and hip fracture between those calculated with BMD and those without BMD measurements (P>0.05) respectively among female patients (n=32).
Conclusions: A substantial gap exists between FRAX with BMD and without BMD in Korean patients with AS.
Disclosure of Interest: None declared
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AB0856 T-SCORE OF THE SPINE AS PREDICTOR OF THE FEMORAL NECK FRACTURE

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Background: Osteoporosis is defined as a progressive, systemic skeletal disorder characterized by low bone mass and micro-architectural deterioration of bone tissue with a consequent increase in bone fragility and susceptibility to fracture. There are numerous hip fracture risks. Bone mineral density (BMD) and T-score measured by dual-energy X-ray absorptiometry (DXA) are the main determinants of the clinical evaluation of hip fracture risk. World Health Organization classification defined osteoporosis as T-score below –2.5 SD.
Objectives: The aim of this study was to estimate differences in DXA measurements (BMD and T-score of the spine) and potential predictors of the femoral neck fracture in the patients with osteoporosis.
Methods: This study included 181 patients with osteoporosis (165 female and 16 male), average age of the 65, 6±8.5 years (range of 44.1 to 87.3 years). Eighty one patients had fracture of the femoral neck. All patients in this group were managed operatively by hip arthroplasty, after clinical and radiological diagnostic procedures. DXA measurement was performed on Advanced Prodigy Lunar device for these patients postoperatively. BMD of the femoral neck was measured on the no operated side. Age, sex, height, weight, BMI, BMD and T-score of the spine at the level of L1-L4, BMD of the right and left femoral neck were estimated. The control group included 100 patients with osteoporosis (93 female and 7 male), average age of the 65.1±8, 5 years. Student's t-test and Logistic regression were used for statistical analysis. Dependent variable was presence of the fracture of the femoral neck and independent variables were age, sex, height, weight, BMI, BMD and T-score of the spine and BMD of the femoral neck.
Results: Results of our study showed statistically significant difference between T-score of the spine (t=-2,973, p<0.01) as well as between BMD of the spine (t=-12,376, p<0.001) of patients with and without fracture of the femoral neck. T-score of the spine was significant predictor of fracture of the femoral neck (p<0, 01) when controlled by age, sex, height, weight, BMI, BMD of the spine, BMD of the femoral neck.
Conclusions: T-score and BMD of the spine were statistically significantly lower in patients with fracture of the femoral neck than in patients with osteoporosis without fracture. T-score of the lumbar spine was significant predictor of fracture of the femoral neck in patients with osteoporosis. Probability of femur neck fractures increased with the decrease of T-score of lumbar spine in patients with osteoporosis. These results can help in predicting femur neck fractures.
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AB0857 PROBLEMS OF DIAGNOSTICS AND PROPHYLAXIS OF GLUCOCORTICOID-INDUCED OSTEOPOROSIS IN REAL CLINICAL PRACTICE

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Background: Oral glucocorticoids (GC) are used in different medicine fields and appear as risk factors of glucocorticoid-induced osteoporosis (GIO).
Objectives: The aim is to estimate the frequency of use of prophylaxis of OP, use drugs that are approved for GIO and also an awareness of GIO of patients with prolonged intake of GC.
Methods: 50 patients (10 men and 40 women), taking GC, took part in research. 30 patients (60%) were from rheumatology department, 5 patients (10%) from pulmonology department, 5 patients (10%) from gastroenterology department, 10 patients (20%) from nephrology department of Republic Clinical Hospital. Mean age of patients - 48,84±14,03 years (from 26 to 73). The following signs were estimated: clinical data, osteoporosis risk factors, instrumental tests (X-ray, densitometry). FRAX assessment of fracture risk was performed, the questionnaires of patients' awareness of GIO was completed.
Results: The duration of intake GC – 5,93±4,86 years. Minimal dose of GC per day (if receiving prednisone) – 7.5 mg; maximal dose – 60 mg. 10-year risk of major osteoporotic fractures by FRAX, adjusted according to GC dose - 18,11±11,01. 32 patients (64%) were given recommendations for changing lifestyle and diet for GIO prophylaxis, 40 patients (80%) - recommendations for intake of calcium and vitamin D medications, but only 31 patients (62%) followed recommendations and started the intake of calcium medications. From the said number of patients only 14 patients (45,2%) used appropriate daily dose of calcium and vitamin D.
Drugs that are approved for GIO were have to be prescribed for 18 patients, but only 6 patients (33,3%) underwent treatment, principally bisphosphonates. Only half of them underwent densitometry after starting the therapy. 72,2% patients with GIO used calcium and 30,7% were taking appropriate daily dose of calcium and vitamin D. 70% rheumatologic patients knew about GIO and in 90% cases calcium and vitamin D drugs were recommended. Only 50% of patients from non-rheumatologic departments knew about GIO and in 65% cases calcium and vitamin D drugs were recommended.
Conclusions: Clinical recommendations in real clinical practice are rarely fulfilled. Less than 60% patients were taking calcium and vitamin D, which are recommended for all patients, who started the GC therapy; only 33% of patients received osteoporosis therapy, only half of them underwent densitometry. Patients are insufficiently informed about necessity of changing lifestyle and diet for GIO prophylaxis. Education for patients taking GC and training for rheumatologic and non-rheumatologic specialties are necessary.
Disclosure of Interest: None declared
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AB0858 ASSOCIATION OF BONE MINERAL DENSITY WITH DEVELOPMENT OF HEART FAILURE IN DIABETIC PATIENTS

