At the baseline, standard clinical examination for all patients were blood tests, urine test, coagulation panel and ECG.

Results: After comparing of two groups by the end of course the intensity of pain by VAS was significantly greater in R group ($21,88 \pm 13,24$ vs $16,81 \pm 13,49$; $p < 0,0001$). There were no significant differences between groups in improvement of WOMAC, WOMAC subscales and MPQ from baseline. Serious adverse events (AE) were absent. 11 AE's were detected 3,3% (5/150), but in 100% of cases AE's were resolved by the end of course.

Conclusion: CS is effective decreased intensity of pain and stiffness, improved functional ability of joints both intramuscular and concomitant route of administration. However, significantly greater results at pain intensity by VAS shows combination: pain intensity by the end of course was significantly lower in group with concomitant intramuscular and intra-articular injections. Probably, it was associated with faster resolution of synovitis by intra-articular route of administration, that leads to choose this route for patients with comorbidity.

Evaluation of pain by VAS in groups

Disclosure of Interests: None declared.

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AB0604 FACTORS ASSOCIATED WITH PAIN IN EARLY KNEE OSTEOARTHRITIS (PRELIMINARY DATA)

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Background:

Objectives: To identify factors associated with pain in patients with early knee osteoarthritis fulfilling ESKOA criteria [1].

Methods: 50 patients (46 women (92%); 4 men (8%)) fulfilling ESKOA criteria were enrolled in the trial, every participant signed up the consent form. Median age of patients was 47 ± 8 yrs (36 – 63 yrs), body mass index (BMI) was 28.5 ± 4.9 kg/m² (40% of patients had obesity). Every patient, after signing the standard informed consent form, was addressed to a physician, who would fill in an individual case report form (CRF), including anthropometric parameters, history of OA, comorbidities and physical examination data. Knee pain was also assessed with the use of visual analog scale (VAS). All participants underwent knee X-ray according to the standardized fixed flexion protocol with the use of positioning frame [2].

Results: Most of the patients (70%) were between the ages of 35 and 50 and only 15 of them (30%) were older than 50 years. Median knee pain duration was found to be 16 (12-20) weeks, intensity of VAS – knee pain was 46 mm (42-50). Median number of episodes of knee pain (in the last 6 months) was 3 (2-6); 30 participants (60%) had episodes of knee pain lasting less than a week, 8 of them (6%) had pain lasting for around a week, 12 of them (24%) had episodes of pain lasting more than one week. In most patients (74%) pain relieved with time, without any additional therapy. Most of the patients had episodes of knee pain linked to increased overload (48 (96%)), when squatting (41 (82%)), most of the patients also reported pain when climbing up and down the stairs (80%) and short joint stiffness when starting movement (76%). Knee pain after sitting was reported in 54% of cases and 20 participants (40%) also reported some walking limitations due to knee discomfort.

Knee X-ray revealed that most of the patients had I Kellgren&Lawrence (K&L) stage knee OA (picture 1). All the included participants had ESR (7 (5-10 mm/hr)) and CRP (1.24 (0.8-2.2 mg/l)) within normal range.

Picture 1 – Radiological knee OA stage (K&L) distribution in the study group

In the Spearman correlation analysis, we have estimated the factors, which may be associated with more severe pain in patients with early knee OA fulfilling the ESKOA criteria. We found out that higher BMI ($r=0.38$, $p=0.02$), presence of metabolic syndrome ($r=0.37$, $p=0.008$) and hypertension ($r=0.29$, $p=0.04$), as well as walking limitations ($r=0.33$, $p=0.008$) are associated with knee pain.

Conclusion: The use of ESKOA criteria in patients with short duration of knee pain can facilitate diagnosis of osteoarthritis on an early stage. In addition, the acquired data show that timely diagnosis and correction of certain components of metabolic syndrome may be beneficial for the course of knee pain intensity in patients with early knee OA, further continuation of this trial is necessary.

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AB0605 ACTIGRAPHY-BASED PHYSICAL ACTIVITY MONITORING IN PATIENTS WITH KNEE OSTEOARTHRITIS AND COMORBID FIBROMYALGIA

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Background: Low physical activity (PA) levels are common in patients with diseases associated with pain syndrome, such as osteoarthritis (OA) of the knee joints. Recent studies show that OA may be accompanied by concomitant fibromyalgia (FM) – a chronic pain syndrome associated with sedentary behavior [1]. As far as low PA levels are associated with poor quality of life and higher all-cause mortality, PA measurement in patients with knee OA and concomitant FM is of considerable interest [2,3].

