MCD for each treatment was stored at ambient temperature for 7 and 14 days or frozen. RNA from PAX tubes and MCD was extracted and GE performed by qPCR and DxDirect[®] platform respectively. Interferon-inducible gene signature was compared between the two platforms. In addition, RNASeq was performed on immediately frozen PAX and MCD to examine suitability for broad transcriptomics.

Results: IFN-GE was comparable between PAX and MCD samples when frozen directly after collection. Stability of MCD IFN-GE was largely unchanged at 7 and 14 days of ambient storage while PAX IFN-GE decreased over storage period. Comprehensive QC of RNA-Seq showed no significant differences in the two platforms in terms of RNA quality and integrity. Transcriptional diversity and levels were comparable with an overall correlation between PAX and MCD > 95%.

Conclusion: MCD showed greater stability at ambient temperature and required minimal blood collection volumes. Downstream GE data from MCD finger stick blood collected was comparable to current PAX method. MCD in clinical trials may enable better resolution of temporal transcriptional changes and the ability to capture unpredictable events such as disease flare through ad hoc home collections allowing high frequency transcriptomic assessment. MCD coupled with a gene expression platform could become an opportunity for diagnostic development in the growing field of precision medicine.

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None

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AB0500 FLARES AND DISEASE-RELATED DAMAGE IN LATE-ONSET SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Late-onset systemic lupus erythematosus (SLE) and its disease-related outcomes have not been previously examined in a multi-ethnic Southeast Asian cohort.

Objectives: To compare the following outcomes between patients with adult-onset versus late-onset SLE a) Disease manifestations at baseline b) Frequency of flares, defined by the SELENA Flare Index (SFI) c) Baseline damage and damage accrual, defined by the SLICC/ACR Damage Index (SDI)

Methods: We prospectively enrolled patients ≥ 21 years old with SLE who fulfilled either the 1997 ACR Criteria or the 2012 SLICC Classification Criteria and followed each patient at three-monthly intervals for up to 5 years. Baseline demographics, disease manifestations, antibody profile were captured. At each visit, disease activity was measured using SLE-DAI-2k. SDI was measured annually. We defined late-onset SLE as onset of symptoms at ≥ 50 years of age and adult-onset SLE as onset of symptoms at ≥ 18 but < 50 years of age. We excluded patients with symptom onset before 18 years of age.

We compared the baseline demographic, disease manifestations and antibody profile between the adult-onset and late-onset patients. We analysed continuous variables using the Mann-Whitney U test and categorical variables using the Chi-square test. Bonferroni correction for multiple comparisons was done. We then compared the time to first flare between the two groups using the logrank test. Baseline SDI scores and the proportion of patients who have increased SDI ≥ 1 over follow-up were compared using Chi-square tests.

Results: Of the 214 patients recruited, 154 (72.0%) were Chinese and 197 (92.1%) were females. One-hundred and ninety-three (90.2%) were on anti-malarial therapy and 141 (66.2%) were on immunosuppressive agents other than corticosteroids. The median (SD) age of recruitment of the 184 adult-onset SLE patients was 30.0 (22.5-37.5) years while the median (SD) age of recruitment of the 30 late-onset SLE patients was 53.0 (50.0-56.5) years. The median (IQR) disease duration was 8.12

(2.75-13.5) years among the adult-onset patients and 5.73 (1.52-9.95) years among the late-onset patients. Arthritis was the only disease manifestation that was different between the two groups (66.8% in the adult-onset group versus 36.7% in the late-onset group, $p=0.002$). There were no significant differences in the demographics and antibody profile between the two groups.

The median (IQR) baseline Systemic Lupus Erythematosus Disease Activity Index-2k (SLEDAI-2k) was 3 (1-5) and 2 (0-4) in the adult-onset and late-onset patients respectively ($p=0.086$). The median (IQR) number of all flares per year was 0.41 (0-0.91) among adult-onset patients and 0.25 (0-0.55) among late-onset patients ($p=0.206$). There was no significant difference in the time to first flare or time to first severe flare between the two groups [mean (SD) time to any flare 2.51 (0.15) years in the adult-onset group versus 2.77 (0.34) years in the late-onset group, $p=0.521$; mean (SD) time to severe flare 3.90 (0.14) years among adult-onset patients versus 4.27 (0.28) years among late-onset patients, $p=0.336$].