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Background: Diabetes mellitus has shown to be a significant risk factor for the development and prognosis of heart failure (HF) and associated with an increased risk of fractures [1]. Osteoporosis and heart failure are generally considered two distinct diseases, but recent evidence suggests a link between both diseases.
Objectives: The aim of the study was to investigate the association of bone mineral density with the risk of developing heart failure in diabetic patients.
Methods: 85 patients both sexes with type 2 diabetes aged 58.69±9.07 years were studied. Besides standard laboratory parameters, the echocardiographic and BMD measurements were performed. Estimated glomerular filtration rate was measured.
Results: Among diabetic subjects, 8 patients (9.4%) had osteoporosis, 21 (24.8%) had osteopenia and 56 (65.8%) had a normal BMD. Increased serum NT-proBNP (p<0.001) and decreased left ventricular ejection fraction (EF) (p=0.03) were significantly correlated with low T-score L1-L4 cutoff points between groups (normal, osteopenia, and osteoporosis). Multivariate stepwise linear regression analysis of the significant variables revealed that NT-proBNP, EF were independent predictors of lumbar BMD among female patients with diabetes mellitus. After adjusting for age, gender, and related comorbidities, the osteoporosis group was associated with a significantly higher risk of coronary artery disease in women with diabetes. However, no association between BMD and HF was found in men.
Conclusions: Osteoporosis may be an independent factor for HF in women with diabetes mellitus. Our data suggested that early detection of abnormal BMD should warrant for early search of undetected HF in diabetic women. A further study is needed to elucidate the effects of BMD on cardiac function in diabetic patients.
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AB0859 CAN ZOLENDRONIC ACID USE LEAD TO IMPAIR RENAL FUNCTION IN OSTEOPOROSIS PATIENTS?

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Background: Bisphosphonates are recommended in patients with osteoporosis patients. clinical concerns had been considered in kidney safety.
Objectives: This study investigated the safety of bisphosphonate effects on renal function in patients with magnetic resonance imaging (MRI)-proven acute osteoporotic vertebral fractures after vertebroplasty.
Methods: This retrospective study was conducted in osteoporotic patients with acute vertebral fractures treated with vertebroplasty between January 2001 and December 2015. Their gender, age, body mass index (BMI, kg/m^2), co-morbidities were recorded, as well as their use of zolendronic acid. Those with increase in creatinine was defined as progress of renal function. Logistical regression was used to adjust the variables.
Results: There were 989 patients (783 females; mean age, 74.08±9.26 years).

