIOLOGICAL AND CLINICAL FEATURES OF BEHÇET'S DISEASE IN LEBANON Imad Uthman, Ayad Hamdan, Wissam Mansour , Abdul-fattah Masri , Fuad Nasr, Thuraya Arayssi (American University of Beirut- Medical Center, Beirut, Lebanon)

Objectives: To describe the clinical features of Lebanese patients with Behçet's Disease followed up at a tertiary care center in Beirut, Lebanon.

Methods: A retrospective review of medical records of 90 patients who fulfilled the ISG criteria for diagnosis of BD was performed. Their clinical characteristics were compared to those reported from other Arab countries, Israel and Turkey using the same diagnostic criteria.

Results: The male to female ratio was 2.9:1, the mean age at onset 25.4 years and mean age at diagnosis 29.2. Hundred percent had mouth ulceration, 72.2% genital ulceration, 59.1% arthritis, 55.7 % papulopustular skin lesion, 53.9% ocular disease, 36.8% vascular disease, 29.5% erythema nodosum and 23.0% neurologic disease (5.7% had increased intracranial hypertension not related to dural sinus thrombosis). Less frequent manifestations were 9.2% cardiac involvement, 6.9% epididymitis, 6.9% gastrointestinal involvement, 6.9% epididymitis, 5.7% pulmonary involvement, 2.3% renal disease, and 1.1% premature ovarian failure. A statistically significant difference among genders was only present with respect to vascular manifestation.

Conclusions: The prevalence of vascular and neurologic disease in our population is high as compared to other countries. Factor V Leiden mutation known to be present in high frequency in our area may be a contributing factor and will be further studied. The increased presentation of neurologic disease may be attributed to referral bias. Similar to previous studies we found more severe eye disease in males. Given the cross sectional nature of our study the data may not reflect the characteristics of BD patients with mild disease who may not be referred to our center for management.

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SPINAL INFLAMMATION IN ANKYLOSING SPONDYLITIS: CHARACTERIZATION OF SPINAL LESIONS BY MAGNETIC RESONANCE IMAGING. Walter P. Maksymowych, Suhkvinder S. Dhillon, Martin Williams, Barbara Conner-Spady, Robert G. Lambert (Department of Medicine, University of Alberta, Department of Radiology, University of Alberta)

Background. MRI is the most sensitive imaging modality for the detection of spinal lesions in AS which are primarily bone edema adjacent to vertebral endplates, at Romanus lesions, and within facet joints. Challenges to the feasibility of currently proposed scoring schemes for the assessment of spinal inflammation include the requirement to examine all vertebral segments and the imaging of the spine in two halves which leads to poor resolution of the cervical spine and hence the likelihood of increased measurement error.

Objective. To assess the distribution and extent of inflammatory lesions observed on spinal MRI in patients with active AS.

Methods. STIR and T1 SE MRI sequences were used to detect and anatomically localize inflammatory lesions in the spine. For scoring purposes, a disco-vertebral unit (DVU) was defined as the region between 2 virtual lines through the middle of each vertebra that included the two adjacent vertebral endplates and the intervening disc. All STIR lesions in each DVU were assessed in 3 consecutive sagittal slices. The scoring method requires that each DVU is divided into 4 quadrants and the presence of bone edema scored in a dichotomous manner. Additional scores are given for lesions that are intense and/or exhibit depth on each sagittal slice so that the maximum score per DVU is 18 (www.altarheum.com).Blinded MRI films were assessed in random order by 3 readers. Inter-observer reproducibility was assessed by intraclass correlation coefficient (ICC).

Results. We scanned 23 patients with clinically active disease (mean Bath AS disease activity score of 6.0). Inter-observer reproducibility was very good (ICC 0.80; P<0.001). There was consensus that the mean number of DVUs that had unequivocal increase in the STIR signal was 3.2 (SD 3.2) (95 % CI, 1.2-5.2). Confining the scoring to only 6 affected DVUs per patient would still have captured 32 of a total of 38 affected units (84.6%) and only 4 patients had more than 6 affected DVUs. The percentage of all affected units in the cervical, thoracic, and lumbar regions were 7, 62, and 31, respectively, and the mean (SD) number of affected DVUs per patient in the corresponding regions was 0.22(0.52), 1.87(1.71), 1.0(1.35). When scoring was limited to a maximum of 6 affected DVUs, the mean (SD) score per patient in the cervical, thoracic, and lumbar regions was 1.39(3.57), 10.64(9.80), 3.14(4.54), respectively. Affected cervical segments were only evident in 5 patients, with a mean difference of only 6.3 (range 1.5-11.7) out of a total maximum score of 108 for 6 DVUs. Involvement of only cervical segments was noted in two patients, though mean scores were only 1.7 and 11.7.

Conclusions. Cervical inflammatory lesions are uncommon, and feasibility of MRI assessment could be greatly improved by omitting the cervical spine and limiting scoring to a maximum of 6 affected DVUs.

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CIRCULATING ENDOTHELIAL PROGENITOR CELLS AND VASCULAR INJURY IN SYSTEMIC SCLEROSIS Betty Ing, James Dunne, Beth Whalen, Christine Boeva, Stephan Van Eeden (Univ. of Toronto, Univ. of BC, iCapture St Paul's Hosp., St.Paul's Hosp.)

Circulating vascular progenitor cells (CD34) in the peripheral blood of various diseases have been shown to reflect the degree of vascular injury and healing.

Objective; To measure circulating endothelial progenitor cells in the peripheral blood of patients with Systemic Sclerosis and relate them to vascular reactivity, injury and disease activity.

Methods:Vascular reactivity was measured by laser Doppler flux following cold and warm challenge. The maximum distal-dorsal flux difference of the fingers of one hand was measured, as was the maximum difference in flux between fingers. Peripheral blood CD34 positive cells were counted using an FITC anti-CD34 antibody and standard flow cytometric methods. Counts were standardised as % of peripheral white blood cells. To assess vascular repair or inhibition, VEGF and Thrombospondin-1 (TSP-1) levels were measured using a quantitative colorimetric sandwich ELISA. Disease activity was measured by Valentini's et al. Disease activity index (DA).

Results: 29 patients of mean age 56.6 participated. 24 had limited (lSSc) and 5 diffuse (dSSc) disease The mean DA (0-10) was 4,0(1.5-7.0). The mean number of CD34 cells was 0.021% pts v 0.025% controls. There was no difference in CD34 numbers between lSSc and dSSc groups.CD34 cell numbers showed significant correlation with overall disease activity (DA) ($p < 0.05$) but not with vascular flux levels.VEGF levels (Mean 202 pg/ml) also showed significant correlation with DA ($p < 0.05$) but not with CD34 or TSP-1 levels.TSP-1 levels (mean 830.9 ng/ml) did not correlate with DA.

CONCLUSION: In this study levels of circulating CD34 cells in SSc patients correlated with overall disease activity but not with vascular reactivity and not with levels of circulating VEGF or TSP-1.

