Objectives: To validate the SIMPLE index for systemic lupus erythematosus (SLE) disease activity assessment in Chinese patients.

Methods: Adult patients (age ≥ 18 years) who fulfilled the 2013 SLICC criteria for SLE and were followed in the Rheumatology clinics of Tuen Mun Hospital, Hong Kong were recruited in a cross-sectional study. Participants were invited to complete the SIMPLE questionnaire before seeing doctors on the same day. The two laboratory results were supplemented by research nurses. Physicians, who were blinded to the SIMPLE results, were asked to complete disease activity assessment by the SELENA-SLEDAI and physicians' global assessment (PGA) after consultation. Correlation was made between the SIMPLE score and the SLEDAI/PGA scores by Spearman's rank correlation test. Receiver operating characteristic (ROC) analysis was performed to find the best cut-off SIMPLE score that predicted a clinical SLEDAI score of 1-6 (mild SLE activity) and ≥ 7 (moderate/severe activity).

Results: 364 SLE patients were studied (94% women; age 45.4 ± 13.4 years; disease duration 13.2 ± 8.0 years). The proportion of patients having a history of neuropsychiatric and renal disease that required immunosuppressive therapies was 9.3% and 56%, respectively. At the time of questionnaire completion, 69 (19%) patients had SLEDAI ≥ 6 and 192 (53%) had SLEDAI 1-5. The mean SLEDAI was 3.04 ± 2.85 and PGA score was 0.62 ± 0.55 . A total of 161 (44%) had SDI score ≥ 1 . The mean SIMPLE index was 26.0 ± 12.9 . SIMPLE index correlated significantly with SLEDAI ($p=0.76$; $p<0.001$) and PGA score ($p=0.48$; $p<0.001$). ROC analysis showed that a SIMPLE index of >27 points best predicted a clinical SLEDAI score of 1-6 (area under the curve [AUC] 0.78[0.73-0.84]; sensitivity 0.75; specificity 0.71), and >36.8 points best predicted a clinical SLEDAI score of ≥ 7 (AUC 0.87[0.69-1.00]; sensitivity 0.88, specificity 0.85).

Conclusion: SIMPLE shows a good correlation with SELENA-SLEDAI and PGA. It is a simple tool that enables patients to self-report disease activity and communicate with the health care team more efficiently.

Disclosure of Interests: None declared

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POS0770

DIFFERENTIAL CLINICAL PRESENTATION BETWEEN SLE RUPHUS PATIENTS AND SLE NON-RUPHUS PATIENTS: A CASE-CONTROL STUDY

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Background: Rhupus is a term that describe the coexistence of systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA). Rhupus patients have symmetrical, erosive arthritis, characteristic SLE manifestations and an array of autoantibodies including rheumatoid factor (RF), anti-cyclic citrullinated peptides (anti-CCP), anti-dsDNA, and anti-Sm.¹ Joint involvement is common in SLE patients (90%), but only 1% to 9.7% have rhupus.² Due to its low prevalence, there is still a lack of evidence on its presentation and differences with other SLE patients without rhupus.

Objectives: To examine the rhupus prevalence and to compare the clinical and serological characteristics between rhupus, and non-rhupus SLE patients (SLE with arthritis (SLEa), and SLE without arthritis (SLEwa)).

Methods: We performed a case-control study. Rhupus patients (cases) were matched 1:1 with non-rhupus SLE patients (controls). Descriptive statistics were calculated and rhupus, SLEa, and SLEwa were compared.

Results: A total of 72 patients were included; 24 patients in each group; most were female (87.5%). The median age at rhupus onset was 36.5 years (IQR 30-42.5). RA preceded rhupus in half of the patients, 29% were initially diagnosed as SLE, and 21% were initially diagnosed as rhupus. The median duration of RA was 66 months (IQR 30-144).

In the descriptive analysis of rhupus patients, the most affected joints were the proximal interphalangeal and metacarpophalangeal joints (87.5%), followed by the wrists (79.1%). Regarding immunological findings, RF and anti-CCP were positive in 87.5% and 50% of the patients, respectively. As to radiographic findings, the median number of erosions in the hands and wrists was 2 (IQR 0-5) and the median number of joints with narrowed joint space was 7 (IQR: 1.5 - 13.5). In terms of treatment, 95.8% received corticosteroids (median 10 mg/day), 91.6% antimalarials, 79.1% methotrexate, 41.6% leflunomide, and 25.0% rituximab.