71patients accepted zolendronic acid, the others accept other anti-osteoporotic agents. 35 (49.3%) of zolendronic acid had increased creatinine, while 379 (41.3%) of non-zolendronic acid had creatinine changes (p=0.117). After adjust variables, zolendronic acid did not increase creatinine (*p*=0.291; OR: 0.750; 95% CI: 0.440–1.279).(Table 1)

Table 1. Risk of increase in renal function in zolendronic acid after adjust variables

	Regression coefficient	S.E.	Wald	P value	OR	95% C.I.for OR	
						Lower	Upper
Zoledronic acid	-0.288	0.273	1.116	0.291	0.750	0.440	1.279
Smoking	0.250	0.343	0.533	0.465	1.284	0.656	2.513
Alcohol	0.025	0.065	0.147	0.702	1.025	0.903	1.164
BMI	0.007	0.017	0.160	0.689	1.007	0.974	1.040
DM	-0.165	0.164	1.022	0.312	0.848	0.615	1.168
HTN	-0.418	0.149	7.856	0.005	0.658	0.491	0.882

Conclusions: Zolendronic acid use did not lead to increase in creatinine as compared with the control group. However it need more cases to confirm this findings.

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Disclosure of Interest: None declared

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AB0860 THE PREDICTORS FOR 24 MONTHS EFFICACY OF DENOSUMAB, AN ANTI-RANKL ANTIBODY, ON OSTEOPOROSIS IN PATIENTS WITH RHEUMATOID ARTHRITIS FROM MULTICENTER STUDY (TBCR-BONE)

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Background: Although medication of rheumatoid arthritis (RA) has been improved by early intensive treatment using csDMARDs, tsDMARDs and bDMARDs for decades, treatment of concomitant disease in RA patients, such as osteoporosis (OP), will be more important to improve activity of daily living of RA patients. Although denosumab (DMB), an anti-RANKL antibody, was approved for treatment of OP in Japan in 2013, clinical data in real world is lacking in patients with RA. We reported 12 months efficacy of denosumab on osteoporosis in patients with RA at EULAR 2016 in London [1]. Here we report results for 24 months.

Objectives: To investigate the 24 months efficacy of denosumab (DMB) on osteoporosis in patients with rheumatoid arthritis (RA-OP) and to explore predictors of efficacy from multicenter study (TBCR-BONE).

Methods: 59 female cases with RA-OP treated with DMB for 24 months were included in this study. Bone mineral density (BMD) of lumbar spine (LS-BMD) and total hip (TH-BMD) and serum bone turnover markers (P1NP and TRACP-5b) were measured at baseline and every 6 month until 24 months. Spearman's rank correlation coefficient was calculated between %increase of BMD at 24 months and various data (baseline patients' characteristics, parameters of RA disease activity [DAS28-CRP, SDAI, CRP, MMP-3] and bone turnover markers (BTMs) [P1NP and TRACP-5b]). Time averaged data (ta-data) which was averaged data of every 6 month was utilized for analysis with respect to data of RA disease activity and BTMs besides baseline data.

Results: Mean age was 59 years old. Mean RA duration was 16 years. Rates of concomitant prednisolone use was 33.9%. Mean DAS28-CRP was 2.7. 44% of cases had the past history of fracture. Mean FRAX was 28%. Daly teriparatide was used in 11 cases before DMB treatment. %increase of LSBMD at every 6 month was significantly increased (4.7%>6.7%>7.7%>8.3%) and %increase of THBMD at every 6 month was significantly increased (2.9%>3.3%>4.9%>4.9%) (Fig1). %decrease of P1NP and TRACP-5b was 37.4%>33.8%>25.5%>26.0% and 33.3%>29.8%>26.1%>23.1%, respectively (Fig2). Fig3 showed that parameters (correlation coefficient) which were correlated with %increase of LSBMD at 24 months were %increase of LSBMD at 6 months (0.61), baseline P1NP (0.33) and time averaged %decrease of TRACP-5b (0.30). Parameters (correlation coefficient) which were correlated with %increase of THBMD at 24 months were %increase of LSBMD at 6 months (0.42), %increase of THBMD at 6 months (0.69), baseline P1NP (0.36), time averaged %decrease of P1NP (0.37), baseline TRACP-5b (0.29) and time averaged %decrease of TRACP-5b (0.29). Although %increase of BMD at 24 months was not correlated with disease activity of RA, taCRP was significantly correlated with taP1NP (0.57) and taTRACP-5b (0.45).