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MINOCYCLINE INDUCED AUTOANTIBODIES Suzan M.Attar , Susan Humphrey-Murto (The Arthritis Center ,The Ottawa hospital riverside campus,Ottawa,Canada)

Abstract/Introduction:

Minocycline may lead to drug-induced lupus. We present a case of minocycline-induced anti-scl 70, anticardiolipin antibodies, and anti neutrophil antibody (PR-3 EIA) with partial disease manifestations of scleroderma and antiphospholipid antibody syndrome.

Case Report: This 41-year-old woman presented with a 3-month history of symmetrical polyarthralgias involving wrists, ankles, MCPs, PIPs, DIPs, right elbow and right knee. This was accompanied by 2 hours of morning stiffness and diffuse swelling of her hands and feet.

She did not have any rashes, photosensitivity, mouth ulcers, alopecia, or Raynaud's phenomena. All of these symptoms began 12 months after starting minocycline (100 mg BID) for acne.

No recent illness. Her past medical history was unremarkable, specifically no fetal losses or venous/arterial thrombosis.

No family history of any rheumatological or autoimmune diseases.

The general physical examination was unremarkable except for livido reticularis on her arms and legs. There was diffuse puffiness of her hands and feet, but no active synovitis of the MCP, PIP, DIP or MTP joints. There were effusions in the right knee, and both ankles.

Laboratory investigations revealed a normal CBC, ESR at 94mm/h (normal

0-20), negative RF, positive ANA at 1/2560 homogenous pattern, negative anti-double stranded DNA, negative extractable nuclear antibodies except for a positive anti-Scl-70 antibody. The anticentromere antibody, Hepatitis B, C Parvovirus, urinalysis, CXR, C3 and C4 where all normal or negative. Anticardiolipin antibody IgG 77 GPL U/ml (normal < 15). C-ANCA by IFA in conclusive but PR-3 EIA quantitation 12.7 kU/L (n<3.5).
Minocycline was discontinued and 2 months later her signs and symptoms resolved with a dropping ANA, ESR and anticardiolipin antibody.
Discussion: Minocycline, a synthetic tetracycline, is widely used in the treatment of acne vulgaris. It has increasingly been associated with a number of autoimmune phenomena, including serum sickness, autoimmune hepatitis, vasculitis and lupus. The risk for the development of lupus due to Minocycline is not known, but it appears to be low. The median time of exposure is 19 months with a range of 3 days to 6 years.
Our patient had features of drug-induced lupus. However she also presented with features of scleroderma: diffuse puffiness of her hands and feet and a positive anti SCL-70 antibody. The livido reticularis and high titer IgG anticardiolipin antibody was suggestive of APLAS. This is the second report of Minocycline induced anti scl-70 antibodies anticardiolipin antibodies, and the first with early clinical features of scleroderma. The patient's symptoms and signs resolved within 2 months of discontinuing the drug and it is unclear if the scleroderma would have progressed or whether the disease manifestations would be more selective.
In conclusion, minocycline may lead to the formation of multiple autoantibodies. Partial disease manifestations may be seen, and appear to reversible with discontinuation of the drug.

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SOCIAL SUPPORT AND HEALTH- RELATED QUALITY OF LIFE OF CANADIAN SYSTEMIC SCLEROSIS PATIENTS James Dunne, Betty Ing, Christine Boeva, Jean Gillies, Kenneth Blocka (Univ. of BC, Univ. ofToronto, St Paul's Hosp, Univ.of BC)
Objectives: To measure social support and quality of life in Patients with systemic sclerosis and correlate them to disease activity, severity and disability.
Methods: The SF-36 a 36-item scale was used to assess health-related quality of life (HR-QoL). The MOS-SSS a 19 item scale was used to measure perceived social support.mHAQ-DI measured disability.Medsger and Valentini Scales measured severity and activity.
Results:131 patients participated. 106 with limited (lSSc), 12 diffuse (dSSc) and 13 other. The mean age was 57 (48-65) and mean disease duration 12 years. The majority of respondents perceived themselves to have good social support with means (SD) of 76.9(20.3) for functional, 74.2(24.3)tangible, 82.6(23 affection, 75.7(22.9) positive social interaction & 75.2(21.2) for informational support with a mean of 7.6 close friends or relatives. There was no correlation with disease severity, activity or disability index. There was strong correlation with SF-36 mental health (P<0.0001) role-emotional (P<0.0001) and general health (P<0.003) scores. All 8 domains of the SF-36 scored less than Canadian normative data, the lowest being Physical 26.3(36.7), General Health 42.3(24.0) and Vitality 37.9(21.6). The highest scores were in Social Functioning 67.0(26.9) and Mental Health 69.3. SF-36 scores did not correlate with disease activity or severity. The DI correlated with all 8 SF-36 domains the strongest association was found with Physical Functioning (P<0.0001), Bodily Pain (P<0.0001) and Social Functioning (P<0.0001).
Conclusions: Although a majority of respondents reported good to excellent social support. HR-Qol is reduced and correlated strongly with the degree of disability.

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INFLAMMATORY MUSCULOSKELETAL MANIFESTATIONS IN MULTIPLE SCLEROSIS PATIENTS TREATED WITH INTERFERON-BETA Lannae Strueby, Bindu Nair, Andrew Kirk, Regina Taylor-Gjevre (University of Saskatchewan, Saskatoon, Saskatchewan)
Interferon beta is a type 1 interferon that is used for the management of multiple sclerosis. Therapy with interferon beta has rarely been associated with the development of autoimmune disorders. We present the clinical findings and outcomes of two patients diagnosed with relapsing remitting multiple sclerosis, treated with interferon beta and then developed musculoskeletal manifestations. The first case is a female patient who developed a monoarthritis two weeks after initiation of the interferon beta. The monoarthritis persisted during the 14 month duration of therapy and resolved with discontinuation of the medication. The second case is also a female patient who developed a refractory prepatellar bursitis that started after 38 months of interferon beta treatment. Our literature review revealed an additional seven reported cases of arthritis developing in patients receiving interferon beta. We review the findings, treatments and outcomes of these reports and compare to our own cases.
The role of interferon beta in provoking or initiating inflammatory reactions warrants further investigation. The potential autoimmune complications of interferon beta therapy should be considered when monitoring patients receiving this therapy.

