and 105 men, who were suspected of having osteoporosis and who underwent VFA in the supine position and radiography of the spine were evaluated. VFA was analyzed by using a six-marker point method to describe the shape and deformity of each vertebra. Visual radiography of the lateral spine was performed by an experienced radiologist. The agreement between VFA and visual radiography, was assessed by using weighted statistics.

Results: Visual radiography helped identify 51 (24.6%) patients with at least one vertebral fracture versus 49 (23.67%) with VFA. Most fractures were present in T7, T12, and L1. Excellent agreement was found between VFA and visual radiography, with 97.3% concordance and 0.89. Sensitivity, specificity, and positive and negative predictive values calculated by lesion level for VFA compared with visual assessment were 90.2%, 98.08%, 93.88%, and 96.84%, respectively.

Conclusion: VFA performed with patients with type 2 diabetes, in the supine position, is an accurate method to help detect vertebral fractures when compared with conventional spine radiography. VFA permits combination of fracture assessment with bone mineral density measurement in a single session

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AB1148

THE RELATION ANALYSIS OF BONE MICROARCHITECTURE EVALUATED BY HR-pQCT, AND SYNOVITIS, BONE DESTRUCTION, SYSTEMIC OSTEOPOROSIS IN RHEUMATOID ARTHRITIS

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Background: Periarticular osteoporosis is one of hallmark of rheumatoid arthritis (RA). However, until now the periarticular bone structure including bone mineral density have not been fully elucidated. High-resolution peripheral quantitative computed tomography (HR-pQCT) is a new technique with high spatial resolution that enables us to assess microarchitecture of cancellous and cortical bones that cannot be assessed by conventional X-ray examinations. Recently, few studies using HR-pQCT revealed that bone microarchitecture such as trabecular volumetric densities (Tb.vBMD) were different between RA and non-RA¹, but these study had not compared findings of HR-pQCT with synovitis assessed by ultrasonography (US) or systemic osteoporosis.

Objectives: To investigate bone microarchitecture evaluated by HR-pQCT in RA.

Methods: This study included 21 RA patient. HR-pQCT imaging analyses quantified bone microarchitecture in 2,3 Metacarpal Head. We measured the bone mineral density (BMD) of lumbar spine and femoral neck using Dual-Energy X-ray Absorptiometry (DXA). Synovitis and bone destruction were assessed by US and X-ray, respectively.

Results: Disease duration, age and disease activity were not correlated with bone microarchitecture. BMD of femoral neck was correlated with Tb.vBMD ($r=0.84, p<0.01$). The joints with US-proven active synovitis [power doppler score (PD) ≥ 2] showed less Tb.vBMD, trabecular number (Tb.N) and trabecular thickness (Tb.Th) as compared with the patients with US-PD<2 synovitis (Tb.vBMD: 121.5 mg/cm³ vs 145.3 mg/cm³, Figure 1). These tendencies were also shown in deferent Metacarpal Heads in the same patient (the mean difference of Tb.vBMD, PD ≥ 2 – PD<2: -11.9

mg/cm³). Moreover, the joints with progressive joint destruction as classified by more than steinbrocker stage 3 showed less Tb.vBMD (122.1 mg/cm³ vs 150.0 mg/cm³). The longitudinal analysis of 10 patients revealed that Tb.vBMD and Tb.N were improved along with improvement of disease activity (DAS -2.80: from baseline to 12 months after new treatment initiated, but Tb.Th was not improved).

Conclusion: This study revealed that bone destruction and synovitis were associated with bone microarchitecture and, the difference of treatment response by parameter of bone microarchitecture. However, this study was mainly transverse analysis and small samples, we need longitudinal analysis using larger samples.

Abstract AB1148 Figure 1

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CHARACTERIZATION OF SALIVARY PROTEINS IDENTIFIED AS POTENTIAL BIOMARKERS FOR SYSTEMIC LUPUS ERYTHEMATOSUS THROUGH PROTEOMIC ANALYSIS

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Background: Systemic lupus erythematosus (SLE) is a heterogeneous autoimmune disease characterized by pathogenic autoantibodies and uncontrolled inflammatory response. There are few reliable biomarkers available for diagnosis and monitoring the disease.

Objectives: We tried to find and characterize specific protein components in saliva of patients with SLE for their use as biomarkers in future.

Methods: Salivary proteins were prepared from 11 samples from patients with SLE and healthy controls (HC), and were subjected to 2-dimensional gel electrophoresis (2-DE). The spots with greater than 2 fold change in intensity were identified by matrix-assisted laser desorption/ionization time-of-flight mass spectrometer (MS) analysis. The relative and absolute amounts of the several candidate proteins in saliva of patients with SLE and rheumatoid arthritis (RA), and HC were analyzed using western blotting, and enzyme-linked immunosorbent assay.

Results: Proteomic analysis using 2-DE and MS identified 20 differentially expressed protein spots in the saliva of SLE patients compared in that of HC. Among them, proteins with more than two-fold differences in expression were found as immunoglobulin gamma-3 chain C (IGHG3), immunoglobulin alpha-1 chain C region, protein S100, lactotransferrin, leukemia-associated protein 7, and 8-oxoguanine DNA glycosylase (OGG1). salivary IGHG3 levels were increased in SLE (3.9 ± 2.2 pg/mL) compared to those in RA (1.8 ± 1.0 pg/mL, $p < 0.001$) or HC (2.1 ± 1.6 pg/mL, $p < 0.001$), and salivary lactotransferrin levels were increased in SLE (5.0 ± 1.7 pg/mL) compared to those in RA (3.1 ± 1.6 pg/mL, $p < 0.001$) or HC (2.3 ± 1.7 pg/mL, $p < 0.001$). The patients with nephritis had higher salivary IGHG3 (4.7 ± 1.9 pg/mL) than those not (3.6 ± 2.2