Objectives: The aim of this study was to investigate and compare physical activity measured by an actigraph in knee OA patients with and without comorbid FM.

Methods: A total of 70 patients with painful knee osteoarthritis (OA) – 35 subjects – (30 females and 5 males) with concomitant fibromyalgia (FM) aged 59.8 ± 14.9 (M $\pm$ SD) years and 35 patients (30 females and 5 males) without concomitant FM aged 58.5 ± 15.7 (M $\pm$ SD) years were enrolled in the study. 35 healthy controls of the same age and gender underwent the same investigation. OA diagnosis was established according to ACR 1986 Osteoarthritis Knee Criteria. FM was diagnosed if both modified 2010 ACR diagnostic criteria and 2016 Fibromyalgia Diagnostic Criteria were met. All participants wore an actigraph (GT3X model accelerometer) on the wrist for the period of 5 working days. Average daily minutes in light, moderate and vigorous PA were calculated.

Results: All OA patients with and without FM spent significantly less time in vigorous PA compared to controls. Obtained results did not indicate significant difference between time in vigorous activity in OA patients with and without FM. Patients with OA alone showed insignificant decrease in time in moderate activity in comparison with healthy subjects. OA patients with comorbid FM showed significantly less time in moderate activity compared to OA patients without FM and healthy individuals.

Conclusion: Our study results revealed that patients with painful knee OA and comorbid FM have greater activity limitations than patients with painful knee OA alone and healthy individuals.

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Osteoporosis

AB0606

IMPACT OF ABDOMINAL AORTIC CALCIFICATION AND SERUM CREATININE-TO-CYSTATIN C RATIO TO BONE FRAGILITY FRACTURE

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Background: Relationship between bone fragility fracture (BFF) and abdominal aortic calcification (AAC) has been discussed in recent decade.

Objectives: Now we investigated the relationship between the two and a new factor of BFF: serum creatinine-to-cystatin C ratio (Cr/CysC).

Methods: A total of nine-hundred and thirty one osteoporotic patients were recruited. Diagnosis of osteoporosis was indexed by the criteria of Japanese Primary Osteoporosis Diagnostic Criteria. Patient's lumbar spine X-ray pictures were taken and dual-energy X-ray absorptiometry (DXA) of lumbar spine and hip joint were tested at the same time, and all of them were followed us for more than one year up to nine years with at least an administration of vitamin D. Anti-osteoporotic drugs were administered for 660 patients.

Vertebral compression fracture (VF) and AAC were evaluated with lateral view of X-ray picture. VF was classified in accordance with Semi-quantified method (SQ), and AAC was classified as follows: Grade0; No calcification, Grade1; Partial calcification not continued over one vertebral height, Grade2; Calcification continuous over one vertebral height. BFF history of the patients except of VF was harvested from the medical record and with interview. Patients' background at first measurement were measured and Cr/CysC was calculated as well. Prevalence of BFF at the baseline for each grade with SQ was compared according to the grade of AAC. Background factors including bone mineral densities (BMD) of the lumbar spine and hip joint measured using DXA were compared for each AAC grade.

Occurrence of BFF was picked up during following up (BFF_F/U) of the patients. Prevalence of BFF_F/U for each ACC grade was statistically compared, and relationship between BFF_F/U and factors at the baseline was statistically evaluated.

Results: A total of 219 of Grade0, 428 of Grade1, and 278 of Grade2 were recruited. Prevalence of BFF at baseline for each VF group was 182, 16, 9, and 12 for Grade0, 138, 98, 122, and 70 for Grade1, and 53, 45, 82, and 144 for Grade2, with Grade-0, Grade-1, Grade-2, and Grade-3 by SQ, respectively ($p < 0.01$). Factors that demonstrated significant correlation with occurrence of BFF were sex, age, BMD of the lumbar spine and the hip joint, and Cr/CysC with univariate mode binary logistic regression analysis. However, Cr/CysC did not demonstrate significant correlation using multivariate model.