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POLYNEUROPATHY ASSOCIATED WITH ANTI-TNF THERAPY IN PATIENTS WITH RHEUMATOID ARTHRITIS Julie Jurand, Douglas Zochodne, Susan Barr, C. Voll, Liam Martin (University of Calgary, University of Saskatchewan)
Objectives: To report patients with rheumatoid arthritis who developed polyneuropathy while being treated with anti-TNF therapy.
Methods: Case reports of affected patients.
Results: The first patient, a 50 year old female, developed diplopia, demyelinating motor polyneuropathy and MRI lesions consistent with a central demyelinating process six months after beginning treatment with infliximab. The second patient, an 83 year old female, developed bilateral paraesthesiae, distal to the knees and wrists, and ataxia secondary to sensorimotor polyneuropathy after her third treatment with infliximab. She required high dose prednisone to treat her symptoms and is making a slow recovery both physically and on electrophysiological studies. The third patient, a 68 year old woman, developed paraesthesiae in her hands and feet, and small fibre neuropathy after 18 months of infliximab therapy. Treatment with gabapentin and withdrawl of infliximab therapy led to an improvement in her symptoms. The fourth patient, a 64 year old female, developed paraesthesiae in her upper and lower limbs, and small fibre neuropathy 7 months after starting etanercept. Discontinuation of treatment has led to an improvement in symptoms in her upper limbs but she continues to have lower limb symptoms and changes on electrophysiological studies.
Conclusions: These cases highlight the association between anti-TNF therapies and peripheral nerve injury. They also serve to remind us that we need to monitor patients for the development of symptoms and signs of neurological disease when treating patients with anti-TNF therapies, and to consider carefully starting patients who have neurological disease on these agents.

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NASAL SEPTAL PERFORATION: A NOVEL CLINICAL MANIFESTATION OF SYSTEMIC ONSET JUVENILE IDIOPATHIC ARTHRITIS/ ADULT-ONSET STILL'S DISEASE Tadej Avcin, Earl Silverman, Vito Forte, Rayfel Schneider (Division of Rheumatology, Department of Otolaryngology, The Hospital for Sick Children, University of Toronto, Toronto, ON, Canada)
Introduction: Nasal septal perforation has been reported in patients with various rheumatic diseases, including systemic lupus erythematosus, Wegener's granulomatosis and sarcoidosis. To our knowledge, this condition has not been reported in either children with systemic-onset juvenile idiopathic arthritis (SoJIA) or adults with adult-onset Still's disease (AoSD). We describe three patients with severe persistent SoJIA/AoSD who developed nasal septal perforation during the course of their disease.
Case series: Three patients with SoJIA/AoSD were seen at Hospital for Sick Children, Toronto with nasal septal perforation between August 2003 and July 2004. Two children met the revised ILAR diagnostic criteria for SoJIA and one met criteria for AoSD. None of the patients had evidence of infection or trauma at diagnosis of nasal septal perforation. The disease course, clinical and laboratory findings are summarized in the table.
Conclusions: Nasal septal perforation may rarely develop as a complication of SoJIA/AoSD and may manifest with obstruction, pain, whistling or epistaxis. All patients in our series had a persistent course of SoJIA/AoSD and had been treated with high-dose corticosteroids. In at least one case the nasal septal perforation was associated with vasculitis.

	Case 1	Case 2	Case 3
Gender	F	M	F
Age at onset	4.5 years	14.5 years	16.5 years
Disease duration	6.5 years	9 months	10 months
Disease course	persistent	persistent	persistent
systemic features	fever, rash, hepatosplenomegaly	fever, rash, serositis, hepatosplenomegaly	fever, rash, hepatosplenomegaly
arthritis	persistent polyarthritis	transient polyarthritis	persistent polyarthritis
Complications	2. episodes of MAS	myocarditis, myositis	none
Nasal symptoms	obstruction, pain	whistling	epistaxis, whistling
CT sinuses	minimal mucosal thickening	N/D	N/D
CT chest/ chest x-ray	normal	serositis, lymphadenopathy, no pulmonary parenchymal abnormality	no pulmonary parenchymal disease
Autoantibodies	ANA neg., RF neg., ANCA neg.	ANA neg., RF neg., ANCA neg.	ANA neg., RF neg.
Pathology	skin biopsy: small vessel neutrophilic vasculitis	N/D	N/D
Medications (*current)	NSAID's, corticosteroids*, MTX, IVIG, cyclosporine A, infliximab, etanercept, anakinra, tacrolimus*	indomethacin*, corticosteroids*, IVIG	indomethacin*, corticosteroids*, MTX*

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CHRONIC DISEASE SCORES AND HEALTHCARE COSTS AMONG SENIORS IN ALBERTA CANADA Jian Sun, Katherine Gooch, Larry Svenson, Walter Maksymowych, Song Gao, Kelly Novak, Cy Frank (Institute of Health Economics, Alberta Health and Wellness, University of Alberta, University of Calgary)

Methods: Different types of medications prescribed during 2001/2002 for the treatment and management of chronic conditions were obtained from the Alberta Blue Cross (ABC) claims database. The medications were clustered into 25 therapeutic classes to indicate the presence of a chronic illness based on the criteria proposed by Clark et al. The study population was comprised of al Alberta residents aged 65 or older who were registered with the Alberta Health Care Insurance Plan (AHCIP) continuously from June 30, 2001 to June 30, 2002. Individuals were excluded if they had been diagnosed with any malignancy, tuberculosis or HIV during the study period. Three outcomes: total cost, outpatient care cost and the number of primary care visits in 2002/2003, were derived from AHCIP databases. Linear regression models were utilized to estimate parameters associated with age, gender and each medication class for each of the three outcomes. Results: Records for 221,230 seniors were used to estimate the empirical weights for calculating CDS. With the weights, an estimate of an individual's one-year predicted score for cost and visits can be obtained. For example, a 72-year-old man receiving medications for rheumatoid arthritis would have an estimated one-year total cost of $2591.96 (3447.66 (intercept) +592.62 (male)-2868.49(age65-74)+1420.17(rheumatoid arthritis)). Using the R-square criteria, our CDS prospectively explained 11.9% of the variance in total cost, 40.7% of outpatient cost, and 10.2% in primary care visit. These are higherin costs but lower in visits comparing with Clark's results. Conclusions: We estimated CDS with the same method proposed by Clark using Alberta data. The results showed that these models can be generally used to measure disease severity and to predict the prospective health service cost and utilization for different populations.

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A DEMONSTRATION PROJECT OF PATIENT GENERATED DATA FOR THE POINT OF CARE REPORTING IN THE MANAGEMENT OF ADULTS WITH RHEUMATOID ARTHRITIS Roselynn Chuong, Claire Bombardier, Edward Keystone, Vivian Bykerk (Clinical Decision Making and Health Care Research Unit, University Health Network, Toronto, Ontario, Clinical Decision Making and Health Care Research Unit, University Health Network, Toronto, Ontario; The Rebecca MacDonald Centre for Arthritis and Autoimmune Disease, Mount Sinai Hospital, Toronto, Ontario, The Rebecca MacDonald Centre for Arthritis and Autoimmune Disease, Mount Sinai Hospital, Toronto, Ontario)

Rationale: Current guidelines for rheumatoid arthritis (RA) state that clinic visits should include systematic, regular evaluation of disease activity in order to guide therapy and provide information on the progress of disease over time. Furthermore, research has supported the value of patient reported outcomes in the assessment of disease activity. However, questionnaires can be lengthy, may require special training to administer and may be difficult to score. With the advancement of clinical informatics initiatives, the use of direct data capture technologies and data at the point of care are now feasible. Objective: The aim of this pilot study was to determine the conditions that would be used in a randomized control trial to evaluate the effectiveness of point of care reporting. Methods: This prospective non-randomized pilot study involved 54 patients with RA from three rheumatologists. The intervention consisted of completion of health questionnaires before clinic visits and a point of care report that informed clinicians of the results. The pilot study used computerized self- administered questionnaires to develop a simple and efficient method of collecting information from patients. The pilot study also determined the usefulness of the outcome measures and evaluated patient and clinician satisfaction with the technology and the point of care report (POCR). Results: The computer application and data collection process were well accepted by patients and clinicians. Patients rated the ease of using the application with a mean score of 9.63 out of 10 (SD=0.98, median=10, range 4-10). Patients found the technology simple and easy to use and both patients and clinicians found the POCR very useful in identifying areas of concern, increasing the efficiency of the visit, providing relevant information on disease status, and improving patient-physician communication. Patients rated the usefulness of the POCR with a mean score of 7.51 out of 10 (SD=2.23, median=8, range 0-10). Conclusion: The implementation of computer patient data collection in routine rheumatological care in the clinic setting is possible and feasible.

