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.

REFERENCES

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±8.9
Menarche age (year)	13.1±1.3
BMI (Kg/m ²)	21.7±3.8
Male	7%
Smoking history	3%
Fracture history	0%
SLEDAI	10.0±5.0

Approximately 36% of these patients had normal BMD, 49% had osteopenia, and 15% had osteoporosis. The SLE Disease Activity Index (SLEDAI) 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