Objectives A pilot study to assess the effect of increased air pressure in a hyperbaric chamber on patients with active rheumatoid arthritis.

Methods Seven out-patients with active rheumatoid arthritis (RA) and taking at least one disease modifying anti-rheumatic drug (DMARD) entered a hyperbaric chamber for 30 min. Patients were randomised to control and test groups and assessed in a double-blind fashion. The test group had the atmospheric pressure increased to 2 atmospheres. The control group did not have the pressure altered. Active disease was defined as a pain score on a 100 mm visual analogue scale (VAS) greater than 60 mm and 3 out of 4 from the following: – ESR >28 mm/hr, >6 swollen joints, >6 tender joints and early morning stiffness >45 min. The following were recorded or measured: pain score (by 100 mm VAS), number of swollen joints, number of tender joints, patients global score on a 100 mm VAS, ESR and CRP. The above measurements were repeated 30 min after leaving the hyperbaric chamber, the following day and 7 days later. Disease Activity Scores (DAS) were calculated using the DAS 28.

Results Four female and three male patients participated. Mean age was 58.4 years (range:41–71 yrs), mean disease duration 10.86 yrs (4–20 yrs). In the test group the pain score of 1 patient was reduced by 60% and DAS by 38% at 24 hrs but had returned to the pre-test values by 7 days. Pain scores from the other 2 patients did not alter. In the control group the pain scores of 2 patients had fallen by 60% and 64% and at 30 mins post-test. This effect was maintained to 7 days for the latter patient whose DAS fell by 54% and at 24 hrs for the former patient whose DAS did not change, however, this patient's oral steroid dose was inadvertently altered between the 24 hr and 7 day assessment. All patients in the test group had reduced swollen joint counts at 30 mins and 24 hrs post-test, this was maintained at 7 days in 2 patients; the tender joint count was reduced in 1 patient at 24 hrs only. 3 out of the 4 control patients had reduced swollen joint counts from 30 mins post-test this was maintained at 24 hrs and 7 days, the same patients also had reduced tender joint counts. There was no change in the ESRs in either group. The CRP in 1 patient from the test group fell at 24 hrs and further decreased at 7 days. In the control group CRP decrease in 1 patient at 24 hrs only, neither of these 2 patients had reduced pain scores or DAS during the study.

Conclusion In the small number of patients studied, increased atmospheric pressure does not appear to have any effect on active rheumatoid arthritis. There also appears to be a large placebo response.

THU0140 RHEUMATOID ARTHRITIS (RA) IN VILNIUS AND OSLO: A COMPARISON REGARDING DISEASE AND HEALTH MEASURES

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Background In Bone and Joint Decade comparative studies between countries could contribute to better understanding of disease burden of rheumatic diseases.

Objectives To compare disease and health status measures in RA patient cohorts from Vilnius, Lithuania and Oslo, Norway.

Methods For 201 patients from Vilnius RA register, matched cases according to age (mean 55.9 (SD1.0)) and gender (167

female) were identified in Oslo RA register. Study variables included sociodemographic characteristics, health status measures (MHAQ, SF-36, pain VAS), disease process measures (disease activity score (DAS-28)), ESR) and previous/current treatment.

Results Most disease activity and health status measures were worse in Vilnius patients (Table 1). Rheumatoid factor positivity was observed in 61 vs.49% ($p = 0.03$) in Vilnius and Oslo, respectively. Methotrexate was currently or previously used by 36 vs.49% ($p = 0.05$) and azathioprine by 29 vs.13% ($p = 0.000$) in Vilnius and Oslo. For other DMARDS, including corticosteroids no important differences were observed.

Abstract THU0140 Table 1

	Vilnius (n = 201)	Oslo (n = 201)
MHAQ (1–4)	2.30(0.78)	1.63(0.53)*
Pain (0–100 VAS)	59.4(20.0)	36.2(22.1)*
Patient global (1–5)	4.9(1.8)	4.2(2.0)*
Investigator global (0–100)	47.6(22.8)	29.2(24.7)*
DAS-28	5.26(1.0)	4.37(1.4)*
SF-36, physical functioning	35.2(25.2)	48.5(25.6)*
SF-36, mental health	54.6(21.0)	68.7(19.7)*
ESR mm/hr	28.6(13)	20.5(17.5)*

*-p-value <0.001, t-test for continuous values and chi-2 for counts.

Conclusion In this two-country comparison RA patients from Lithuania had generally worse health status and higher disease activity. This difference could represent geographic differences in disease severity or unequal access to rheumatology care.

THU0141 THE DIAGNOSTIC VALUE OF RHEUMATOID FACTORS AND ANTIBODIES TO CYCLIC CITRULLINATED PEPTIDE (CCP) IN EARLY ARTHRITIS

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Background

Objectives To study the diagnostic value of IgM-RF, IgA-RF, anti-CCP and combinations of these antibodies measured at baseline to discriminate rheumatoid arthritis (RA) from undifferentiated polyarthritis (UPA) in patients with recent onset arthritis.

Methods Early arthritis patients with peripheral arthritis of 2 or more joints and less than 3 years of symptom duration were clinically diagnosed as RA or UPA by the rheumatologist during the first year. Excluded from the study were patients with bacterial, psoriatic, crystal-induced arthritis or spondylarthropathy. Optimal cut-off values for serum IgM-RF, IgA-RF and anti-CCP were deduced from Receiver Operating Characteristics (ROC) curves.

Results 379 patients (69% female, median age 57 (17–86)) were included. 258 patients were clinically diagnosed as RA and 121 as UPA. The Table 1 shows optimal cut-off values for IgM-RF (IU/ml), IgA-RF (arbitrary units: AU/ml) and anti-CCP (AU/ml) with the matching specificity and sensitivity percentages.