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SLE AND MCTD IN THE PEDIATRIC NORTH AMERICAN INDIAN POPULATION OF BRITISH COLUMBIA Kristin Houghton, Jacqui Page, Ross Petty, David Cabral, Lori Tucker (British Columbia's Children's Hospital, Vancouver, British Columbia)

Purpose: To compare the estimated prevalence and the phenotype of pediatric systemic lupus erythematosus (SLE) and mixed connective tissue disease (MCTD) in a North American Indian (NAI) population with other ethnic groups.

Methods: Retrospective chart review of all patients with SLE and MCTD currently followed at the single tertiary care pediatric rheumatology clinic in our province. Data collected included demographic characteristics, family history of rheumatic disease, presence of classification criteria for SLE (ACR 1997) and MCTD (Sharp 1987), pertinent laboratory tests at diagnosis, SLEDAI at presentation and SLICC damage index at 6 months after presentation. Prevalence was estimated from our patient numbers using statistics Canada 2001 census data as a denominator. Statistical analysis was performed using SPSS version 11.0 software; proportions were tested using the chi-square test.

Table 1: Pediatric Patients Satisfying SLE[1] and MCTD[2] Criteria

	NAI (N=7)	Non-NAI (N=40)*
SLE criteria[1]	3	32
Both SLE[1] and MCTD[2] criteria	3 (1^{Def}, 2^{Prob})	2^{Prob}
MCTD[2] criteria	1^{Prob}	6 (3^{Prob}, 3^{Poss})

*Caucasian (13), Chinese (10), East Indian (5), Filipino (4), Viet Namese (4), Taiwanese (2), Singaporean (1), Iranian (1).

[1]SLE ACR criteria (1997). [2]Sharp's criteria (1987). $Definite^{Def}$, $Probable^{Prob}$, $Possible^{Poss}$ MCTD.

Table 2: Clinical Features

	NAI (N=7)		Non-NAI (N=40)		P value (chi-square)
Arthritis	7	(100%)	15	(38%)	<0.01*
Gastrointestinal symptoms	5	(71%)	3	(8%)	<0.001
Pulmonary involvement	4	(57%)	13	(33%)	NS
Myositis	3	(43%)	1	(3%)	<0.001
Renal disease	2	(28%)	18	(45%)	NS

Results: The prevalence of SLE / MCTD in our pediatric NAI population is 10.2 per 100,000 (n=7) compared to 3.9 per 100,000 in the non-NAI population (n=40). Mean age at diagnosis was 12.8 and 10.6 years for NAI and non-NAI children. All NAI patients were female (100%), compared to non-NAI SLE (70%) and MCTD patients (50%). NAI children were less likely to have discrete features of either SLE or MCTD but tended to share features of both; 3 of 7 met criteria for both SLE and MCTD (Table 1). Arthritis, gastrointestinal symptoms and myositis are more frequent in NAI children. There was a trend towards more pulmonary involvement and less renal involvement in NAI children but this did not reach statistical significance (Table 2). SLEDAI at presentation and SLICC scores at 6 months do not differ between NAI and non-NAI populations. Family history of rheumatic disease is more common in our NAI children (71%) compared to non-NAI children (12%) [p<0.0001 NAI versus non-NAI by chi-square].
Conclusions: The prevalence of SLE and MCTD is high in our NAI children. This population has a high prevalence of arthritis, gastrointestinal involvement, and myositis. Disease activity and damage do not appear to be in excess of other ethnic populations. Rheumatic disease in NAI family members is very common.
P<0.05 considered significant. X^2 with one degree of freedom. *calculated with 7/8 NAI patients with arthritis (unable to do chi square with all patients having the same outcome).

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IL-18 IN ADULT ONSET STILL'S DISEASE AND MACROPHAGE ACTIVATION SYNDROME Avril A Fitzgerald, Charles A Dinarello (University of Calgary, Calgary, AB, Canada, University of Colorado Health Sciences Center, Denver, CO, USA)
Objective: To assess the cytokine profiles seen in a patient with Adult Onset Still's Disease (AOSD) that evolved into Macrophage Activation Syndrome (MAS).
Methods: Cytokine levels by electrochemiluminescense (ECL), were measured. Two IL-18 assays were employed: mean IL-18 levels in healthy subjects 64 pg/ml+/-15 (ECL) and 126 pg +/- 44 using MBL ELISA. Patient received sequential therapies with cyclo-oxygenase inhibitors, corticosteroids, methotrexate and anakinra. Clinical course, laboratory tests and cytokine levels are detailed.

A	B	C	D	E	
Clinical	AOSD Active (pre-anakinra)	AOSD Flare (off anakinra)	AOSD Remission (on ankinra)	AOSD Flare (off anakinra)	AOSD remission (on anakinra)
Medication (mg/d)	Prednisone 30	Prednisone 20	Prednisone 20 Anakinra 100	Prednisone 30	Prednisone 7.5 Anakinra 100
IL-1α (<10 pg/mL)	102; 82				
IL-1ß (<10 pg/mL)	10.1; 3.9				
IL-1Ra (150-300 pg/mL)	2110, 1922	11,000	1,700	4014	2178
IL-6 (10-200 pg/mL)	702, 620	390	186	1624	400