The median (IQR) SDI at baseline was 0 (0-1) in adult-onset patients and 1 (1-2) in late-onset patients ($p=0.049$). There was no significant difference in the proportion of patients who accrued further damage during follow-up (7.9% of adult-onset patients versus 14.3% of late-onset patients, $p=0.268$).

Conclusion: Although Southeast Asian patients with late-onset SLE have higher disease-related damage at recruitment, baseline disease activity and frequency of flares were similar to patients with SLE of adult-onset.

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AB0501 CLINICAL ANALYSIS OF BONE MINERAL DENSITY IN PATIENTS WITH NEW-ONSET SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Osteoporosis in patients with systemic lupus erythematosus (SLE) is always thought to be GIOP (induced by glucocorticoid). Yet in our practice, there were some patients who developed osteoporosis at the onset of SLE, before the use of glucocorticoid and immunosuppressants. The clinical feature of these patients were not known by us clearly.

Objectives: This study aimed to investigate the BMD (bone marrow density) status and clinical characteristics of treatment-naïve patients with newly diagnosed SLE.

Methods: Patients admitted to Peking University Third Hospital from 2009-2016, who were newly diagnosed as SLE and had no previous medical history that would have affected their BMD, were enrolled in this study. Demographic and clinical data were recorded. BMD of the lumbar vertebrae and femoral necks were measured with dual-energy X-ray absorptiometry, and patients were stratified as normal and abnormal BMD groups (including osteopenia and osteoporosis).

Results: Eighty-nine SLE patients with a mean age of 28.7 ± 8.9 years were included in the study (Table1).

Abstract AB0501 Table 1. Demographics of newly diagnosed SLE patients

Variables	SLE patients (n=89)
Age (year)	28.7 $\pm$ 8.9
Menarche age (year)	13.1 $\pm$ 1.3
BMI (Kg/m ²)	21.7 $\pm$ 3.8
Male	7%
Smoking history	3%
Fracture history	0%
SLEDAI	10.0 $\pm$ 5.0

Approximately 36% of these patients had normal BMD, 49% had osteopenia, and 15% had osteoporosis. The SLE Disease Activity Index (SLE-DAI) in the abnormal BMD group was lower than that in the normal BMD group (9.4 ± 4.5 vs 12.1 ± 5.8 , $P=0.028$). The body mass index (BMI) was significantly lower in the abnormal than normal BMD group (20.5 ± 3.5 kg/m² vs 24.2 ± 3.2 kg/m², $P=0.00$). The total cholesterol (TC) and low density lipoprotein (LDL) were lower in the abnormal than normal BMD group (4.3 ± 1.7 mmol/L vs 2.4 ± 1.2 mmol/L, $P=0.04$; 4.9 ± 1.3 mmol/L vs 2.9 ± 0.9 mmol/L, $P=0.033$). The multisystem damage and

nervous system involvement were less in the abnormal than normal BMD group ($\chi^2 = 5.996$, $P = 0.014$ and $\chi^2 = 8.169$, $P = 0.004$). Multivariate analysis showed that BMI (correlation coefficient = 0.484, $P < 0.001$) and multisystem damage (correlation coefficient = 0.258, $P = 0.003$) were positively correlated with BMD.

Conclusion: Low BMI, SLEDAI and less multisystem damage may be risk factors of BMD abnormalities in newly diagnosed SLE patients.

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AB0502 IMPROVING RATES OF CERVICAL CANCER SCREENING AND PREVENTION IN PATIENTS WITH LUPUS

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Background: Recent studies suggest that patients with lupus have higher rates of cervical dysplasia and pre-malignant lesions. We have a large population of lupus patients at our institution that may be at increased risk of dysplastic lesions due to suboptimal rates of HPV vaccination and cervical cancer screening. The aim of this study was to determine the rate of HPV vaccination completion and cervical cancer screening compliance among the lupus patients seen in our institution. In addition, we developed a process to increase patient education and improve both HPV and cervical cancer screening rates at the level of the outpatient renal, dermatology and rheumatology clinics.

