CTD subtype was not specified in 2,067. CTD-PAH patients had a mean age of 55 years and 87% were female. Most patients (70%) had functional class III or IV disease and the mean 6-minute walk distance at enrollment was 327 m. Among registries that enrolled patients of all PAH etiologies (N=7,829), survival rates in the CTD-PAH subpopulation (n=2113), were 83%, 73%, and 62% at 1-, 2-, and 3- years, respectively. These survival rates were lower than those reported for the overall PAH population: 88%, 79%, and 72% at 1-, 2-, and 3- years, respectively. Numerically higher survival rates at 1-, 2-, and 3- years were observed in CTD-PAH patients treated in 2010 and later: 85% vs 90%, 74% vs 82%, and 65% vs 73%. Among all CTD-PAH patients, survival rates were lower for patients with SSc compared to those with SLE: 88% vs 92%, 75% vs 82%, 67% vs 87% at 1-, 2-, and 3- years, respectively (Figure).

Conclusion: Patients with CTD-PAH have a substantial risk of death, however, CTD-PAH patients treated within the last ten years have numerically higher survival rates than those treated earlier. This may be related to increased screening for PAH, especially in SSc (leading to earlier diagnosis) and/or the availability of new treatment approaches. Consistent with clinical observations, patients with SSc have worse survival rates than those with SLE. Given the high risk of mortality in these patients, early detection and upfront aggressive treatment are warranted.

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FRI0540

DIFFERENT ASSOCIATION BETWEEN BONE MINERAL DENSITY AND OSTEOARTHRITIS ACCORDING TO THE SITE OF OSTEOARTHRITIS

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Background: Osteoarthritis (OA) and osteoporosis (OP) are both high prevalence at old age, and there are various reports on the association between the two diseases. Some studies have shown that high bone mineral density (BMD) is a risk factor for OA incidence, while others have mentioned the possibility of OP contributing to onset of hip OA. Recent study described that higher BMD reduce the risk of hip OA and raise the risk of knee OA. So, the relationship between BMD and OA or the effects of BMD on different OA site are not clear yet.

Objectives: In this study, we investigated the association between BMD and radiographic OA using representative sample data of Korean adults.

Methods: The study included 6345 subjects aged 50 years or older who underwent BMD measurements using dual-energy X-ray absorptiometry and X-rays of at least one site of the spine, hip, and knee in the Korean National Health and Nutrition Examination Survey conducted in 2010-2011. OA was defined according to radiographic finding (KL grade ≥ 2). Weighted multivariable logistic regression was used to analyze the association between BMD and OA. Since gender differences are evident, men and women were analyzed separately.

Results: Spine OA was about 60% in both men and women, and hip OA was about 35% in men but only 1% in women. Knee OA was 76% in women and 58% in men. In men, the risk of OA increased 1.24 times as BMD increased by 1 g/cm². By site, knee and spine OA were statistically significant in relation to BMD, but hip OA was not statistically significant. In women, the association between BMD and knee and hip OA was insignificant. In spine OA, the risk of OA increased 1.2 times when BMD increased by 1 g/cm².

Conclusion: In conclusion, high BMD increased the risk of knee and spine OA in men, but did not affect hip OA. In women, high BMD increased the risk of spine OA. Differences in the mechanism of OA development by site are thought to be possible explanations for the differences in the association between BMD and OA.

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FRI0541

TEN-YEAR OUTCOME OF DIFFERENT SUBTYPES OF UNDIFFERENTIATED INFLAMMATORY ARTHRITIS

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Background: A group of patients with recent onset of arthritis always presents a certain difficulty for the practitioner due to its marked heterogeneity. This especially concerns the patients with undifferentiated inflammatory arthritis (UIA).

Objectives: To characterize the long-term nosological outcome of clinical and immunological subtypes of early UIA.

Methods: A cohort study of patients with recent onset of arthritis with a duration of not more than 12 months (n = 761, 82.8% females, 55.2% RF +) was initiated in 2003. All patients were referred to rheumatologist from GP with suspicion on inflammatory arthritis. Inclusion criteria: age 18 years or more, at least 1 swollen joint at 1st visit and/or positive squeeze test or morning stiffness for at least 30 minutes. 243 patients were initially classified as having UIA: 46 (18.9%) males, 197 (81.1%) females, age (median, quartiles)- 44 [29;53] years, duration of symptoms- 3 [2;5] months, swollen joints count (66/68)- 2 [1;4], tender joints count 3 [2;6], 85 (35%) rheumatoid factor (RF)+, 63 (25.9%) anti-CCP+. Patients with UIA were followed up for at least 10 years.