Results: A 39 year old female was diagnosed with AOSD with fever, evanescent rash, arthritis, leukocytosis and hyperferritinemia. Disease was active on prednisone 30 mg/d. Cytokine levels were measured and shown in Table 1(A). Methotrexate was added without clinical improvement. Methotrexate was discontinued and daily anakinra 100 mg s/c administered with dramatic clinical and laboratory results. After three months, anakinra was withheld pending investigation of pulmonary hypertension, with resultant flare (B). Anakinra was restarted with dramatic clinical response, and change in cytokine levels(C). Cytokine levels during a subsequent anakinra-withdrawal induced flare (D) and anakinra remission(E) were measured. Two months later while on anakinra, in October 2003, patient developed fever, rash and elevated alkaline phosphatase following shingles, but settled. Two months later, she relapsed with fever, elevated CRP, serum ferritin and further elevation of alkaline phosphatase, total bilirubin and LDH. Liver biopsy suggested steatosis. Abnormal liver function tests persisted and two months later, high fevers developed with thrombocytopenia, hypofibrinogenemia, serum ferritin 5182 ng/mL (normal 12-200 ng/mL), CRP 162 mg/L (normal<8 mg/L). Pericardial effusion, hepatosplenomegaly and ascites developed. MAS was considered but bone marrow biopsy was non-diagnostic. With the clinical and lab features, and levels of IL-18, MAS was diagnosed. Cyclosporine and dexamethasone were added to anakinra with dramatic improvement. Cytokines were again measured. Four months later, systemic features and laboratory abnormalities continue to be controlled on cyclosporine, anakinra and prednisone 5 mg per day.
Conclusion: AOSD is an IL-1 mediated disease as shown by this patient's dramatic response to anakinra. IL-1α , IL-6 and IL-18 were elevated in active disease and IL-6 levels dropped with anakinra therapy. Levels of IL-18 were elevated to levels only seen previously in a patient with MAS. Hemophagocytosis in MAS is not always seen in the bone marrow. Overproduction of IL-18 is a critical abnormality in AOSD and systemic juvenile chronic polyarthritis. Transition to MAS may represent overproduction of IL-1b through an abnormality of caspase-1.

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SYSTEMIC-ONSET JUVENILE IDIOPATHIC ARTHRITIS – DISEASE COURSE AND SIGNIFICANCE OF EARLY CLINICAL AND LABORATORY FEATURES D. Singh-Grewal, N. Bayer, R. Schneider, B.M. Feldman (The Hospital for Sick Children Toronto Ontario)
Objectives: (1) Describe the disease course of SoJIA and (2) Assess whether clinical or laboratory features at diagnosis, 3 or 6 months can be used to predict disease course and time to remission.
Methods: Charts of children diagnosed with SoJIA (ILAR), between 1996 and 2001 were reviewed retrospectively. Demographic, clinical, and laboratory features were collected. Remission was defined as absence of clinical or laboratory disease for 3 or 12 months off medication. Graphical representations of the data were used to categorize disease as monocyclic, polycyclic or persistent. Predictors of disease course were identified at diagnosis, 3 and 6 months using logistic regression analysis. Predictors of time to remission were identified through Cox proportional hazards regression.
Results: 45 patients (19M), median age 7.1y (1.3-15.3y). Nineteen (42.2%) had monophasic course with a mean time to remission of 1.12y , 3 (6.7%) had polycyclic course and 23 (51.1%) had persistent course. Median follow-up was 4.38 years (1.12-7.68); all but 2 were followed for >2y and as these patients died during follow up (1.12 and 2.00y) both were analysed as having persistent course.
Twenty nine (64.4%) patients were treated with steroids at any stage during follow up and 21 (46.7%) received a second line agent – 21(46.7%) methotrexate, 6 (13.3%), 3 (6.7%) intravenous immunoglobulin, etanercept, 2 (4.4%) Infliximab and 1 (2.2%) Kineret. Seven (15.6%) received more than one second line agent.
Of patients that achieved a remission off medications at 3 months 95.5% remained in remission for 12 months. Three patients (13.6%) who achieved remission off medications at 3 months relapsed - two relapsed within one year (0.72,0.99 and 6.16y).
On multiple logistic regression polyarticular onset was related to persistent disease (OR=3.5; p=0.05) as were joint count (OR=14.6; p= 0.003)and fever (OR=42.0 [1.9-5278]; p=0.05) at 3 months. At 6 months corticosteroids predicted persistent disease (OR=17.0; p=0.003) as did ESR per mm/hr (OR=1.1; p=0.001) and Plt per 100x109/L (OR=12.4; p=0.01).
Earlier time to remission was predicted by pauciarticular onset (RR=1.60 [1.0 – 2.6]), no cortiosteroids at 3 (RR=2.5 [1.3 – 5.0]; p=0.004) and 6 months (RR=2.7; p=0.0003); active arthritis at 3 (0.28 [0.07 - 0.71]; p<0.0001) and 6 months (RR=0.000009; p=0.02); and ESR per mm/Hr at 3 (RR=0.93 [0.88 – 0.98] p=0.005) and 6 months (p=0.97 [0.94 – 0.99]; p=0.01).
Conclusion: SoJIA may be categorized as monophasic, polycyclic or persistent. Polycyclic disease is the least common and persistent disease is seen in >50% of patients. Polyarticular onset and disease features at 3 and 6 months can predict disease course.

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GETTING A GRIP ON ARTHRITIS: A NATIONAL EDUCATIONAL INTERVENTION FOR THE DIAGNOSIS AND TREATMENT OF ARTHRITIS IN PRIMARY HEALTH CARE Mary Bell, Jennifer Boyle, Sydney Lineker, Elizabeth Badley (Sunnybrook and Women's College Health Sciences Centre, Toronto, Ontario, Arthritis Community Research & Evaluation Unit, Toronto, Ontario, The Arthritis Society, Toronto, Ontario)
Aim of the Study: The objective of this study is to evaluate a community-based educational intervention designed to improve the diagnosis and treat-

ment of rheumatoid arthritis and osteoarthritis in primary health care.
Methods: Getting a Grip on Arthritis was designed by a taskforce consisting of primary health care providers, adults with arthritis, health services researchers, and government representatives and was successfully piloted in Ontario[1]. The intervention consists of 30 MAINPRO-C accredited workshops across Canada, educational materials for patients and providers and follow-up reinforcement for providers working in primary health care sites. The content of the intervention was designed around arthritis best practices which were adapted and updated (Fall 2004) from published arthritis guidelines. Over 300 primary health care facilities across Canada have been invited to participate in the project. The impact of the intervention will be determined through mailed surveys to providers and patients at baseline and follow-up surveys at 6, 12 and 18 months after the workshop as well as through key informant interviews with participating providers. Focus groups are being held with patients with arthritis in urban and rural communities across Canada to understand gaps in services and access to care issues.
Results: As of November 1, 2004, 70 primary health care facilities have agreed to participate in this project. Baseline surveys have been sent to 184 providers (NB, PEI, NS, SK, MB, ON) and to over 1600 patients (PEI, NS, MB, SK, ON) with the expectation of consent to follow 20-25% of patients over time. Four patient focus groups have been held. Four workshops have been held (Fredericton, NB; Charlottetown, PEI; Winnipeg, Manitoba; Prince Albert, Saskatchewan) with 26 others scheduled between November 2004 - March 2006.
Conclusions: It is expected that the Getting a Grip on Arthritis initiative will build the capacity of primary care providers, communities and patients to manage arthritis through improved implementation of arthritis best practices, increased community and patient involvement, and increased intersectoral, and interprofessional collaboration. This study will provide insights on how to translate arthritis best practices into action by providers in primary health care across Canada.
[1]Glazier RH, Badley EM, Lineker SC, Wilkins AL, Bell MJ. "Getting a Grip on Arthritis"©, an educational intervention for the diagnosis and treatment of arthritis in primary care. J Rheumatol 2004 (in press)