Patients with rhupus were older and had less renal and hematological involvement than patients with SLEa and SLEwa. SLEa patients had higher seropositivity for anti-RNP and anti-Sm, higher neurological involvement, and higher SLEDAI-2K scores than rhupus patients. Comparisons of other clinical and serological variables between SLE rhupus and non-rhupus patients are shown in table 1 and figure 1.

Table 1. Clinical and serological manifestations in rhupus, articular SLE, and non-articular SLE

Variables	RHUPUS M (IQR)	SLE with arthritis M (IQR)	SLE without arthritis M (IQR)	P value RHUPUS vs. SLE with arthritis	p value RHUPUS vs. SLE with- out arthritis
Age (years) M (IQR)	40 (31.5 – 49)	29 (21.5 – 45)	33 (19.5 – 37.5)	0.043	0.013
CPR M (IQR)	2.3 (1– 8.5)	1.6 (0.3– 3.6)	0.9 (0.2– 2.5)	0.337	0.032
Positive anti-RNP N (%)	7 (29.1%)	14 (58.3%)	7 (29.1%)	0.042	1.000
Positive anti-Sm N (%)	5 (20.8%)	15 (62.5%)	6 (25%)	0.003	0.500
SLEDAI – 2K score M (IQR)	4.5 (1 – 7)	9 (2 – 18)	7 (3.5 – 15)	0.045	0.082

Figure 1. Differences in the frequencies of organic alterations. w/o: without.

Conclusion: Patients with rhupus were older and had lower SLEDAI-2K scores compared with those non-rhupus. Furthermore, renal, neurological, and hematological manifestations were more common in non-rhupus patients than in rhupus patients.

REFERENCES:

- Antonini L, et al. Rhupus: a systematic literature review. *Autoimmun Rev.* 2020;19(9):102612.
- Tani C, et al. Rhupus syndrome: Assessment of its prevalence and its clinical and instrumental characteristics in a prospective cohort of 103 SLE patients. *Autoimmun Rev.* 2013; 12:537–41.

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POS0771

VALIDATION OF THE 2019 EUROPEAN LEAGUE AGAINST RHEUMATISM/AMERICAN COLLEGE OF RHEUMATOLOGY (EULAR/ACR) CLASSIFICATION CRITERIA FOR SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) IN HONG KONG CHINESE

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Objectives: To validate the 2019 EULAR/ACR classification criteria for SLE in Hong Kong Chinese patients and compare its performance with the 2012 Systemic Lupus International Collaborating Clinics (SLICC) and 1997 American college of rheumatology (ACR) criteria.

Methods: We retrospectively reviewed the medical records of consecutive patients who attended the Rheumatology clinics in Tuen Mun and Pok Oi hospitals between May and September 2019. Patients with anti-nuclear antibody (ANA) $\geq 1:80$ were included and patients with ANA $< 1:80$ or no ANA results were excluded. Patients were evaluated and cross-checked for the fulfilment of the 1997 ACR, 2012 SLICC and 2019 EULAR/ACR criteria by two investigators (YKC,CL). Medical records were then reviewed by an expert panel consisting of 3 senior rheumatologists, who were blinded for the results of the criteria evaluation, for a diagnosis of SLE based on the clinical judgement and therapeutic decisions. Teleconferences were arranged by the panel to discuss the discrepancies of the final diagnosis and agreement was made by voting. The three SLE criteria

were evaluated against the clinical diagnosis of SLE as judged by the expert panel on the sensitivity and specificity, which was calculated by 2x2 contingency tables ("condition positive" = clinical diagnosis of SLE; "test positive" = criteria positive for SLE) with standard formulas (sensitivity = true positive/[true positive + false negative]; specificity = true negative / [true negative + false positive]). Receiver operating characteristic (ROC) curve was used to study the optimal cut-off points from the EULAR/ACR criteria for the highest summation of specificity and sensitivity.

Results: 3967 patients were screened; 1542 patients who were positive for ANA ($\geq 1:80$) were included (88.3% women). The mean age of these patients at first rheumatology clinic attendance was 45.6 ± 15.0 years and the duration of follow-up was 7.5 ± 7.0 years. A total of 567 patients were judged to have SLE by the expert panel (discrepancy of clinical diagnosis in 135 patients resolved with voting). The sensitivity and specificity of the three SLE classification criteria in our patients are listed in Table 1. ROC analysis showed that the best cut-off for a clinical diagnosis of SLE using the EULAR/ACR criteria was 10 points (area under the curve [AUC] 0.977; sensitivity 89.2% and specificity 89.6%). Similar figures were obtained for subgroups of patients stratified by gender and different age ranges.

