Methods: A total of 49 SLE pts (46 women, 3 men, 40 [33;48] years old) without established DM and with normal fasting glucose levels (<6.1 mmol/l) were enrolled in the study. Median disease duration was 3,0[0,7;8,0] years, SLEDAI-2K was 5[2;8]. SLE pts were treated with glucocorticoids (GC) (84%), hydroxychloroquine (78%), immunosuppressive drugs (20%) and biological agents (10%). Insulin levels were measured using electrochemiluminescence assay Elecsys (Roche Diagnostics), serum leptin concentrations were estimated using ELISA (DBS-Diagnostics Biochem Canada Inc.). IR was defined as Homeostasis Model Assessment of Insulin Resistance index (HOMA-IR) ≥ 2.77 . Leptin levels were considered elevated at values ≥ 11.1 ng/ml for women, ≥ 5.6 ng/ml for men. Eight traditional T2DM risk factors from the FINDRISK (Finnish Type 2 Diabetes Risk Assessment Form) questionnaire (older age, being overweight, abdominal obesity, family history of diabetes, sedentary life-style, lack of regular dietary fiber intake, taking antihypertensive medications as a surrogate marker of high blood pressure, documented episodes of hyperglycemia) were evaluated. This study used 5 risk categories for developing T2DM proposed by FINDRISK questionnaire: low, slightly elevated, moderate, high or very high.

Results: Median HOMA-IR levels were 1,7 [1,2;2,5]. HOMA-IR correlated with leptin levels ($r=0.7$, $p<0.001$), body mass index (BMI) ($r=0.6$, $p<0.001$), waist circumference (WC) ($r=0.5$, $p<0.001$), T2DM risk categories by FINDRISK ($r=0.3$, $p=0.03$), SLEDAI-2K ($r=-0.4$, $p<0.01$), and duration of GCs therapy ($r=0.3$, $p=0.03$). Current GC use had no influence on HOMA-IR in SLE. IR was detected in 10 (20%) SLE pts. The traditional T2DM risk factors profiles were similar in pts with (Group 1) or without IR (Group 2) except for higher anthropometric parameters in group 1 (for BMI 27,2[24,8;32,2]kg/m² vs 23,7[20,6;26,7]kg/m², $p<0.01$; for WC: 93[86;102]cm vs 83[76;93]cm, $p=0.02$). Leptin levels were also higher in SLE pts with IR compared to pts without IR (74,2[30,4;112,7]ng/ml vs 25,0[6,7;42,4]ng/ml, $p<0.01$). Increased leptin levels were found in 35 (71%) pts, more often in pts with IR (100 vs 64%, $p=0.04$).

Conclusion: IR was found in 20% of SLE pts without T2DM having normal serum fasting glucose concentration. Emergence of IR was commonly preceded by increased leptin levels. IR values were closely associated with accumulation of adipose tissue facilitated by long-term GCs use and disease activity decrease. Contribution of other traditional risk factors of T2DM seemed insignificant.

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POS0728

QRISK3 RELATION TO CAROTID PLAQUE IS HIGHER THAN THAT OF SCORE IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Systemic lupus erythematosus (SLE) has been described as an independent risk factor for the development of cardiovascular (CV) disease. Recently, QRESEARCH risk estimator version 3 (QRISK3) calculator has been released for the assessment of CV risk in general population. QRISK3 now includes the presence of SLE as one of its variables for the calculation of CV risk.

Objectives: We aim to compare, in patients with SLE, the predictive capacity between QRISK3 and Systematic COronary Risk Evaluation (SCORE) for the presence of carotid subclinical atherosclerosis.

Methods: 296 patients with SLE were recruited. The presence of carotid plaque and carotid intima media thickness (cIMT) were assessed through ultrasound. QRISK3 and SCORE were calculated. The relation of QRISK3 and SCORE between themselves and to the presence of carotid subclinical atherosclerosis (both carotid plaque and cIMT) was studied.

Results: Most of the patients were female (95%) and average age was 51 $\pm$ 12 years. Traditional cardiovascular risk factors were prevalent, as shown in table 1. Most SLE patients were in the no activity (41%) or mild activity (29%) categories as shown by the SLEDAI scores. SLICC and Katz indexes were, respectively, 1 (IQR 0-2) and 2 (IQR 1-4). Seventy-one percent of the patients had a SLICC/ACR DI score equal to or higher than 1, and 39% had a Katz index equal to or higher than 3. Almost half of the patients (47%) were taking prednisone (the median dose of those 139 patients on prednisone was 5 [IQR 2.5-5] mg/day at the time of the study). DMARDs use was reported in 77% of the patients and 69% were taking hydroxychloroquine at the time the study was performed. SCORE and QRISK3 did not correlate between them in patients with SLE. In this sense, QRISK3, both calculated including the SLE item (Rho Spearman $r=-0.008$, $p=0.90$) or not (Rho Spearman $r=-0.009$, $p=0.96$), did not correlate with SCORE. This lack of correlation was also found when the corresponding categorizations of both scores were used. For example, patients with a QRISK3

= 10 did not show a higher SCORE when compared to patients with a QRISK3 <10 (1.26 vs. 1.30, $p=0.90$). Similarly, QRISK3 was not different between the low, moderate, high and very-high SCORE CV risk categories.