Results: 28 (11.5%) of patients were lost to follow up. Long-term observation was conducted in 215 patients. 22 (10.2%) of them developed persistent spontaneous (without use of DMARDs) remission. Other patients were finally classified as having: rheumatoid arthritis (RA) 138 (64.2%) and non-RA (25.6%). The spectrum of diagnoses in non-RA group included: ankylosing spondylitis, osteoarthritis, gout, psoriatic arthritis, polymyalgia rheumatica, systemic lupus, mixed connective tissue disease, sarcoidosis, paraneoplastic syndromes. The following characteristics at baseline positively correlated with the development of RA: arthritis of 3 or more joints (p=0.011), arthritis of hand (p=0.005), high ESR (p<0.001), high CRP (p=0.003), PF-positivity (p<0.001), anti-CCP-positivity

Table. Outcome of different subtypes of patients with UA after 10 years of follow up (n=215).

Subtypes of UA	Outcome			P (Pearson chi-squared test)
	Non-RA (n=55)	RA (n=138)	Spontaneous remission (n=22)	
Mono- and oligo arthritis (n=140)	40 (28.6%)	81 (57.9%)	19 (13.6%)	0,016
Polyarthritis (n=75)	15 (20%)	57 (76%)	3 (4%)	
RF-negative AND anti-CCP-negative (n=90)	34 (37.8%)	41 (45.6%)	15 (16.7%)	
RF+ OR anti-CCP+ OR low levels (<3 ULN) (n=92)	20 (21.7%)	65 (70.7%)	7 (7.6%)	<0,001
High RF+ AND High anti-CCP+ (n=33)	1 (3%)	32 (97%)	0	

($p<0.001$), older age of onset ($p=0.019$), higher levels of RF IgM ($p=0.027$) and anti-CCP ($p<0.001$). Development of persistent spontaneous remission negatively correlated with polyarthritis ($p=0.033$), PF-positivity ($p=0.034$), anti-CCP-positivity ($p=0.001$). Positive seroconversion was observed: of RF in 10 (4.7%) patients, 8 developed RA, of anti-CCP – in 3 (1.4%) patients, all developed RA.

Conclusion: Seronegative oligoarticular disease and highly seropositive disease are different subtypes of UIA. Combination of seronegativity and oligoarticular disease ($n=52$) associated with relatively rare development of RA (36.2%) and high proportion of spontaneous remission (22.4%). Patients who were highly positive (>3 ULN) for both RF and anti-CCP developed RA in 97% of cases and never remitted spontaneously.

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FRI0542

OBTAINING HIGH POSITIVE PREDICTIVE VALUES FOR THE DEVELOPMENT OF CLINICALLY APPARENT ARTHRITIS IN PATIENTS PRESENTING WITH CLINICALLY SUSPECT ARTHRALGIA; IS IT FEASIBLE?

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Background: The hypothesis that initiation of DMARD-treatment before arthritis becomes apparent could permanently modulate the disease process, such that persistent RA is prevented, is being studied in several ongoing trials. Essential for such studies is the ability to accurately predict clinically apparent inflammatory arthritis (IA). However there are two hurdles: first, it is insufficiently known whether it is possible to obtain high positive predictive values (PPV) in patients presenting with clinically suspect arthralgia (CSA). Second, none of current predictive models is validated in independent cohorts. We here aimed to evaluate the first question, incorporating improved markers of MRI-detected subclinical inflammation that were recently identified but have not yet been combined with other known predictors.[1]

Objectives: To assess the feasibility of achieving high PPVs in prediction of IA-development in patients with CSA by combining clinical, laboratory and imaging parameters.