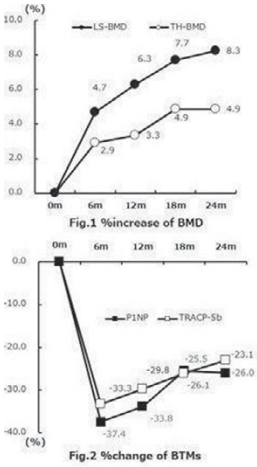

Fig.1 %increase of BMD

Fig.2 %change of BTMs

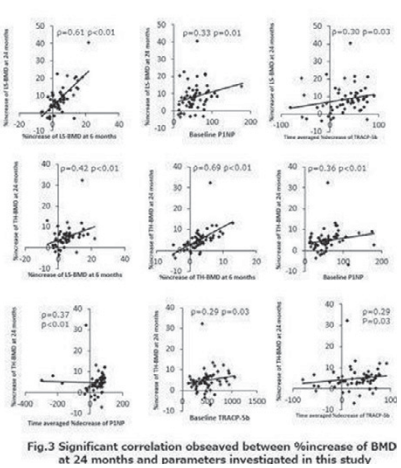
Fig.3 Significant correlation obseaved between %increase of BMD at 24 months and parameters investigated in this study

Conclusions: DMB was effective in RA-OP. Early response of BMD, baseline values of BTMs and response of BTMs were suggested to be the predictors of the efficacy of DMB in RA-OP. Inflamation of RA was correlated with not BMD but BTMs.

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Crystal diseases, metabolic bone diseases and bone diseases other than osteoporosis

AB0861 EXPRESSION CONTROL BY METHYLATION OF THE TLR1, TLR2, TLR4, IL1B, ALPK1 SLC2A9 AND SLC22A12 GENES IN MONOCYTES OF PATIENTS WITH GOUT

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Background: The gout is an inflammatory multifactorial disorder where the diet, age, sex, absorption regulation of uric acid in kidney and genetic, contribute to the onset of the disease. The balance of uric acid concentration not only depends on metabolism of purines but also on the clearance of uric acid, in which many proteins participate in the reabsorption and transport of urate. Is unknown if the peripheral blood leukocyte cells can change their expression and regulation mechanism of the urate transporters by the presence of uric acid in gout patients [1–4].

Objectives: Analyze changes in gene expression and the methylation pattern of the TLR2, TLR4, SLC2A9, SLC22A12, SLC22A3 and ABCG2 in neutrophils and peripheral blood monocytes from patients with gout and controls

Methods: The isolation of peripheral blood neutrophils and monocytes cells was performed by negative immunomagnetic selection (MACxpress kit, EUA). By flow citometry were analyzed the previously separate cell populations, mononuclear (MN), polymorphonuclear (PMN) cells and neutrophils (N) (CD15, CD16, CD14). The DNA and RNA extraction was realized with a without columns kit and with Trizol technique. The gene expression analysis will be performed from total RNA by RT-PCR kit (Promega). Methylation analysis will be carried out the bisulfite conversion (ABCAM) from total DNA and HRM-PCR. For both studies, gene expression and methylation analysis are designed specific primers

Results: The biggest difference between asymptomatic gout patients (n=12) and controls (n=12), in the biochemical parameters (Table 1), is in the higher levels of uric acid and triglycerides that the patient presents. Actually, we've already evaluated the genetic expression of TLR1, TLR2, TLR4 and IL1b in mononuclear cells of 5 asymptomatic gout patients and 5 controls (Plot 1). Interestingly, IL1b is UP-regulated in sample group bye a mean factor of 16.350 and TLR2 is UP-regulated in sample group in comparison to control group by a mean factor of 3.686.

Table 1. Characteristics of patients and controls

	Patients	Controls
Participants (n)	12	12
Age (years)	40.75	29.75
BMI (kg/m^2)	29.27	24.05
SM n (%)	8.33	0
Hypertension, n (%)	58.33	0
Urate (mg/dL)	8.35	4.87
Glucose (mg/dL)	84.83	81.33
Cholesterol (mg/dL)	196.33	175.25
Tryglicerides (mg/dL)	276.67	109.42
Creatinine (mg/dL)	1.02	0.79

Conclusions: The asymptomatic patients with a higher mean of uric acid (8mg/dL) and tryglicerides (145.60 mg/dL) had a higher expression of IL1b and TLR2 compared to controls.