Relation of QRISK3 and SCORE to cIMT and to the presence of carotid plaque is shown in Figure 1. QRISK3 was statistically significantly correlated with cIMT (Rho Spearman $r=-0.420$, $p=0.000$). However, this relation was not found between SCORE and cIMT (Rho Spearman $r=-0.005$, $p=0.93$). Moreover, QRISK3 showed a statistically significant discrimination for the presence of carotid plaque (AUC 0.765 (95%CI 0.711-0.820)). This relation was found to be significant both when QRISK3 was calculated with the SLE variable item or not. However, in patients with SLE, SCORE did not show a significant discrimination for the presence of carotid plaque (0.561 (95%CI 0.494-0.629)). Additionally, a statistical significant difference was observed between the AUC of QRISK3 and SCORE ($p=0.000$).

Table 1. Characteristics of SLE patients

SLE patients	
(n=296)	
Age, years	51 $\pm$ 12
Female, n (%)	280 (95)
Body mass index, kg/m ²	27 $\pm$ 6
Systolic blood pressure, mmHg	127 $\pm$ 19
Cardiovascular co-morbidity	
Smoking, n (%)	74 (25)
Diabetes, n (%)	14 (5)
Hypertension, n (%)	119 (40)
Dyslipidemia, n (%)	115 (39)
Analytical and lipid profile	
CRP, mg/dl	1.9 (0.9-4.9)
Cholesterol, mg/dl	198 $\pm$ 38
LDL cholesterol, mg/dl	110 $\pm$ 29
SLE related data	
Disease duration, years	17 (10-25)
SLICC	1 (0-2)
SLEDAI	2 (0-4)
Current prednisone, n (%)	139 (47)
Hydroxychloroquine, n (%)	205 (69)
Subclinical atherosclerosis	
Carotid IMT, microns	630 $\pm$ 122
Carotid plaques, n (%)	108 (36)

Figure 1. Relation of QRISK3 and SCORE to cIMT and carotid plaque.

Conclusion: QRISK3 discrimination for carotid plaque is higher than that of the SCORE. QRISK3, and not SCORE, should be used for the calculation of CV risk in patients with SLE.

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POS0729

INFLUENCE OF VARIOUS FACTORS ON THE IMMUNOGENICITY OF 23-VALENT POLYSACCHARIDE PNEUMOCOCCAL VACCINE IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Immunosuppressive therapy increases the risk of pneumococcal infection in patients with systemic lupus erythematosus (SLE). The therapy, as well as some features of the course of the disease, can lead to a decrease in the immunogenicity of the pneumococcal vaccine in these patients.

Objectives: The aim of the study was to identify "risk factors" that negatively affect the immunogenicity of the 23-valent polysaccharide pneumococcal vaccine (PPV-23) in patients with SLE.

Methods: The study included 60 patients aged 19 - 68 years with a reliable diagnosis of SLE, disease duration from 9 months. up to 42 years old. Nine patients had high disease activity, 12 had medium, 33 had low, and 6 had remission. Therapy: 58 patients received glucocorticoids (GC) 5-40 mg / day, 46-hydroxychloroquine, 33- cytostatics (CS), 23- biologics: 12-rituximab (RTM), 10-belimumab (BLM), 1- RTM and BLM. 1 dose (0.5ml) of PPV-23 was administered subcutaneously. During the year, standard clinical and laboratory studies were carried out, the level of antibodies to polysaccharides of the *S. pneumoniae* cell wall in the blood serum was determined.

