the clinical utility of the antibody and help deciphering the pathogenesis of this complex disease.

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SAT0298 DIAGNOSIS OF SYSTEMIC SCLEROSIS: HOW AND WHEN

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Background: Systemic sclerosis (SSc) is a heterogeneous disease regarding its clinical expression, evolution and forms of presentation. In spite of the lack of a disease modifying therapy, there are effective treatment options to control complications such as pulmonary arterial hypertension (PAH), interstitial lung disease (ILD) or digital ulcers (DU). Early diagnosis is crucial and allows the physician to start these treatments as soon as possible. To know how and when we diagnose SSc and its clinical manifestations will help us to detect potential improvement areas.

Objectives: To study the main clinical manifestations that lead to diagnosis of SSc, the delay of the diagnosis after the beginning of the first symptom, and to analyze the role of the different clinical features in the diagnosis.

Methods: A retrospective and descriptive study was conducted, which included patients with SSc from our Rheumatology Department. Clinical data and specific autoantibodies profile (ACA, Scl-70, RNP) were recorded, paying special attention to the clinical manifestations that led to diagnosis. We classified them in eight categories: secondary Raynaud's phenomenon (SRP), digital ischemia or DU, musculoskeletal symptoms, skin induration, ILD, PAH, specific autoantibodies detection, and others. The date of starting of Raynaud's phenomenon (RP), of the first non-Raynaud symptom and the date when the diagnosis was established were registered. Analysis were conducted using STATA.

Results: The sample included 149 patients with SSc, meeting the 2013 ACR/EULAR criteria. RP appeared several years prior to the diagnosis (median of 3 years, IQR 0-8), and typically before the first non-Raynaud symptom. 141 out of 149 patients (94,6%) presented RP prior to the diagnosis. However, SRP was the manifestation that led to diagnosis in only 42/149 patients (41,6%), followed by skin induration (18,1%) and DU (12,7%). Surprisingly, 30/149 patients (20,1%) were diagnosed after the appearance of severe complications such as DU, ILD or PHA. Most patients started symptoms related to SSc several years before diagnosis (details in Table 1). 40/48 patients (83%) that were diagnosed due to SRP, presented abnormalities in nailfold capillaroscopy as well as specific autoantibodies (Table 2). Presenting telangiectasia, calcinosis, ILD or PAH was not associated with an early diagnosis, nor was ACA, Scl-70 or RNP positivity.

Conclusion: An early approach of RP with capillaroscopy and specific autoantibodies would avoid delays to SSc diagnosis, allowing a close follow-up and an early treatment if necessary. SSc must always be considered as a differential diagnosis in patients with DU, ILD or PHA. An adequate referral of patients from primary care physicians to rheumatologists, and a multidisciplinary approach with Vascular Surgery, Pneumology and Cardiology Units would advance the diagnosis of this complex and potentially severe disease.

Table 1.

CLINICAL MANIFESTATION THAT LEADS TO DIAGNOSIS	PACIENTS n (%)	YEARS FROM FIRST SYMPTOM TO DIAGNOSIS median (IQR)	YEARS FROM RAYNAUD'S PHENOMENON TO DIAGNOSIS median (IQR)
Secondary Raynaud's Phenomenon	62 (41,6)	3 (1-10)	3 (1-9)
Skin induration	27 (18,1)	1 (0-4)	1 (0-4)
Digital Ischemia/UD	19 (12,7)	2 (0-12)	2 (0-12)
Musculoskeletal symptoms	18 (12,1)	3 (0-6)	3,5 (0-6)
ILD	8 (5,3)	2,5 (1-4)	3 (0-4)
Specific autoantibodies	6 (4)	5,5 (4-9)	3 (0-9)
Others	6 (4)	5,5 (0-10)	5,5 (0-10)
PAH	3 (2)	35 (20-35)	35 (20-35)

Table 2.

PACIENTES WITH SECONDARY RAYNAUD'S PHENOMENON	n (%)
With abnormal capillaroscopy	48/59 (81)
...and only ACA+	36 (75)
...and only anti Scl-70+	3 (6,2)
...and only anti-RNP+	2 (4,1)
... and ACA+ and/or Scl70+ and/or anti-RNP+	40 (83,3)
... without autoantibodies	8 (16,6)

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SAT0299 PREVALENCE OF PERIPHERAL EOSINOPHILIA AND CLINICAL ASSOCIATIONS IN THAI SYSTEMIC SCLEROSIS PATIENTS

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Background: Eosinophilia has been reported in systemic sclerosis (SSc) and localized scleroderma, so it might be part of the immune response in the pathogenesis of the disease.

Objectives: To determine the prevalence and clinical associations with peripheral eosinophilia in Thai SSc patients.

Methods: A cross-sectional study was conducted among Thai adult SSc patients, followed up at the Scleroderma Clinic, Khon Kaen University, Thailand, between November 1, 2016 and November 30, 2017. We excluded patients who had clinical overlap with other connective tissue disease, coexisting with localized scleroderma, eosinophilic fasciitis, or eosinophilia myalgia syndrome, and other diseases that cause eosinophilia. Peripheral eosinophilia is defined when total eosinophil count (TEC) is greater than 500 cells/mm³. Clinical, laboratory tests for tissue parasite, cytokines, and others for evaluation the cause of eosinophilia were done on the study date.

