Background: Information technology has expanded the gap in patient health literacy (HL), and HL has various implications on the trust in patient-doctor relationship. Previously, only functional HL, the ability to interpret health information through reading and writing skills, has been studied in patients with SLE (1).
Objectives: We examined how trust in physicians is affected by the broader concept of HL, including communicative HL, the ability to extract health information from communication to use, and critical HL, the ability to discern and use such information (2).
Methods: This cross-sectional study enrolled 362 SLE patients at 5 sites between June 2020 and August 2021. Three domains of HL (i.e., functional HL, communicative HL, and critical HL) were assessed using the 14-item FCCHL scale (range: 1-4 points for each domain). The outcomes were patients' trust in their physicians and physicians in general and were measured using the Japanese version of the 5-item Wake Forest Physician Trust scales (range: 0-100 points for each scale). General linear models adjusted for age, gender, education, income, SLEDAI, disease duration, depression, and hours of Internet use were conducted. Subsequently, a series of general linear models were then fit to each of the three domains of HL to examine whether or not it was associated with the aforementioned covariates.
Results: The median age of the patients was 45 (interquartile range [IQR],34-55), 88% were female. The median value of SLEDAI was 4 ([IQR], 2-8), Trust in one's physician was 80 ([IQR], 70-95) and trust in physicians generally was 65 ([IQR], 50-80). Trust in one's physician increased with higher functional and communicative HL (per 1-pt increase, 3.2 [95%CI 0.7 to 5.9]; 5.4 [95%CI 1.6 to 9.3]). Trust in doctors generally increased with higher communicative HL and decreased with higher critical HL (per 1-pt increase, 6.8 [95% CI 2.0 to 12]; -6.7 [95% CI -12 to -1.9]). Lower functional HL was associated with older age and depression, while higher HL was associated with higher educational level. Higher communicative HL and critical HL were each associated with longer Internet use.
Conclusion: In patients with SLE, higher trust in one's physician was associated with both functional and communicative HL, while higher trust in physicians generally was associated with higher communicative HL and lower critical HL. Our findings suggest that trusting relationships may be fostered by the encouragement of rheumatologists to cultivate patients' ability to share their health problems with their physicians and family members and to obtain useful health information (i.e., communicative HL), rather than to improve their ability to discern health information (i.e., critical HL).

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AB0475 AVASCULAR NECROSIS IN SYSTEMIC LUPUS ERYTHEMATOSUS: RESULTS OF LONG-TERM FOLLOW-UP FROM A SINGLE CENTRE

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Background: Avascular necrosis (AVN) is a major cause of morbidity and loss of quality of life in systemic lupus erythematosus (SLE) patients. AVN is often diagnosed at advanced stages and treatment options are limited.
Objectives: To identify the differences of demographic, clinical, and serological factors in SLE patients with and without AVN, and to investigate associated risk factors of AVN in patients with SLE.
Methods: In this single-centre retrospective cohort study, we included 533 SLE patients [88.6% female, mean (standard deviation, (SD)) age at diagnosis 34.6 (14.3) years] who fulfilled SLICC 2012 classification criteria. AVN diagnosis was confirmed by radiological imaging techniques in symptomatic patients. To investigate the correlation between maximum daily steroid dose and AVN development, we divided our patients into four groups according to the highest dose of prednisolone used for a month or longer during their follow-up (Group 1: 0-19mg/day, Group 2: 20-39mg/day, Group 3: 40-59mg/day, Group 4:≥60mg/day). Pulse steroid administration was also recorded. Multivariable logistic regression analyses were performed to demonstrate the associated factors with AVN. Clinical parameters found to be related to AVN development in univariable analyses were analyzed both in the sex- and age-adjusted model, and the model including sex, age, time to AVN or last follow-up, immunosuppressive therapy, and steroid dosages (multivariable model). To determine the relation of different steroid groups and pulse steroids with AVN, odds ratios (OR) were calculated in the sex- and age-adjusted model and multivariable model.
Results: After a median disease duration of 9.1 years, AVN was detected in 46 (8.6%) patients. There were 85 AVN sites involved, the hips being the most commonly affected (71.7%) (Figure 1). The mean age at SLE diagnosis was significantly younger in the AVN group (mean (SD) 26.8 (11.7) vs. 35.3 (11.4), p<0.001). Fever (21.6% vs. 10.9%), malar rash (52.2% vs. 36.3%), serositis (26.1% vs. 14.6%), renal involvement (65.2% vs. 35.1%) and hemolytic anemia (32.6% vs. 19.3%) were found more frequently in the AVN group compared to non-AVN group, respectively (p<0.05). In the multivariable logistic regression analyses, malar rash was found to be the only clinical feature associated with AVN (OR 2.01, 95% confidence interval (CI) 1.02-3.97). The steroids had an association with AVN development in a dose-dependent manner (Table 1). Pulse steroids did not increase the risk of AVN (Table 1).

Table 1. Factors associated with avascular necrosis.

