planes of MCP II-III and PIP II-III joints). Findings were graded semi-quantitatively from 0 to 3 both in grey scale (effusion) and power Doppler (perfusion). The results of the joint assessment were aggregated in a composite index for grey scale and power Doppler (range 0–54 points). All ultrasound images were graded by two independent raters who were blinded to image acquisition.

Results: Volleyball training showed statistically significant effects in the composite index for grey scale and power Doppler scores ($p=0.004$). 16 of 18 players showed a change in their composite index with a median change of 1 and a maximum change of 3 points. Subanalysis revealed that changes were related to grey scale exclusively, with no statistical difference in power Doppler scores.

Abstract AB1180 – Figure 1

Conclusions: The results of our study suggest that mechanical stress on the hands leads to changes in grey scale ultrasound in healthy subjects in at least one joint. However, the composite index for changes in grey scale and power Doppler changed 3 points at the most in one subject over various joints. To add, no changes in power Doppler score were observed. While changes in grey scale ultrasound appear to be minor, power Doppler ultrasound appears to be a more robust method and less prone to environmental factors. Power Doppler appears to be able to discriminate between physiological changes due to mechanical stress and acute arthritis and thus, is highly specific.

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AB1181

ANTI-RO60 SEROPOSITIVITY DETERMINES EPITOPE SPECIFICITY OF ANTI-RO52 ANTIBODIES IN PATIENTS WITH AUTOIMMUNE RHEUMATIC AND MALIGNANT DISEASES

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Background: Epitope mapping of anti-Ro52 antibodies (abs) has been extensively studied in patients with Sjögren's syndrome (SjS) and systemic lupus erythematosus (SLE). Comprehensive epitope mapping in systemic sclerosis (SSc) or malignant diseases (MD), also associated with anti-Ro52 abs, has not been performed.

Objectives: To fully characterise Ro52 epitopes in anti-Ro52 ab-positive SSc and MDs.

Methods: Testing was performed in sera from 95 anti-Ro52 positive patients with various autoimmune diseases (32 SSc, 20 SjS, 28 SLE) and 15 with malignant diseases (MD). Five recombinant Ro52 fragments [Ro52-1 (aa 1–127), Ro52-2 (aa 125–268), Ro52-3 (aa 268–475), Ro52-4 (aa 57–180, partly overlapping Ro52-1 and Ro52-2), and Ro52-5 (aa 181–320, partly overlapping Ro52-2 and Ro52-3)] were tested by line-immunoassay. Anti-Ro60 was tested by ELISA.

Results: Overall, reactivity to Ro52-1, Ro52-2, Ro52-3, Ro52-4 and Ro52-5 were present in 35.8%, 100%, 0%, 32.6%, 50.5%, respectively. Patients with SLE more frequently recognised Ro52-1, Ro52-4 and Ro52-5 than patients with SSc and malignant diseases. When epitope mapping was analysed in accordance to Ro60 reactivity, patients were subdivided in 50 Ro52pos/Ro60pos (13 patients with SSc, 14 with SjS, 18 with SLE and 5 patients with MD) and 45 Ro52pos/Ro60neg patients (19 with SSc, 6 with SjS, 10 with SLE and 10 patients with MD) and the following findings were noted: Abs to Ro52-1 were present in 26/50 (52%) Ro52pos/Ro60pos compared to 8/45 (18%) Ro52pos/Ro60neg patients ($p<0.001$); antibodies to Ro52-2 were present in all patients; antibodies to Ro52-3 was totally absent; antibodies to Ro52-4 were present in 23/50 (46%) Ro52pos/Ro60pos compared to 8/45 (18%) Ro52pos/Ro60neg patients ($p=0.003$); antibodies to Ro52-5 were present in 33/50 (66%) Ro52pos/Ro60pos compared to 15/45 (33.3%) Ro52pos/Ro60neg patients ($p=0.001$). Ro52 epitope recognition did not differ between Ro52pos/Ro60pos and Ro52pos/Ro60neg in patients with SLE, SjS and patients with MD. In SSc anti-Ro52-1 reactivity was present in 8/13

(62%) Ro52pos/Ro60pos compared to 0/19 (0%) Ro52pos/Ro60neg patients ($p<0.001$); In SSc, anti-Ro52-5 reactivity was present in 9/13 (69.2%) Ro52pos/Ro60pos and 5/19 (26.3%) Ro52pos/Ro60neg patients ($p=0.029$). Ro52 epitope recognition in Ro52pos/Ro60pos patients did not differ amongst diseases.

Conclusions: Ro52-1 (aa 1–127) and Ro52-4, partially overlapping with Ro52-1, (aa 57–180) are dominant epitopes in Ro52pos/Ro60pos patients but not in Ro52pos/Ro60neg patients with autoimmune rheumatic diseases, suggesting that amino acids 57–127 may contain an epitope specifically recognised by the Ro52pos/Ro60pos group. Whether Ro60 is responsible for the unmasking of Ro52 (aa57–127) neoepitope remains to be investigated.

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AB1182

THE STABILITY OF RHEUMATOID FACTOR AND ANTI-CCP ANTIBODY IN ARCHIVED SAMPLES OF BLOOD

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Background: Recently, there has been an increasing demand for analysing a large amount of specimen at the same time and for stably storing those specimens for clinical research. Therefore, the role of the biobank that collects and preserves the samples for research and supplies them stably is very important.¹ Anti-CCP antibody and RF predated the onset of RA by several years, which indicates that citrullination and the production of anti-CCP and RF autoantibodies are early processes in RA.² In addition, RA patients with anti-CCP antibody had more swollen joints and more severe radiological destruction.³

Objectives: The purpose of this study is to evaluate the stability of RF and anti-CCP antibody after preserving the remaining samples for a long time and to determine the usefulness of the remaining samples that were kept for future research.

Methods: Serum samples used in this study were collected from 50 patients with RA in Eulji university hospital in 2011. The patients had baseline measurement at the time the samples were obtained and had more than one serum aliquots stored for archived samples. At baseline measurement, rheumatoid factor was quantified with turbid immunometry and anti-CCP was measured by an ELISA analyzer. All specimens were kept in a freezer where temperature monitoring was carried out for 24 hours to keep the temperature below -70°C . 6 years later, the samples were slowly thawed at 4°C and measured by the same method of the baseline measurement.

Results: The mean age for 50 patients from which the samples were collected is 51.22 years. It was an average of 6.0 years (range: 5.6–6.1 years) for the samples to be stored at the biobank. We observed a slight decrease in concentration of RF and anti-CCP. There were significantly difference in concentration of RF and anti-CCP ($Z=-5.10$, $p\text{-value}<0.001$; $Z=-3.81$, $p\text{-value}<0.001$). The correlation between baseline sample and archived sample is strong (RF: $\rho=0.973$, $p\text{-value}<0.001$; anti-CCP: $\rho=0.938$, $p\text{-value}<0.001$).

Conclusions: This study assessed the stability of RF and anti-CCP antibody in archived samples of blood. Our results showed that serum concentration of RF and anti CCP antibody remain stable for up to 5 years at -70°C . There was a slight decreased in the level overtime that was correlated with baseline value. These data indicated that the archived human samples in human cohorts could be used to examine for research and could be estimated according to the regression analysis.

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