Results: A total of 185 SSc patients were enrolled. Fifty-seven cases (10.1%) were peripheral eosinophilia of which 21 had the causes of eosinophilia identified by laboratory without clinical symptoms (viz., 9 adrenal insufficiency, 2 tuberculosis, and 10 parasitic infection). The total prevalence of the unknown causes of peripheral eosinophilia in SSc was 21.9% (95%CI 15.9-29.1) (36 of 164 cases). Five of the patients had TEC above 1500 cells/mm³. Of the 164 SSc patients, the majority (70.6%) had diffuse cutaneous SSc, and the female to male ratio was 2.3:1. The respective median age and median duration of the disease was 57.0 years (IQR 52.2-63.9) and 6.5 years (IQR 2.9-10.5). According to a multivariate analysis, being male and duration of disease increasing

every year were significantly associated with peripheral eosinophilia in SSc patients (OR 3.46 (95%CI 1.11-10.73) and 1.16 (95%CI 1.03-1.30), respectively), while Raynaud's phenomenon had a significantly negative correlation with peripheral eosinophilia in SSc (OR 0.27: 95%CI 0.09-0.84). Other parameters—such as SSc subset, severity of skin tightness, serology, cytokines (transforming growth factor- β , interleukin-5)—were not correlated with peripheral eosinophilia.

Conclusion: Peripheral eosinophilia of unknown cause can be detected 1 in 5 SSc patients. The factors associated with peripheral eosinophilia are longer disease duration and being male while vasculopathy has a negative association.

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SAT0300 ABSTRACT WITHDRAWN

SAT0301 THE USE OF 16 GRIPS TEST TO EVALUATE HAND IMPAIRMENT IN SYSTEMIC SCLEROSIS (SSC): PRELIMINARY TO CONSTRUCTION OF PERSONALIZED DEVICES

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Background: Systemic sclerosis (SSc) is a progressive connective tissue disease of unknown etiology characterized by autoimmune response and changes in the microvascular system. Although skin fibrosis represents the primary element of this disease, patients may present muscular and/or joint damage. Hand impairment is a major cause of morbidity and disability in about 90% of SSc patients. The ADL difficulties are similar to those of patients with rheumatoid arthritis but SSc patients use a low number of assistive device. In our center an interdisciplinary research unit composed of rheumatologists, rehabilitators, occupational therapists, and design engineers, with the directly involvement of the SSc patients within the design team, are developing a design method to prototype ergonomic assistive device personalized for hands.

Objectives: Evaluate through the 16 grip test which were the most difficult grips for SSc patients in order to understand what particular changes we need to focus on more rehabilitative attention. Determine what ADL can be linked to difficult grips to understand how to work on it. Give advice and design appropriate customized ergonomic aids.

Methods: 92 patients (79 females and 13 males) with SSc followed by our tertiary University based Rheumatologic Center have been specifically evaluated by Hand Rehabilitation Service. The average age of patients was 56y. The 16 grip test was used to evaluate patients. It includes 16 different pattern of grip divided into power grip and precision pinch - Moreover it tests basically two different grip and pinch modalities:

static prehension and dynamic prehension. The score for each grip goes from 0 to 4 (0=impossible, 1=realized with high difficulty, 2=medium difficulty, 3= low difficulty, 4=normal).

Results: 30 patients (32%) had no grip problem, 9 only on the left and 5 on the right hand; 4 patients presented grip difficulty in both hands with a reduction > 25%. 31 had difficulty in 2 or more grip pattern. The most interested grips are the monodigital and pluridigital pressure, the tip to tip pinch, the extension grip in both sexes; the teno-digital in males and the digito-palmar in females. Over 60% of the grips were normal; in particular in our patients only few deficiencies in the power and in the static prehension grips were reported. The most interested patterns of grips are in the group of precision handling related to the use of the fingertips; the extension grip to the difficulty in opening the first commissure. The problems of hand impairment are restricted to a subset of patients around 10-15%. From these results we can obtain useful data to construct our personalized devices for SSc hands.

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SAT0302 SINGLE-PORT THORACOSCOPIC SYMPATHICOTOMY IS VERY EFFECTIVE FOR TREATMENT RESISTANT RAYNAUD'S PHENOMENON: A ONE MONTH FOLLOW-UP

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Background: In some patients, Raynaud's Phenomenon (RP) symptoms prove resistant to conventional vasodilatory treatment. Thoracic sympathectomy is shown to be effective as treatment of RP, but is associated with surgical burden. During this procedure, the sympathetic nerve traversing to the upper extremity is dissected, subsequently leading to vasodilatation. In our centre, single-port thoracoscopic sympathectomy (SPTS) has been developed, a minimally invasive technique, extensively limiting surgical burden. [1]

Objectives: To evaluate SPTS feasibility and efficacy after one month in patients with treatment resistant RP.

Methods: In this study RP patients were their own controls, as they received an unilaterally left sided sympathectomy. The effects of the SPTS was assessed at baseline and one month after the procedure. Perfusion of the hand was assessed using a cooling and recovery procedure, and laser speckle contrast analysis (LASCA) at room temperature of 23 degrees Celsius. The number and duration of RP attacks was reported over a two week period prior to reassessment by standard questionnaire.

Results: Eight patients were included in the study, 6 male/2 female, with a median (IQR) age of 45.2 (30.2–55.3) years, body mass index of 23.9 (23.4–26.8) kg/m², and RP duration of 7.0 (2.5–14.3) years. Five patients suffered from primary RP, and three patients had RP secondary to connective tissue disease (CTD) [mixed CTD (n=2) and limited cutaneous systemic sclerosis (n=1)]. All patients were very satisfied with the results and the number of attacks in the left hand decreased (p=0.018). After surgery an unilateral improvement in left hand perfusion was observed