Association between maximum daily steroid dose and AVN			
	OR Crude (95% CI)	OR Age-sex adjusted (95% CI)	OR fully adjusted* (95% CI)
0-19 mg/day (reference group)	1.00 (reference group)		
20-39 mg/day	7.22 (1.29-40.31)	6.63 (1.18-32.28)	5.86 (1.00-34.37)
40-59 mg/day	14.08 (3.02-65.63)	10.69 (2.25-50.75)	8.79 (1.77-43.61)
≥60 mg/day	31.50 (7.39-134.19)	26.03 (6.02-112.59)	13.93 (3.07-63.16)
Association between pulse steroid treatment and AVN			
	OR Crude (95% CI)	OR Age-sex adjusted (95% CI)	OR fully adjusted* (95% CI)
No pulse steroids	1.00 (reference group)		
Pulse steroids	6.29 (3.35-11.81)	4.86 (2.53-9.37)	1.51 (0.69-3.32)

*In addition to the age at SLE diagnosis and sex, immunosuppressant use, and follow-up duration were also added to the final model.

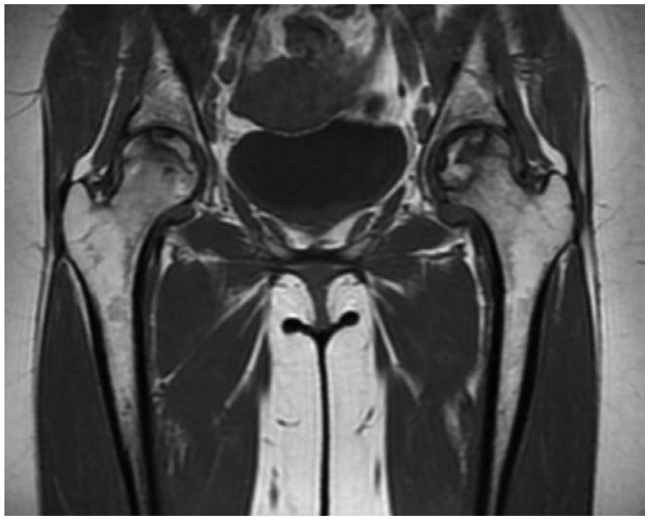


Figure 1. Magnetic resonance imaging of avascular necrosis of bilateral femoral heads in a patient with SLE.

Conclusion: High-dose daily steroid use was associated with an increased risk of AVN in SLE patients. Therefore, to prevent AVN in patients with SLE, the aim should be minimizing the dosage and duration of steroid use as much as possible. Furthermore, we showed that malar rash independently increased the risk of AVN development. Further research is required to explain this finding.

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AB0476 PREDICTIVE FACTORS FOR THE DEVELOPMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS IN PATIENTS WITH IMMUNE THROMBOCYTOPENIA

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Background: Patients with immune thrombocytopenia (ITP) have a risk of developing systemic lupus erythematosus (SLE). We sought to examine the clinical characteristics of patients with primary ITP who later developed SLE, and identified the risk factors for the development of SLE.
Objectives: We retrospectively examined patients who were diagnosed with primary ITP at a tertiary hospital between August 2001 and November 2019. We compared the clinical characteristics according to the development of SLE. Logistic regression analysis was performed to identify the factors associated with the development of SLE.
Methods: Of 130 patients with primary ITP, 10 (7.7%) were later diagnosed with SLE during follow-up (median, 30 months [IQR, 15.5–105]). The presence of skin bleeding, organ bleeding, lymphopenia, anemia, and positive antinuclear antibody (ANA) titer (> 1:160) were more common among patients who later developed SLE than did those who did not develop SLE. Multivariate analysis showed that young age (< 40 years; odds ratio [OR], 8.359 [95% confidence interval (CI), 1.230–56.793]; p = 0.033), organ bleeding (OR, 18.349 [95% CI, 2.771–121.517]; p = 0.003), and ANA positivity (>1:160; OR, 7.692 [95% CI, 1.482–39.910]; p = 0.015) were significantly associated with the development of SLE.
Results: Young age (< 40 years), organ bleeding, and ANA positivity (> 1:160) were risk factors for the development of SLE in patients with primary ITP.
Conclusion: These results suggest that continued follow-up for the detection of SLE development is needed for patients with ITP, particularly those with young age, ANA positivity, or organ bleeding.
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Table 1. Factors associated with the development of SLE in patients with primary ITP

	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Young age[a]	5.444	1.332–22.250	0.018	8.359	1.230–56.793	0.033
Female	4.333	0.530–35.422	0.17			
BMI	0.873	0.717–1.070	0.20			
Skin bleeding	8.419	1.034–68.533	0.046			
Mucosa bleeding	1.250	0.247–6.330	0.79			
Organ bleeding	14.864	3.633–60.815	< 0.001	18.349	2.771–121.517	0.003
Platelet counts	0.911	0.828–1.002	0.06			
ANA positivity[b]	16.500	3.984–68.341	< 0.001	7.692	1.482–39.910	0.015
Neutropenia[c]	2.111	0.229–19.499	0.51			
Lymphopenia[d]	4.846	1.189–19.759	0.028			
Anemia[e]	10.118	2.044–50.091	0.005			