Results: After 1-2 months. after vaccination, 78.7% of patients showed a more than twofold increase in protective antibodies, a year later - in 56.7% of patients ("responders"). The severity of the vaccine response did not depend on age: in the subgroup of patients under 50 years of age ($n = 46$), the proportion of "responders" remained 52.2%, and in patients over 50 years of age ($n = 14$) -50%. With different duration of the disease, the vaccine response did not differ significantly: with a disease period of up to 5 years, the vaccine response was observed in 47.6%, from 5 to 10 years - in 66.7%, over 10 years - in 55.6% of patients. Patients in remission had the lowest vaccine response (33.3%), while with high SLE activity, 100% response to the vaccine was recorded ($p = 0.02$), which is probably due to the fact that remission requires long-term and active immunosuppressive therapy, and patients with high activity such therapy has just been initiated or is to be. With an average and low degree of activity, the number of "respondents" was the same (50% and 51.5%, respectively). In patients receiving biologics therapy, a full-fledged vaccine response was observed less frequently than in patients without biologics (39% and 68%, respectively, $p = 0.03$), while no differences were found against the background of RTM and BLM therapy (41.6% and 40% of "respondents", respectively). The effect of the duration of biologics therapy on the severity of the vaccine response was analyzed. There was a tendency for the predominance of "responders" in the group with a duration of therapy before vaccination up to 1 year, as well as in the group of initiation of biologics after vaccination, however, the differences were not statistically significant.

Conclusion: RTM and BLM have a negative effect on the immunogenicity of the PPV-23 vaccine. However, if the timing of administration is observed (initiation of biologics therapy after vaccination or vaccination against the background of biologics therapy lasting less than a year), the number of "responders" increases. Further recruitment of patients is needed to clarify and confirm the results obtained.

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POS0730

DECREASED RISK OF OSTEONECROSIS OVER TIME IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS USING JAPANESE HEALTH INSURANCE DATABASE

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Background: In patients with systemic lupus erythematosus (SLE), prevalence of osteonecrosis (ON) was 20–40%¹, and 4–10 times higher risk of ON than the general population was observed^{2,3}. Because ON can influence patients' physical activity and quality of life, it is essential for rheumatologists to manage ON appropriately. Recently, medications such as mycophenolate mofetil (MMF) and hydroxychloroquine (HCQ) were approved for SLE in Japan. Considering the changes in treatments for SLE over time, it is clinically important to investigate the risk and risk factors of ON in patients with the disease. However, to date, only evidence is found in the literature.

Objectives: To estimate incidence rate (IR) and identify risk factors of ON in patients with SLE using a Japanese health insurance database.

Methods: This retrospective longitudinal population-based study was conducted using claims data provided by Medical Data Vision Co., Ltd (Tokyo,

Japan). We defined individuals as SLE cases if they met all of the following: 1) having at least one ICD10 code (M321 or M329); 2) having at least one prescription of oral corticosteroids (CS), methylprednisolone (mPSL) pulse therapy, immunosuppressive drugs (IS) (azathioprine, mizoribine, tacrolimus, MMF, cyclophosphamide, methotrexate), biologics (belimumab, rituximab) or HCQ between January 2010 and January 2017; 3) being 16 years old or over. The start of observation was defined by the first month in which cases met all of the above criteria. Patients were followed until the earliest of date of first ON, date of loss of follow-up, or the end of follow-up (December 2017). ON was defined when patients had at least one ICD code (M87.0, M87.1, M87.2, M87.3, M87.8, M87.9, M90.5) during the observation period. Patients were excluded if they had a previous diagnosis of ON during the first 3 months of the observation period. We defined baseline characteristics using the data in the month of starting observation, and calculated incidence rate (IR) in each year, adjusted relative risk (RR [95% CI]) of ON using a Poisson regression model, and adjusted odds ratio (OR [95% CI]) of risk factors of ON after adjusting for age and sex at baseline, and medications and comorbidities during the observation period using a logistic regression model.

Results: In this study, 16,386 cases were included. The median age was 55 years and 81.3% were female. Median observation period was 33 months, and total observation period was 47,138 patient-years (PY). IR/1,000 PY of ON in each year from 2010 to 2017 was 13.2, 10.6, 11.0, 13.3, 13.1, 9.8, 8.5, and 7.3, respectively. Adjusted RR in each year from 2011 to 2017 compared to 2010 was 0.5 [0.2–1.4], 0.3 [0.1–0.9], 0.6 [0.3–1.4], 0.7 [0.3–1.6], 0.4 [0.2–0.8], 0.4 [0.2–0.8], and 0.3 [0.1–0.7], respectively. Adjusted OR was 1.22 [1.10–1.34] for younger age by decade, 1.41 [1.11–1.79] for male, 2.69 [1.52–4.76] for use of oral CS (> 0 and < 5 mg/day of prednisolone [PSL] equivalent dose versus no use), 2.21 [1.26–3.86] for oral CS (≥ 5 and < 10 mg/day versus no use), and 1.25 [1.02–1.54] for dyslipidemia.

Conclusion: Significant decrease in IR of ON after 2015 was observed in Japanese patients with SLE for the first time. Younger age, use of CS, and dyslipidemia were identified as significant risk factors of ON.

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