Objectives: To improve rates of cervical cancer screening and HPV vaccination among patients with Lupus

Methods: A comprehensive list was compiled of all patients with a diagnosis of lupus seen in the clinics over a 3 year period. A chart review of 332 patients was subsequently performed to determine the rate of HPV vaccination completion and the rate of compliance with cervical cancer screening. Methods were developed to improve these rates by streamlining access to HPV vaccination sites or facilitating referral for screening exams. Patients were also provided education through brochures about their increased risk.

Results: Our results revealed that rates of HPV vaccination among lupus patients at our institution were lower than national averages by 11%. Rates of cervical cancer screening were also 21% lower compared to national average for this group of patients. In creating a system to flag providers and increase patient education, we were able to improve these rates. In the first two months, 73.7% of all patients seen in the clinics were provided education and 61.5% of eligible patients that were seen in clinic were appropriately referred to either their PCP or to gynecology to complete cervical cancer screening and prevention.

Conclusion: Initial review of the lupus population at our institution highlighted a strong need to develop an intervention to improve vaccination and screening compliance in this population. By raising awareness amongst providers, we were able to significantly increase the number of at risk patients referred for cervical cancer screening and prevention. Given that the United States Food and Drug Administration has recently approved to expand the use of the HPV vaccine to women and men up to age 45, future efforts will be made to expand our eligible population to reflect these recommendations.

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AB0503 THE LUNG IN SJÖGREN'S SYNDROME PATIENTS – AN OVERVIEW OF CLINICAL CHARACTERISTICS AND DISEASE OUTCOME

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Background: Lung involvement has been reported in 10-20% of patients (pts) with primary Sjögren's syndrome (pSS) and mostly affecting parenchyma and airways. Its occurrence significantly impacts both quality of life and mortality in pSS pts.

Objectives: To characterize lung involvement in a cohort of pSS pts and present our experience with immunosuppressive drug treatment for pSS-interstitial lung disease (ILD).

Methods: Retrospective analysis of pSS pts followed in our Rheumatology department until December 2018. Lung involvement was based on imaging and/or histopathological alterations described in the spectrum of pSS-associated lung disease. Patients with and without lung disease were compared using parametric and non-parametric tests.

Results: In total, 137 pSS pts who fulfilled the European-American consensus criteria 2002 were identified, 130 (94.9%) females, with mean age at pSS diagnosis of 56.1 (± 12.2) years; median disease duration 6 [IQR 3-10] years and median follow-up 6 [IQR 3-10.25] years. Antinuclear antibodies were positive in 113 (82.5%) pts, with 95/134 (70.9%) pts presenting positive anti-SSA and 60/128 (46.9%) anti-SSB. Specific immunoassays performed in 82 pts allowed identification of anti-Ro52 antibody in 48 (58.5%) of them. Rheumatoid factor was positive in 48/91 (52.7%).

During follow-up 3 pts died, 1 due to ILD progression and 2 due to sepsis (respiratory and abdominal), both under immunosuppression.

Lung involvement occurred in 17 (12.4%) pts; median time to lung disease was 2 years [IQR 0-8] after pSS diagnosis.

Mean EULAR SS disease activity index (ESSDAI) at the time of lung involvement diagnosis was 13.1 (± 5).

Differences between pts with and without lung involvement are shown in table 1.

Table 1. – Comparison between pts with and without lung involvement

	Lung involvement (n=17)	No-lung involvement (n=120)	p-value
Female	17 (100%)	113 (94.2%)	0.31
Age at pSS diagnosis (mean $\pm$ SD)	60.9 $\pm$ 8.6	55.4 $\pm$ 12.4	0.04
Disease duration (median IQR)	8 [2.5-12]	5 [3.9-7.5]	0.24
ANA	15 (88.2%)	99 (82.5%)	0.56
Anti-Ro52	7 (63.6%)	41 (57.7%)	0.72
Hypergammaglobulinemia during follow-up	10 (58.8%)	48 (40%)	0.14
Constitutional involvement during follow-up	6 (35.3%)	5 (4.2%)	<0.001

Legend: pSS - primary Sjögren's syndrome; ANA- antinuclear antibodies