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DEVELOPMENT OF THE READINESS TO MANAGE ARTHRITIS QUESTIONNAIRE (RMAQ), A NEW MULTI-DOMAIN STAGES-OF-CHANGE INSTRUMENT FOR ARTHRITIS MANAGEMENT A. Barbara Arthur, Jacek A. Kopec, Alice V. Klinkhoff, Paul M. Adam, Susan L. Carr, Kelly E. Dumont, Jane M. Prince, Claudio R. Nigg (Arthritis Research Centre of Canada, Vancouver, BC, Vancouver Coastal Health Mary Pack Arthritis Program, Vancouver, B.C. , Vancouver Coastal Heatlh Mary Pack Arthritis Program, Vancouver, BC, Vancouver Coastal Health Mary Pack Arthritis Program, Vancouver, BC, University of Hawaii at Manoa, Honolulu, HI)
Objective. This study evaluated the psychometric properties of the Readiness to Manage Arthritis Questionnaire (RMAQ), a new measure of readiness for change in arthritis management.
Methods. Theoretical support was derived from the transtheoretical model, a model of behaviour change that incorporates different theoretical constructs including the central construct of stages-of-change. Development of the instrument was guided by the literature, clinical insight of the investigators and input from patients. This process led to the development of a 15-domain self-report questionnaire with each domain measured by a single question. A 5-point scale is used to assess levels of readiness to adopt behaviours shown to improve outcome in arthritis patients. Psychometric evaluation was conducted following expert review of content validity and pilot testing for clarity and ease of use. Data were obtained from a convenience sample of 47 patients with inflammatory arthritis admitted for intensive treatment. We assessed test-retest reliability, correlations between RMAQ domains, correlations with other theoretically related constructs and responsiveness to change.
Results. Test-retest reliability coefficients (Intraclass Correlation Coefficients) for the 15 domains ranged from 0.27 – 0.82. Coefficients > 0.6 were seen in eight domains: managing fatigue 0.60, taking medications 0.72, using joint protection 0.75, physical activity 0.70, dealing with frustration 0.71, maintaining employment 0.75, managing finances 0.82 and housing 0.69. Correlations (Spearman correlation coefficients) between stage-of-change scores for different RMAQ domains were in the expected direction. Strong correlations were found between sleep and fatigue (0.74) and stress and frustration (0.71). These results indicated some redundancy in the questionnaire and suggested that highly correlated domains could be collapsed. Correlations between RMAQ stage-of-change scores and self-efficacy for similar domains were generally weak and mostly non-significant. Depression scores, as measured by the Centre for Epidemiologic Studies Depression Scale, correlated significantly with RMAQ scores for sleep (0.31) and healthy eating (0.34). Responsiveness to change from initial assessment to 12 weeks post treatment was measured by changes in mean RMAQ scores for each of the 15 domains across five time points. Expected patterns of change were observed in areas of physical activity, use of joint protection, healthy eating, dealing with frustration and managing stress. Several lines of evidence, including results from statistical analyses and expert opinion, were used to reduce the number of domains measured from 15 to 7. The final instrument measures readiness to comply with medication regimen, control pain, manage fatigue, deal with frustration, adopt healthy eating habits, engage in physical activity, and use joint protection devices.
Conclusions. The abridged RMAQ has good psychometric properties in patients with inflammatory arthritis and can be used to assess a patient's readiness to engage in important arthritis management behaviours. Further analysis of the 7-domain RMAQ in patients with chronic inflammatory arthritis is planned.

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COMPARISON OF TWO WALKING OUTCOME MEASURES FOR PEOPLE WITH ARTHRITIS. Aaron Li, Catherine McAuley, Teresa Gain, Heather Walker (Arthritis Program, GF Strong, Rehab Centre, Vancouver, BC)
Objective: The objective was to compare clinically and statistically significant changes in mobility for an inpatient arthritis clientele as measured by the 6 Minute Walk Test (6 MWT) and the Timed Up and Go (TUG).
Method: The 6 MWT and TUG tests are outcome measures used for assessing functional mobility - walking and endurance. They have been tested with arthritis populations, including clients with total joint replacements. Assessment was done for 100 consecutive inpatients (86% with inflammatory arthritis and 14% with osteoarthritis). Of these, 55% were admitted from home and 45% were admitted from hospital after total joint surgeries. Data were analyzed separately for post-surgical (SURG) and home (HOME) groups. Data were collected within 5 days after admission and 3 days before discharge. Excel software was used for calculations. Paired t-tests evaluated differences between admission and discharge scores. Linear regression analyses and scatter plots were used to explore relationships between changes in TUG and 6MWT. The proportions of clients showing clinically relevant changes (estimated from published reports) were compared for each group with each measure. Results: Both tests were completed by 95% of clients. Mean age was 58 (range 17-84) and 24% were male. Time between tests was 32.4 (±16.3) days. The mean 6MWT in meters at admission was 218.3 (±144.1) and at discharge was 312 (±142.9) with a mean change of 93.7 (±71.7) meters; $p<0.001$. The mean TUG in seconds at admission was 27.2 (±24) and at discharge was 13.2 (±6.7) with a mean change of 14.0 (±21.2) seconds; $p<0.001$. This level of significance remained unchanged when home and surgical groups were analyzed separately. The relationships between changes in 6MWTand TUG were low for both groups, R2 = .01 and .17 for HOME & SURG respectively. The portion of clients demonstrating clinically relevant improvement was greatest when data from both outcome measures were combined. Some clients' improvement was measured only with the 6MWT while other clients improved only in the TUG. Conclusions: The 6MWT and TUG appeared to measure different aspects of walking. Clinicians consider the 6MWT to measure endurance and the TUG to be affected by balance. Both measures when used together provided the most complete estimate of walking improvement than either measure alone. Therefore our program will continue to use both measures for clinical assessment and program evaluation.

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CANADIAN FRENCH VERSION OF THE SELF-ADMINISTERED COMORBIDITY QUESTIONNAIRE (SCQ): TRANSLATION, TEST-RETEST STABILITY, AND INTERNAL CONSISTENCY IN PATIENTS WITH RHEUMATOID ARTHRITIS Murray Baron, Pantelis Panopalis, Marie Hudson, Joanna Caron, Maura Buchigniani , Suzanne Taillefer, Louise Demers, McGill Early Arthritis Research Group (McGill, U of Montreal)
Purpose: To translate the Self-Administered Comorbidity Questionnaire (SCQ) into Canadian French.