Conclusion: In our cohort of Hong Kong Chinese patients, the 2019 EULAR/ACR criteria is more sensitive but less specific when compared with 1997 ACR criteria for classifying SLE. On the other hand, the EULAR/ACR criteria is less sensitive but more specific than the 2012 SLICC criteria. The specificity of the EULAR/ACR criteria for SLE is higher in male than female patients. In our patients older than 50 years, the EULAR/ACR criteria is less sensitive but more specific for a classification of SLE. Overall, the performance of the EULAR/ACR criteria for a diagnosis of SLE in our study is similar to that reported in recent Asian studies although the sensitivity is lower, which may be related to the inclusion of ANA+ patients only.

REFERENCES:

Classification criteria	Sensitivity	Specificity
1997 ACR	85.9%	94.4%
2012 SLICC	97.5%	86.4%
2019 EULAR/ACR with 10 points as cut-off	89.2%	89.6%
2019 EULAR/ACR with 9 points as cut-off	93.6%	68.7%
2019 EULAR/ACR with 11 points as cut-off	86.9%	92.4%
2019 EULAR/ACR with 10 points as cut-off (men)	88.9%	94.5%
2019 EULAR/ACR with 10 points as cut-off (women)	89.2%	88.8%
2019 EULAR/ACR with 10 points as cut-off (age >50 years)	78.7%	94.1%
2019 EULAR/ACR with 10 points as cut-off (age ≤ 50 years)	91.7%	84.1%

Disclosure of Interests: None declared

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POS0772

PREVALENCE AND RISK FACTORS FOR HERPES ZOSTER REACTIVATION IN 1542 PATIENTS WITH RHEUMATIC DISEASES

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Objectives: To study the prevalence and risk factors of herpes zoster (HZ) infection in patients with rheumatic diseases.

Methods: Medical records of patients with rheumatic diseases who attended our out-patient rheumatology clinics between 2019 March and 2019 August were retrospectively reviewed. Patients who were using biological or targeted DMARDs were excluded. Episodes of HZ infection since disease diagnosis were identified and the prevalence over time was calculated. Laboratory parameters (total white cell count, neutrophil-to-lymphocyte ratio, serum albumin, globulin & creatinine), history of diabetes mellitus and the highest doses of immunosuppressive medications within 6 months of the first episode of HZ infection were compared with those within 6 months of last follow-up in patients who did not have HZ infection. Cox regression analysis was performed to identify factors associated with the first HZ infection in all patients.

Results: 1542 patients were studied (88% women, age 46.4 ± 15.0 years). The underlying diseases were systemic lupus erythematosus (SLE) (38%), rheumatoid arthritis (26%) and other rheumatic diseases (36%). After a total follow-up of 11,515 patient-years since diagnosis (7.5 ± 7.0 years), 122 (7.9%) patients developed 146 episodes of HZ infection, giving an overall prevalence of 1.27/100-patient years. The prevalence rates of HZ in SLE, RA and non-SLE/RA patients were 1.70, 0.64 and 0.76 per 100 patient-years, respectively. Patients who experienced HZ reactivation were younger (41.6 ± 14.7 vs 46.8 ± 15.0 years; $p < 0.001$), more likely to have SLE (74% vs 35%; $p < 0.001$) and diabetes mellitus (17% vs 7.3%; $p = 0.01$), and had a significantly lower albumin (38.6 ± 5.6 vs 41.3 ± 3.5 ; $p < 0.001$) and higher neutrophil-to-lymphocyte ratio (4.9 ± 6.2 vs 2.8 ± 2.6 ; $p < 0.001$). More patients with HZ reactivation were treated with prednisolone (54% vs 22%;