SLE: systemic lupus erythematosus, ITP: immune thrombocytopenia, BMI: body mass index, ANA: antinuclear antibody, OR: odds ratio, CI: confidence interval. [a]Young age = age < 40 years [b]ANA positivity ≥ 1:160 [c]Neutropenia = Absolute neutrophil count < 1500 µL [d]Lymphopenia = Absolute lymphocyte count < 1500 µL [e]Anemia = Hemoglobin < 12 g/dL

Disclosure of Interests: None declared
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AB0477 REMISSION AND CLINICAL PATTERNS OF SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) IN SOUTHERN PAKISTAN: RETROSPECTIVE COHORT STUDY

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Background: SLE is a difficult to treat autoimmune disease due to clinical heterogeneity, unpredictability of disease flares and limited therapeutics. These challenges are worsened in a low-middle income country (LMIC) setting, yet clinical epidemiology from LMIC may have global benefits.
Objectives: To determine (i) the clinical pattern of SLE and (ii) the effect of SLE severity and treatment regimen on time to remission.
Methods: A retrospective cohort study of 200 SLE patients' medical records (Mar 2014 to Mar 2020) from ImmunoCure clinic was conducted. Patients fulfilled American College of Rheumatology criteria 1997 for SLE classification. Inclusion criteria were active SLE disease, as measured by SLEDAI-2K [1]. SLEDAI categories were used as outcome measure: mild (score ≤6), moderate (7-10), severe (>10) to evaluate clinical pattern of SLE. ANA subsets and disease phenotypes were used to describe the clinical pattern in each SLEDAI category. ANA was performed using Immunofluorescence on Human Hep2 cells. ANA subsets were performed using immunoblot from Euroimmun [2]. Statistical analyses were performed using STATA v16.0. Kruskal-Wallis test was used for continuous measures, and Pearson's chi square test was used to compare categorical variables across SLEDAI severity. Remission status and time to remission was the secondary outcome. Remission was based on DORIS 4 criteria [3]: immunosuppressives (IS) with Prednisolone (Pred) 5mg or 2.5mg and finally off all drugs (Pred 0 and no IS), along with follow up duration > 1-year. Total doses of all drugs were calculated [4]. Survival regression was used, along with Kaplan Maier curve to estimate median remission time (months).
Results: ANA Speckled pattern is associated with mild to moderate disease (P=0.02). Most frequent antibodies are anti-dsDNA (63%), SSA (24%) and Ku (17.5%). Anti-cardiolipin (aCL) antibodies are significantly associated with severe disease (OR = 3.6, CI: 1.5-8.5, P<0.01). Most common presentations of SLE in this cohort are arthritis (85%), alopecia (53%), anemia (38%), rash (35%) and CNS disease (28%). Nephritis, CNS disease, cytopenias and oral ulcers are significantly associated with severe disease activity (P<0.01). ILD is in 10% of our cohort. Frequency of severe SLE was 47.5%, whereas mild disease was 16.5%. Mean duration of follow up was 41±19 months. For every 1- month increase in duration of follow up, the odds of remission increase by 6% (CI: 1.04-1.09, P<0.05). Clinical remission on treatment (at Pred≤5mg) was successfully achieved in 62% patients. Complete remission (off all IS & Pred) was achieved in 24 patients (14 in severe SLEDAI category) out of 200, with a mean post remission follow-up of 18 ± 15 months. Importantly, no statistical difference was found in SLEDAI category and remission status (p=0.3). However, the hazard of time to remission is 61% (CI: 0.21-0.77, P=0.01) less in severe SLE as compared to mild SLE disease activity (Figure 1).

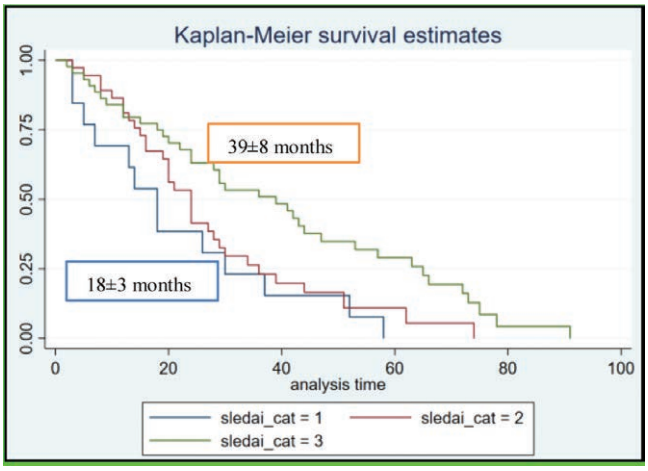


Figure 1. Kaplan Meier curve for remission time in 94 SLE patients followed for >1-year.

Conclusion: Presence of aCL is associated with severe SLE. Sustained remission is possible even in severe SLE in a LMIC setting if adequate immunosuppression is provided with persistent clinical follow-up.
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