Methods: Initial forward translation of the SCQ into Canadian French was performed by two bilingual individuals whose mother tongue is French. The forward translation was back translated into English by two bilingual individuals, one with health-related experience, and the other from the lay public and whose mother tongue is English. The original version, the two French forward translations and the two English back translations were then reviewed by a committee that worked by consensus to ensure the conceptual and linguistic equivalence of the two versions and to finalize a single Canadian French version of the SCQ. The translated SCQ was pre-tested on a sample of six bilingual patients to ensure clarity and comprehension. They were asked to complete both versions of the instruments, in random order, and to indicate if they found any instructions or items difficult or ambiguous. They were debriefed after filling out the questionnaires and all their comments were noted and given to two French mother-tongue bilingual members of the initial review committee who readapted the French versions accordingly to produce the final version. Field-testing of the final version of the Canadian French SCQ was performed on 19 French-speaking rheumatoid arthritis patients, followed by analyses of test-retest reliability and internal consistency.
Results: The SCQ was successfully adapted for Canadian French and was well received by respondents. Test-retest showed strong reliability with a single measure intraclass correlation coefficient of 0.81. Cronbach's alpha, a measure of internal consistency, was 0.89.
Conclusion: The Canadian French SCQ is a reliable and internally consistent instrument that can be self-administered by Canadian French-speaking patients with rheumatoid arthritis to evaluate the presence and extent of comorbid conditions.

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THE BODY SCAN: USING SELF-EFFICACY CONSTRUCTS AND ADULT LEARNING PRINCIPLES TO RE-DESIGN ENERGY CONSERVATION AND JOINT PROTECTION CONCEPTS FOR INFLAMMATORY JOINT DISEASES. Ieva Fraser, Jean Painter (Southlake Regional Health Centre)
Compliance with complex treatment regimes for patients with inflammatory joint disease is often challenging. Connecting simplified treatment plans with patient belief systems is more likely to result in increased patient compliance with improved outcomes than using more traditional approaches. Traditional joint protection principles and energy conservation techniques are challenging for patients to consistently apply to make a difference to their disease process.
The Body Scan technique has been designed by occupational therapists at The Arthritis Program, Southlake Regional Health Centre for improved patient compliance with joint protection, energy conservation (external bridging treatment) in combination with medications (internal treatment).
The Body Scan uses adult learning theory and is framed within the concepts of self-efficacy. Using this methodology, disease activity and treatment is clarified for patients and their significant others. Using the Body Scan, the patients learn to self monitor their disease activity; analyze if lifestyle or a new epoch is influencing increased disease activity. The program occupational therapist is involved in teaching the Body Scan technique. The Body Scan translates disease symptoms (systemic, MSK, and extra articular) into layman's terms to facilitate self monitoring. A simple algorithm of "yes" "no" questions was developed to facilitate at home monitoring by patients. With increased knowledge, patients can either adjust activity level, employ energy conservation techniques and fine tune treatment regimes. They can also identify a potential new epoch of disease activity should the Body Scan reveal increased disease activity. Outcome evaluations reveal patients at discharge from the three week program show increased intent to employ the Body Scan and at six month follow-up show that patients have in fact employed the technique more regularly than previously.

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WHAT DOES AN IMPROVEMENT IN SELF-REPORTED OA PAIN AND DISABILITY REALLY MEAN? Sindhu R. Johnson, Alison Archibald, Aileen M Davis, Elizabeth Badley, Jim Wright, Gillian A Hawker (Department of Health Policy, Management and Evaluation, Division of Rheumatology, University Health Network, University of Toronto, Toronto, ON, Faculty of Medicine, Dalhousie University, Halifax,, Department of Health Policy, Management and Evaluation, Toronto Rehabilitation Institute, University of Toronto, Toronto, ON, Department of Health Policy, Management and Evaluation, Division of Outcomes and Population Health, University of Toronto, Toronto, ON, Department of Health Policy, Management and Evaluation, Division of Orthopedic Surgery, Hospital for Sick Children, University of Toronto, Toronto, ON, Department of Health Policy, Management and Evaluation, Division of Rheumatology, Sunnybrook and Women's Health Sciences Centre, University of Toronto, Toronto, ON)
Objective To assess whether improvement in WOMAC pain and function is associated with improvements in hip/knee disease activity (HDA, KDA), range of motion (ROM), or x-ray severity.
Methods Forty-three members of a population-based OA cohort without history of hip/knee arthroplasty underwent baseline (1997) and follow-up (2004) assessments: WOMAC completion, hip/knee examinations and x-rays, Timed-Up-and-Go (TUG) and Timed Chair Stand (TCS) tests (follow-up only). Using the Osteoarthritis Research Society International radiographic atlas, x-ray severity was defined for each joint as the sum of grades for each of joint space narrowing, sclerosis, osteophytes, and cysts. HDA was defined as stress pain; KDA was defined as any of erythema, heat, effusion or stress pain. The correlation between changes in WOMAC scores and changes in clinical outcomes were assessed using Kendall's Taub and Spearman coefficients.
Results Improvements in WOMAC pain and function, respectively, did not correlate with improvements in HDA (r=0.04*, r=0.23*), KDA (r=0.24*, r=0.22*), hip ROM (r=0.06*, r=-0.07*), or hip (r=0.07*, r=-0.04*) or knee (r=0.18*, r=0.01*) x-ray severity. However, current WOMAC pain and function were correlated with TUG (r=0.33, p=0.03; r=0.55, p=0.001) and TCS (r=-0.44, p=0.004; r=-0.64, p<0.001). (*p=not significant)
Conclusion Although a proportion of patients reported improvements in WOMAC scores, these improvements were not strongly correlated with improvements in clinical or radiographic status. However, with our sample size, we had insufficient power to detect correlations below 0.4. Regardless, this study highlights that the WOMAC should not be used as the sole measure of disease progression in OA.

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DIETARY SUPPLEMENTS VERSUS DRUGS - NON-DISCLOSURE VERSUS DISCLOSURE. A VIEW FROM AN ALCHEMIST (EDUCATING PHARMACIST) ON A RHEUMATOLOGY TEAM, 18 YEARS EXPERIENCE Marie J. Craig-Chambers (Southlake Regional Health Centre, The Arthritis Program, 596 Davis Drive, Newmarket, Ontario L3Y 2P9)
The Health Care Community is becoming increasingly inundated with medication disclosure challenges of highly regulated pharmaceutical treatments. At the same time, this Health Care system continues the non-committal ("it can't hurt you") attitude with respect to the "open and unregulated" market of information for products known as dietary supplements. Have we fallen into the trap of "what is not known is okay but what is known is not"? On one hand, the regulated industry and government bodies approving medication are all co-responsible along with the prescriber for the use of medications. In contrast, the "unregulated dietary supplement industry" accepts no responsibility. With an endorsement of "it can't hurt you" – is this responsibility now transferred to the one making this statement?
Once any product is "concentrated" it is no longer in the same risk versus benefit category range as food, be it garlic pills or shark cartilage. Many of these unregulated dietary supplements – the "natural herbals" are animal source products or made synthetically in the laboratory. Would you say, "it can't hurt you" about a regulated product let alone one that has no checks and balances attached to it's production, safety or effectiveness? This review will look at how to approach the difficult questions consumers ask re the dietary supplements. What about glucosamine, chondroitin versus hyaluronic acid? What about MSM versus DMSO? What about willowbark, meadowsweet versus NSAIDs? The review article "Arthritis Alternatives" by Marie J Craig-Chambers B.Sc.Phm published in the journal - Pharmacy Practice March 2003: 35-40 will be incorporated as part of the presentation.