$p < 0.001$), azathioprine (20% vs 8%; $p < 0.001$), mycophenolate mofetil [MMF] (21% vs 12%; $p = 0.006$), cyclophosphamide [CYC] (4.9% vs 0.1%; $p < 0.001$) and hydroxychloroquine (48% vs 34%; $p = 0.002$) in the preceding 6 months compared with those who did not have HZ infection. Among those using immunosuppressive drugs, the doses of MMF (1.42 ± 0.64 vs 1.02 ± 0.31 ; $p = 0.005$) and prednisolone (15.6 ± 15.9 vs 5.5 ± 4.5 mg; $p < 0.001$) were significantly higher in those with HZ infection. The cumulative risk of having HZ reactivation in SLE patients at 24 and 48 months since diagnosis was 5.9% and 8.6%, respectively, which was significantly higher than that in non-SLE patients (1.9% and 2.5%, respectively; $p < 0.001$ by log rank test). Cox regression analysis revealed that having a diagnosis of SLE (HR 1.97 [1.17-3.31]), albumin level (HR 0.93 [0.90-0.97] per g/L; $p = 0.001$), serum creatinine (HR 0.995 [0.990-1.00] per $\mu\text{mol/L}$), higher neutrophil/lymphocyte ratio (HR 1.08 [1.05-1.11]) and the use of CYC (HR 6.69 [2.56-17.5]) and prednisolone (HR 1.61 [1.02-2.45]) in the preceding 6 months were independently associated with the development of HZ infection.

Conclusion: Reactivation of HZ is fairly common in patients with rheumatic diseases. Underlying SLE, prednisolone/cyclophosphamide therapy and the neutrophil/lymphocyte ratio, but not age, sex or other laboratory parameters, are the major risk factors for HZ reactivation.

Disclosure of Interests: None declared

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POS0773

CLINICAL PRESENTATION AND OUTCOMES OF THE ANTIPHOSPHOLIPID SYNDROME (APS) IN SOUTHERN CHINESE PATIENTS: THE HONG KONG APS REGISTRY

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Objectives: To report the clinical presentation and outcomes of the APS in Hong Kong Chinese patients.

Methods: The HKAPS registry was established in early 2020 by the Hong Kong Society of Rheumatology to study the outcomes of Chinese patients with APS treated in public hospitals in Hong Kong. Patients aged ≥ 18 years were identified by the Hospital Authority Clinical Data retrieval system using the ICD-10 diagnostic code of APS. The medical history and APS diagnosis was verified by sub-investigators in different hospitals using the 2006 modified consensus criteria for the APS. Eligible patients were classified into definite APS or probable APS, which was further categorized into primary (without underlying rheumatic diseases) and secondary types. The presentation, treatment and outcomes of these patients were summarized.

Results: 232 APS patients (76.3% women) were identified. All were ethnic Chinese. A total of 160 patients fulfilled the 2006 criteria for APS (definite APS) while 72 patients had probable APS (anti-phospholipid [aPL] antibodies positive once or with non-criteria manifestations). In those with definite APS, the mean age at diagnosis was 44.9 ± 15.8 years and the female to male ratio was 3.1:1. APS was primary in 82 patients while 78 patients had concomitant rheumatic diseases (SLE in 95% of patients). 130(81%) patients had thromboembolic manifestations, 20(13%) had obstetric morbidities and 10(6%) had both. In patients with secondary APS, 23% thrombotic or obstetric manifestations occurred before diagnosis of the rheumatic diseases (ie. evolved from primary APS). Lupus anticoagulant was present in 81(51%) patients, moderate/high titers of anti-cardiolipin were present in 90(56%) patients and anti- β_2 glycoprotein-1 was present in 6(4%) patients. Sixteen (10%) patients were double positive while 1 patient was triple positive for these aPL antibodies. Among the thromboembolic manifestations, arterial thrombosis (n=84) (ischemic stroke 77%, myocardial infarction 4.8%, peripheral vascular disease with limb/digital gangrene 2.4%, retinal artery 2.4%, splenic artery 1.2%, bowel infarct 1.2%) was more common than venous thrombosis (n=73) (calf vein thrombosis $\pm$ pulmonary embolism 86%, cerebral veins 2.7%, inferior vena cava/iliac veins 6.8%, retinal vein 2.7%, splenic vein 1.4%). The following treatment regimens were used in our APS patients: warfarin (71%), aspirin plus subcutaneous heparin (4%), aspirin + warfarin (3.1%), aspirin alone (17%) and the direct oral anticoagulant (DOAC) (5%). Bleeding complications developed in 35(22%) patients. Over a mean follow-up of 9.9 ± 7.0 years, recurrence of thromboembolic or obstetric manifestations recurred in 39(24%) and 6(4%) patients, respectively. A total of 29(18%) patients succumbed (median time to death: 6.4 years) and the causes of death were: pneumonia (24%), septicemia (17%), intracranial hemorrhage (14%), myocardial infarction (10%), ischemic stroke (3%), bowel infarct (3%), pulmonary hypertension (6.9%) and sudden death with unknown causes (14%).