

aspect of patients' life with SLE and their relationship with the healthcare system. Transcripts were analysed through thematic content analysis.

**Results** The mean age of the participants to the study was 40.6 years ( $\pm 10.0$ ). The average years since diagnosis were 15.5 ( $SD=8.6$ ) with great variability in terms of disease manifestations. Findings showed that a fully engaged patient results from reframing emotional, cognitive, and behavioural dimensions. The advances along the process depends on how the patient succeeds in each position.

**Conclusions** PHE represents a appropriate model to understand the engagement process of SLE patients. In order to meet patients needs, healthcare providers should consider the specific position of SLE patients, providing adequate and tailored support.

#### 149 LUPUS EXERCISE AND PERSONAL MEDICATION RECORD ON MOBILE APPLICATION TO HELP IMPROVE THE QUALITY OF LIFE OF PEOPLE WITH LUPUS

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**Background and aims** Syamsi Dhuha (Morning Light) Foundation (SDF) has identified two major challenges among the lupus patients who are members of SDF:

- Those who have joint pain and muscle stiffness find it difficult to do their daily activities.
- Those who have to consult two or more doctors/physicians are having difficulties to combine and maintain their medical records in one place

The above challenges brought us to the current works as solutions to the problems

- To create "Lupus Exercise" (LE)
- To create "Lupie Diary Mobile Application" (LD App),

**Methods** SDF worked together with the Faculty of Sports Education and Health, Education University of Indonesia in developing LE. This LE is recorded and uploaded into YouTube, making it possible for lupus patients to follow the exercise.

SDF worked together with the School of Pharmacy at University of Surabaya, in developing the content for personal medication records. The App is available in Indonesia, English and Mandarin languages, and can be installed on android smartphones.

**Results** LE is a set of exercise suitable for people living with Lupus, as it:

- can ease joint pain and stiffness if done regularly
- can promote better general health conditions

LD App is a personal medication record application for smartphone users, intended to help lupus patients:

- record their personal medication history
- remind them to take medication and scheduled therapy
- save images of lab test results

**Conclusions** Both LE and LD App is expected to help people with lupus in coping with Lupus and in helping improve their quality of life.

## SLE Complications and comorbidities

#### 150 LOW PLASMA CONCENTRATIONS OF APOLIPOPROTEIN M CORRELATE TO DISEASE ACTIVITY AND ENDOTHELIAL DYSFUNCTION IN SLE

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**Background and aims** ApoM is an anti-atherogenic and vasculoprotective 25 kDa apolipoprotein suggested to play a role in keeping endothelial barrier integrity. The aims of the current study were to determine the impact of SLE disease activity on apoM levels and investigate if apoM levels reflect endothelial function in SLE.

**Methods** Plasma concentrations of apoM were measured with ELISA in two SLE cohorts, all patients fulfilling  $\geq 4$  American College of Rheumatology (ACR) classification criteria for SLE, and 100 healthy controls (HC). Patients in cohort I had active disease as evaluated with SLEDAI scores. In cohort II endothelial function was measured by EndoPAT 2000 and correlated to apoM levels. A low Reactive Hyperemia Index (RHI) value indicates endothelial dysfunction.

**Results** In cohort I, the plasma levels of apoM were found to be significantly decreased in SLE ( $p < 0.0001$ ), and the apoM concentrations correlated inversely to disease activity (SLEDAI,  $r = -0.29$ ,  $p = 0.0063$ ). ApoM was also significantly lower in patients with active nephritis, leukopenia, anti-DNA antibodies or rash compared to patients without these manifestations.

In cohort II, using linear regression analysis, there was a positive correlation between apoM levels and the RHI value, indicating endothelial dysfunction, in the younger SLE patients:  $\beta = 0.94$  CI 95% 0.22, 1.65  $r = 0.32$   $p = 0.011$ .

**Conclusions** SLE related inflammation may have an impact on lower plasma apoM, which may affect the endothelium and the process towards cardiovascular disease.

#### 151 HPV-RELATED PREMALIGNANT AND MALIGNANT LESIONS IN THE LOWER GENITAL AND ANAL TRACTS OF WOMEN WITH SLE

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**Background and Aims** Systemic Lupus Erythematosus (SLE) and its treatment predispose to infections such as human papillomavirus (HPV) that is a risk factor for the development of lower genital tract (LGT) and anal cancers.