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A VIEW FROM 18 YEARS EXPERIENCE AS A RHEUMATOLOGY TEAM PHARMACIST/MEDICAITON EDUCATOR - POSITIONED BETWEEN PRESCRIBER AND PATIENT: IN THIS CLIMATE OF "MEDIA AS MEDICAL EDUCATOR" AND "NATURAL IS BETTER", IS IT TIME TO REVIEW OUR OWN SUBTLE "NEGATIVE" MESSAGES? Marie J. Craig-Chambers (Southlake Regional Health Centre, The Arthritis Program, 596 Davis Drive, Newmarket, Ontario L3Y 2P9)

Are we, the Health Care Community, consumer friendly in our terminology or are we giving ammunition to the alternative therapies? The word "drug" has many connotations – illegal versus legal, addicting versus non-addicting. As a new Rheumatoid Arthritis patient who has never required medications in the past, would you like to be told : 1) you will require "drugs" (in essence, you will be "drugged") in order to treat the arthritis 2) you will require "steroids" to reduce your pain and improve function and 3) These drugs have side effects – these one are in the common category. What is the patient hearing or integrating? Should we be presenting treatments with a possible benefit with more positive terminology? Are we speaking a language that we understand but may well be misinterpreted by our patients? This review will focus on being more sensitive to not only "what we say" but "how we say it" and will review patient education materials/books with these principles in mind.

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MULTIFOCAL IDIOPATHIC FIBROSCLEROSIS: TREATMENT OF TWO CASES WITH CYCLOSPORIN Fayez Al-harthy, Andrew Chalmers (The Arthritis Research Center of Canada, University of British Columbia, Vancouver, BC)

Objective: To report two cases of multifocal idiopathic fibrosclerosis treated successfully with cyclosporin.

Patients and methods: Case I: 69-year old man presented with chronic intermittent abdominal pain for more than 10 years. Subsequently he had a laparotomy and cholecystectomy, but he was found to have cholangiolar fibrosis. In 1999, he had choledochojujenostomy. During the surgery, he was found to have right hydronephrosis with two masses in the kidney.The kidney and retroperitoneal biopsies showed the presence of fibrosis with active inflammation typical of retroperitoneal fibrosis. Subsequently he developed bilateral edema of the eyes and diplopia.

Examination revealed bilateral proptosis with restricted extra ocular movements. The left submandibular gland was swollen, firm and measures approximately 3x2 cm. There was a small subcutaneous mass over the right scapula. CBC was normal, ESR 24 mm/hr, C-reactive protein 23 and serum creatinine elevated at 151 umol/l. CT Scan of the head showed retro-orbital fibrosis. Case II: 74-year old man complained of chronic left upper quadrant abdominal pain for 5 years. Initial CT scan of the abdomen in 2000 revealed a bulky pancreas with a localized mass at the junction of head and neck which was been followed radiologically for 3 years without change in size. Repeat CT scan which was done in 2003 revealed a new pre-aortic mass(figure 1). Biopsy showed inflammation with leucocytic infiltration. On August 2003, he was found to have bilateral enlarged submandibular glands. Biopsy showed evidence of fibrosing inflammation. On examination he had bilateral submandibular firm masses measuring approximately 3x3 cm. He has no lymphadenopathy or palpable splenomegaly.

CBC,ESR, C-reactive protein and creatinine were normal.

Results: The first patient initially responded well to temporary ureteral stenting followed by combination therapy of steroids and cyclosporin up to 150 mg BID for 18 months. When cyclosporin stopped, he flared up again, but he subsequently went into complete remission with clinical and radiological resolution of all fibrotic tissues including retro-orbital fibrosis as well as normalization of inflammatory markers and creatinine when cyclosporin was reintroduced. He has remained on cyclosporin since then. In the second patient, Following 6 months of therapy with cyclosporin up to 125 mg BID, he became asymptomatic and the enlarged submandibular glands resolved. Retroperitoneal fibrosis as well as the pancreas significantly reduced in size (figure 2) and the pancreatic mass has completely disappeared. Cyclosporin was well tolerated with no significant side effects in the two patients.

Conclusion: Cyclosporin seems to be an attractive, safe and effective treatment for multifocal idiopathic fibrosclerosis and its clinical variant retroperitoneal fibrosis. However, the most optimal treatment of this syndrome remains unclear because of the rarity of the reports and the lack of clinical trials.

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DEVELOPMENT OF CRITERIA TO DIFFERENTIATE NEED FOR HOSPITAL POOL CONTINUATION VERSUS TRANSFERRING TO COMMUNITY POOL dschlotter@southlakeregional.org Southlake Regional Health Centre, The Arthritis Program

Backround: Literature and professional training substantiates the benefits of pool therapy for individuals diagnosed with 1. Inflammatory joint diseases 2. Degenerative joint disease 3. Fibromyalgia. Currently it is not clear how to measure when pool therapy outcomes have been achieved so that transfer to the community can occur. Clients resist change from the hospital therapy pool to community pools.

Purpose: To determine the cut-off score that can act as a guideline indicating whether the client would benefit from continuing in the hospital therapeutic pool, or can be transferred to the community pool.

Tools: SF 36, Timed walk up and go test, HAQ, FIQ

Method: Clients were first taught the appropriate exercises in the therapeutic pool by a physiotherapist. Sessions would last four to six weeks. At this point, they would be transferred to the afternoon 'recreational' pool sessions which would give them access to the heated pool to work independently on the exercises previously taught, or they were deemed ready to continue independently in the community pools. Those who remained at the hospital pool are rechecked after six months as a group to complete the above noted questionaires and have an individual physical assessment. For the purposes of this study, the HAQ and the Timed walk up and go test scores were used as the criteria to determine the appropriateness of remaining at the hospital pool.

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PATIENT AS EXPERT: WHAT IS THE ROLE OF THE HEALTH CARE PROVIDER Patrick Clifford, The Arthritis Program, Southlake Regional Health Centre

Description: Participants will understand the cultural traditions of health expert knowledge, the impacts on patients and a unique rehabilitation program approach to addressing this imbalance.

Abstract: A long and rich literature exists around the culture of health care, medicine and the role of patients. This literature suggests that marginalization of the patient, due to lack of health condition specific knowledge and skill has widely occurred. Some individuals respond actively to decreased health status, others more passively. The Arthritis Program at SRHC provides a broad range of assessment/treatment services to individuals with rheumatological conditions. A program for individuals diagnosed with Fibromyalgia will be described with respect to patients Illness Beliefs, Locus of Control and information acquisition. A description will follow with respect to patients becoming experts on their own health status. Locus of Control and Self Efficacy constructs will be discussed in the context a specific education/information/treatment program design that is geared to address, and improve information acquisition and illness mastery directed by the patient.