Both the IgM-RF > 40 and anti-CCP > 50 have a high specificity but the sensitivities are low. Because in many RA patients the occurrence of IgM-RF and anti-CCP antibodies are independent from each other, the best test criterion proved to be the

combination of IgM-RF > 40 or anti-CCP > 50, with a sensitivity of 55.4% and a specificity of 96.7%.

Abstract THU0141 Table 1

	Specificity (%)	Sensitivity (%)
IgM-RF > 30	93.4	50.4
IgA-RF > 10	94.2	52.7
Anti-CCP > 50	97.5	42.6
IgM-RF > 40	96.7	46.5
IgM-RF > 30 and IgA-RF > 10	96.7	46.5
IgM-RF > 40 or anti-CCP > 50	96.7	55.4

Conclusion The criterion IgM-RF > 40 or anti-CCP > 50 is able to predict the onset of RA with a high specificity and acceptable sensitivity. Anti-CCP testing provides additional information on which to base treatment decisions in early arthritis.

THU0142 RELATION BETWEEN NTX AND CARF IN RHEUMATOID ARTHRITIS

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Background It is well known that cytokines cause abnormal immunity affecting bone resorption in rheumatoid arthritis (RA). NTx (typeI collagen cross-linked N-telopeptides) is bone resorption marker, CARF (Anti-agalactosyl IgG antibodies) is a new rheumatoid factor which is able to detect all RF isotype, and allows early diagnosis of the onset of RA.

Objectives To find out the bone resorption in RA, we investigated the relation between NTx and CARF, inflammatory parameters CRP and ESR, Lansbury's joint count which is the score for the affected joint.

Methods NTx and CARF were measured in 31 RA patients (male:1 case, female:30 cases). And CRP, ESR, Lansbury's joint count was measured at the time, and examined about that relationship.

Results Significant positive correlations were observed between NTx and CARF ($r^2 = 0.211$ $p = 0.0093$), and between NTx and joint count ($r^2 = 0.154$ $p = 0.0321$), however, no significant correlations were observed between NTx and CRP or ESR.

Conclusion These results suggest that NTx has a potentiality as the joint destruction marker, reflecting not only general inflammation but also local inflammation such as arthritis.

THU0143 ASSOCIATIONS OF WALKING ABILITY TO ISOKINETIC KNEE EXTENSOR AND FLEXOR STRENGTH IN WOMEN WITH RHEUMATOID ARTHRITIS (RA)

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Background

Objectives

Methods Seventy-five women with RA according to the 1987 ACR criteria were examined. Mean age was 62 ± 13 years,

median disease duration 11 (1–51) years. Sixty-three were or had been on steroids [median cumulative prednisolone dose 2.5 (0.05–66) g]. Sixty-seven age-, weight- and height-matched healthy women served as controls. Maximal voluntary knee extensor and flexor strength (Nm) was assessed at 30o/s by an isokinetic dynamometer. Walking ability was expressed as walking and stair climbing speed (m/s). Markers of disease activity included number of swollen and tender joints, pain as recorded by the patients on a visual analogue scale (VAS), and disability as scored by the Stanford Health Assessment Questionnaire (HAQ). Statistics: non-parametric.

Results Muscle strength, walking speed and stair climbing speed were on average reduced by 30%, 28% and 54% ($p < 0.0001$), respectively, compared to the controls. Significant correlations were found between knee extensor strength and walking speed ($r = 0.79$, $p < 0.0001$) and stair climbing speed ($r = 0.69$, $p < 0.0001$). Similar correlations were found for flexor strength. The correlations remained significant (R_{partial} ranging from 0.64 to 0.69, $p < 0.0001$) in multiple regression analyses adjusting for age, height, weight, disease duration, number of swollen and tender joints, VAS- and HAQ-score.

Conclusion In conclusion, leg muscle strength is considerably reduced and is an important determinant of walking ability in RA.

THU0144 ASSOCIATION OF ANTIPHOSPHOLIPID ANTIBODIES WITH RETINAL VASCULAR DISEASE IN RHEUMATOID ARTHRITIS

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Background Rheumatoid arthritis (RA) may affect any organ of the body and display a broad spectrum of clinical and immunological manifestations. Ocular involvement has been described less commonly and includes involvement by mucocutaneous disease, secondary Sjogren's syndrome, neuro-ophthalmic lesions, and retinal vascular disease.

Objectives The aim of our study was to analyse the possible association between the presence of antiphospholipid antibodies (aPL) and retinal lesions detected by means of prospective ophthalmologic examination in a series of RA patients.

Methods Sixty-eight female RA patients attending our Extra-articular Involvement RA Clinic were studied. All patients fulfilling the 1987 American Rheumatism Association Criteria for adult RA. Ophthalmologic examination included assessment of best corrected visual acuity, tonometry, slit-lamp biomicroscopy, and fundus examination. Serologic studies included determination of anticardiolipin antibodies (aCL) (ELISA) and Lupus Anti-coagulant (LA) (Coagulation Test).

Results Retinal vascular disease was detected in 7 (10%) of 68 RA patients. The retinal lesions consisted of retinal vascular occlusion in two patients (one arterial and one venous thrombosis), cotton-wool spots in one, optic disc oedema in two cases, retinal haemorrhages in one, and ischaemic optic neuropathy in one case. aPL were detected in 5 (71%) of these 7 patients: four had aCL and one had LA. When compared with patients without retinal vascular disease, patients with retinopathy had a higher prevalence of aPL (71% vs 6%); $p = 0.0001$.