Methods: 580 patients with CSA were consecutively included in the Clinically Suspect Arthralgia (CSA)-cohort and followed on the development of IA, determined by physical examination of joints. Unilateral contrast-enhanced 1.5 Tesla MRIs were made of MCP(2-5), wrist and MTP(1-5)-joints at baseline and scored in line with the RAMRIS. The number of locations with sub-clinical inflammation (0/1-2/ ≥ 3) and the presence of MCP peritendinitis were defined as described previously.[1] Other studied clinical and laboratory variables were based on the literature: initial localisation of complaints (small/large joints), functional disability (health assessment questionnaire (HAQ) ≥ 1), ACPA-positivity (Anti-CCP2), RF-positivity (IgM-RF) and elevated CRP. [2,3] LASSO Cox regression with a 10-fold cross-validated shrinkage parameter was used for predictor selection. Regression coefficients were rounded to the nearest number ending in .5 or .0 and multiplied by two, resulting in a weighted score. Kaplan Meijer curves were used to obtain PPVs of this weighted score and the area under the curve (AUC) was determined at 2-year follow-up.

Results: Mean age was 44, 78% was female, and 18% progressed to IA within 2 years. The following parameters were selected with LASSO: RF-positivity, ACPA-positivity, HAQ ≥ 1 , >2 locations of subclinical inflammation and presence of MCP-extensor peritendinitis. Based on the beta of LASSO-regression, patients were assigned 2 points for the risk-factors ACPA-positivity and >2 locations of subclinical inflammation, 1 point for RF-positivity and presence of MCP-extensor peritendinitis and 0 points for HAQ ≥ 1 . Kaplan Meijer curves show PPVs of 8%, 9%, 30%, 54%, 73%, 79% and 86% at two years (Figure 1). This model yielded an AUC of 0.79.

Conclusion: High PPVs for IA-development can be achieved in patients with CSA by weighting a combination of known predictors. Although encouraging,

Figure 1. Kaplan Meijer curves on inflammatory arthritis development stratified for number of points based on LASSO regression. Legend: Points were based on the regression coefficients yielded by Cox LASSO-regression. 2 points were assigned for the risk factors ACPA-positivity and >2 locations of subclinical inflammation and 1 point was assigned for RF-positivity and presence of MCP-extensor peritendinitis.

these data are based on one observational cohort study and have not been validated in independent cohorts, limiting the relevance. To support future research in the field of arthralgia, it is needed that different research groups work together to come to risk estimations that are validated and accepted.

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FRI0543

BIRTH REGISTRY OF WOMEN WITH SYSTEMATIC LUPUS ERYTHEMATOSUS AND COURSE OF THE DISEASE DURING FIRST YEARS POST-PARTUM-THE GREEK EXPERIENCE

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Background: Pregnancy in women with SLE Systematic Lupus Erythematosus (SLE) has been related with adverse events both in the mother and the foetus. 1 Many studies have reported relapse of the disease during the pregnancy and post-labour, while others have not confirmed this finding. 2 To this end, most of these results originate from retrospective studies with patients of diverge ethnicities.

Objectives: To record the Greek experience with pregnancies in mothers with SLE and their outcomes, as well as the course of the disease during first year post labor.

Methods: This is a prospective, multicentre, observation study lasting three years. Women diagnosed with SLE who became pregnant consented to be monitored by their treating Rheumatologist. A structured questionnaire is used for monitoring at the beginning of pregnancy (positive pregnancy test) and at least every 3 months thereafter, depending on the course of the disease and pregnancy, until one year after childbirth.

Results: A total 64 women and 81 pregnancies were recorded (1.27 pregnancies per patient). Patient's age at conception was 32.8 ± 5.9 years (mean $\pm$ standard deviation). Thirteen patients (20.3%) had past history of nephritis. Regarding pregnancy outcomes, 62 (76.5%) pregnancies ended in live births, miscarriages during 1st, 2nd and 3rd trimester occurred in 13 (16%). Six pregnancies were lost to followup. Prematurity occurred in 28 live births (45.1% in total), 26-32w (3.2%), 32-36w (22.5%), $<37w$ (19.3%). No cases of preeclampsia occurred. Mean age of birth **36.9 weeks** and mean birth weight **2750gr**. The majority (72.5%) of deliveries were performed by caesarean section. In terms of disease activity, most of the women had mild disease at conception, (SLEDAI-2K: 2.67 ± 2.69) that