Occurrence of BFF_F/U for each AAC group was 26, 90, and 82 for Grade0, Grade1, and Grade2, respectively ($p < 0.01$). The only factor that demonstrated significantly correlated with occurrence of BFF_F/U was Cr/CysC in the Grade1 and the Grade2 of the AAC classification.

Conclusion: ACC grade significantly correlates with occurrence of BFF. Cr/CysC also significantly correlates with occurrence of BFF after follow up under presence of AAC.

Disclosure of Interests: None declared.

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AB0607

DO HIP STRUCTURAL ANALYSIS MEASUREMENTS PREDICT FRACTURE RISK IN PATIENTS WITH POLYMYALGIA RHEUMATICA?

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Background: Polymyalgia Rheumatica (PMR) is an inflammatory condition which commonly affects the elderly. Risk of fracture is higher in this group of patients compared to the general population and can lead to increased morbidity and mortality (1). Hip structural analysis (HSA) is a technique that uses dual-energy X-ray absorptiometry (DEXA) images to assess hip bone structure (2).

Objectives: To identify whether HSA measurements help predict fracture in patients with PMR.

Methods: Data were collected from June 2004 to October 2010 from PMR patients who had a DEXA scan at a District General Hospital. This included hip axis length (HAL), cross-sectional area (CSA), cross-sectional moment of inertia (CSMI), distance from centre of femoral head to centre of femoral neck (D1) and to inter-trochanteric line (D2), mean femoral neck diameter (D3), shaft angle (A) neck/shaft angle (Θ) and proximal femur strength index (SI) and distance from centre of mass of femoral neck to superior neck margin (Y). Fracture was predicted by a series of binomial logistic regression models, adjusted for age and sex. Odds ratios with 95% confidence intervals and area under the receiver operating characteristic curve (AUC) were calculated.

Results: 714 patients with PMR were identified, 182 were male and the mean age was 70.5. HAL, CSMI, D1, D2, D3, A, Θ, SI and Y were not significant predictors of fracture in regression models; odds ratios are included in Table 1. CSA predicted fracture risk; odds ratio was 0.988 with a 95% confidence interval of 0.980-0.997. The AUC for the CSA regression model was 0.6739.

Table 1. Odds ratios of fracture for different HSA parameters

HSA Parameter	Odds Ratio (95% confidence interval)
HAL	1.008 (0.982 - 1.035)
CSMI	1.000 (0.999 - 1.000)
CSA	0.988 (0.980 - 0.997)
D1	1.029 (0.972 - 1.089)
D2	1.010 (0.981 - 1.040)
D3	1.033 (0.962 - 1.109)
Y	1.087 (0.966 - 1.223)
A	0.983 (0.940 - 1.029)
Θ	1.007 (0.975 - 1.039)
SI	0.683 (0.406 - 1.150)

Conclusion: These data suggest that CSA helps predict the risk of fracture in patients with PMR. HAL, CSMI, D1, D2, D3, A, Θ, SI and Y do not predict fracture risk. Limitations of the study are that it was retrospective and only studied patients who underwent DEXA scans. The study may have been underpowered to detect the impact of some HSA measurements on fracture risk.

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AB0608

BONE MINERAL DENSITY, VITAMIN D STATUS AND BONE METABOLISM IN A COHORT OF ADULT PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Background: Patients with inflammatory bowel disease (IBD) have an increased risk of low bone mineral density (BMD) and bone fractures due to several mechanisms. However, the best management of osteoporosis in this population is yet to determine.

Objectives: To evaluate bone mineral density and other clinical, analytical and demographic features related with the risk of bone fractures in an IBD cohort.

Methods: Retrospective monocentric study including all the patients with IBD consecutively referred from Gastroenterology to the Rheumatology Department in a tertiary university hospital between January of 2013 and October 2020. Demographic, clinical and analytical data and BMD by dual-energy X-ray absorptiometry (DXA) (total hip, femoral neck and lumbar spine) were collected at the time of the first visit in the Rheumatology outpatient center. Correlations between variables were evaluated by Spearman rank test and Mann-Whitney U test was used in the comparison analysis between groups (significance level at $p < 0.05$), using SPSS 25.0 software.

Results: A total of 222 patients were included: 128 (57.7%) females, mean age of 43.4 (± 13.6) years, mean IBD duration of 11.6 (± 9.7) years. Regarding IBD: 163 (73.4%) had Crohn's disease (CD) and 59 (26.6%) had ulcerative colitis