To assess LGT- anal lesions, frequency of HPV lesions and premalignant and malignant lesions.

**Methods** Descriptive, cross-sectional design. Women with SLE (ACR 1997) of Argentina were consecutively sent to examination of the LGT and high-resolution anoscopy (2010–2015). Biopsies were performed according to gynaecological criteria and patient consent (Bethesda). Koilocytic cells were associated

Abstract 151 Table 1

	SLE (73)	CI 95%	Control (104)	CI 95%	p
HPV (%)	25 (34.25%)	23.53-46.28	6 (5.77%)	2.14-12.13	0.00
Median age $\pm$ DS SD (Range)	36.84 $\pm$ 11.04 (18-65)	NA	34.90 $\pm$ 9.89 (20-59)	NA	0.23
Pregnancies $\pm$ SD (Range)	2.15 $\pm$ 1.87 (0-20)	NA	2.23 $\pm$ 3.07 (0-10)	NA	0.43
Abortions $\pm$ SD (Range)	0.78 $\pm$ 2.04 (0-15)	NA	0.25 $\pm$ 0.55 (0-3)	NA	0.04
Menopause(%)	22 (30.13%)	20.24-42.53	18 (17.31%)	10.59-25.97	0.04
Smoking history(%)	16 (21.91%)	13.08-33.14	17 (16.35%)	9.82-24.88	0.22
Symptoms	9 (12.5%)		NA		NA

Abstract 151 Table 2

	With HPV n: 25/73	IC 95%	Without HPV n: 48/73	IC 95%	p
<b>Educación Education</b>					
$\leq 12$ years (%)	20 (80%)	59.30-93.17	29 (60.42%)	45.27-74.23	0.07
$\geq 12$ years (%)	5 (20%)	6.83-40.7	19 (39.58%)	25.77-54.77	
<b>SES Group A (%)</b>	1 (4%)	0.10-20.35	4 (8.33%)	2.32-19.98	0.03
Group B (%)	10 (40%)	21.13-61.33	32 (66.67%)	51.59-79.60	
Group C (%)	14 (56%)	34.93-75.60	12 (25%)	13.64-39.60	
<b>DNA Positive (%)</b>	12 (48%)	27.80-68.69	12 (25%)	13.64-39.60	0.04
<b>Low Complement (%)</b>	12 (48.0%)	27.80-68.69	9 (18.75%)	8.95-32.63	0.01

Abstract 151 Table 3 Gynecological abnormalities

	Lupus HPV=25 (34.25%) 73	Control 6 (5.77%)104	P
Abnormal Cervix Colposcopy	20 (27.4%)	6 (5.8%)	0.00
Abnormal Cx Pap	15 (20.5%)	3 (2.9%)	0.026
Abnormal Cervix Biopsy	15 (20.5%)	4 (3.8%)	0.00
Abnormal Vaginal Biopsy	2 (2.8%)	0	0.23
Vulvoperineo anormal	12 (14.4%)	2 (1.9%)	0.00
Anoscopia anormal	9/26 (34.6%)	NA	NA
Abnormal Anal PapSmear	4/26 (15.3%)	NA	NA
Abnormal Anal biopsy	CVA 9	NA	NA

with HPV. Three Socioeconomic status (SES) groups were established (Graffar).

**EditorResults** 73 SLE patients and 104 healthy control were included. Table 1: Demographics characteristics.

SLE patients 25/73 (34.3%) had HPV versus 6/104 (5.8%) in the control group ( $p=0.00$ ).

In the SLE-HPV were found statistically significant differences in: low SES, sexual partners  $\geq 5$ , antiDNA+ and low complement and a trend to low educational level ( $p=0.07$ ).

At check data the average dose of steroids was 10.8 Mg/d (SLE-HPV) vs 2.9 Mg/d in without HPV ( $p=0.00$ ) while 61% (HPV group) vs 29% (without HPV) were receiving immunosuppressors (IS) (Table 2)

Non-differences were found related to duration of SLE, smoking, beginning of sexual intercourse, condom use and anal or oral intercourse.

**Conclusions** The frequency of HPV was high in women with SLE. We remark oligo/asymptomatic HPV and its association with low SES, serological activity and treatment.

As we detected a high frequency of sole anal lesions we highlight the anoscopy regardless of symptoms.

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#### ASSOCIATION OF SMOKING WITH VASCULAR DAMAGES IN SYSTEMIC LUPUS ERYTHEMATOUS FROM KOREAN LUPUS NETWORK (KORNET) REGISTRY

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**Background and aims** To investigate association between smoking and vascular damages in patients with systemic lupus erythematosus (SLE).

**Methods** A total of 500 SLE patients were enrolled in KOREan lupus Network (KORNET) registry from January 2014 to January 2016. Disease activity and organ damage were measured by Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) score and Systemic Lupus International Collaborating Clinics (SLICC) damage index. Association analyses using multivariate logistic regression analysis of covariance models with smoking status (three groups: current smoker, ex-smoker, never smoker) as outcome variable were conducted. We were divided into two groups depending on SLICC items (vascular vs. nonvascular involved items) according to the presence or absence of vascular damage including cardiovascular and peripheral vascular systems. Laboratory data was obtained including autoantibodies (antiphospholipid antibodies, anti-double-stranded DNA, etc.), complements, C-reactive protein.

**Results** There are significant differences in vascular component score of SLICC score among current, ex-, and never smokers ( $0.17 \pm 0.38$ ,  $0.03 \pm 0.17$ , and  $0.03 \pm 0.20$ ,  $p=0.003$ ). whereas overall SLICC scores were similar among three groups ( $p=0.284$ ). Current smoker showed higher vascular component score of SLICC score than never smoker ( $p=0.014$ ) and than ex-smokers ( $p=0.039$ ). Patients who has history of smoking exposure (current and ex-smoker) showed significantly higher positivity of antiphospholipid antibody (OR 2.58, 95% CI 1.31–5.08,  $p=0.006$ ).

**Conclusions** This study revealed that smoking was associated with vascular component scores in SLICC damage index. It

suggests that that smoking status may implicate the development of vascular events in SLE.

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#### PREVALENCE AND RISK FACTORS ASSOCIATED WITH NEUTROPENIA IN KOREAN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOUS

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**Background and aims** This study was performed to identify the prevalence and risk factors that are associated with neutropenia in Korean patients with systemic lupus erythematosus (SLE).

**Methods** A total 160 admissions of 85 SLE patients between 2006 and 2013 were retrospectively reviewed. Neutropenia was defined as absolute neutrophil count (ANC) below 1500/mm<sup>3</sup>. Baseline characteristics of the patients were compared between patients who experienced neutropenia and those without. Clinical and serological factors related to neutropenia episode during admission were analysed.

**Results** Thirty two (37.6%) patients experienced neutropenia, and neutropenia episode was found in 35 (21.9%) of admissions. Most of the neutropenia episodes were mild to moderate. Severe neutropenia of ANC<500/mm<sup>3</sup> occurred in 3.1% of the cases. Patients with neutropenia had higher frequencies of ANA (100.0 vs 86.8%,  $p=0.042$ ) and anti-dsDNA (87.5 vs 60.4%,  $p=0.008$ ), and satisfied more SLE classification criteria at the time of the diagnosis than those without (4.8 vs 4.1,  $p=0.014$ ). Clinical characteristics at admission such as comorbidities, concomitant medications, and SLEDAI were not different between admissions with and without neutropenia. Anaemia, leukopenia, thrombocytopenia and low complement levels were frequently associated with neutropenia. Co-existence of chronic kidney disease (OR, 16.91; 95% confidence interval (CI), 2.09–136.6;  $p=0.008$ ) and Sjögren's syndrome (OR, 6.48; 95% CI, 1.46–28.66;  $p=0.014$ ) was associated with increased risk of developing neutropenia.

**Conclusions** This study demonstrates that most of neutropenia in SLE patients occur as part of hematologic and immunologic abnormalities. SLE patients with renal damage and Sjogren's syndrome should be closely monitored for development of neutropenia.

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#### RISK OF PULMONARY EMBOLISM IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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**Background and aims** To study the risk factors of pulmonary embolism (PE) in SLE patients.

**Methods** 1739 SLE patients admitted to Renji Hospital between 2005 and 2014 (0.9% prevalence) were enrolled. The clinical data (SLEDAI) and lab data (anti-dsDNA antibody, D-Dimer, antiphospholipid antibody) were analysed.