Objectives: to evaluate changes in therapeutic approach and outcomes over the last three decades in a monocentric cohort of SLE patients.

Methods: This is a retrospective analysis of prospectively collected data from a monocentric cohort of patients with SLE with disease diagnosis between 1990 and 2020. Based on the year of diagnosis, patients were divided in three groups, each of them corresponding to a decade: group 1: decade 1990-1999; group 2: decade 2000-2009; group 3: decade 2010-2020. For each patient, epidemiological and demographic characteristics, cumulative organ involvement and serology, previous and ongoing therapies, comorbidities were collected and compared among the 3 groups. Organ damage was evaluated by the SLICC-DI (SDI)³ at 1 and 5 years from diagnosis, as comorbidities we considered hypertension, diabetes, osteoporosis and cardiovascular (CV) events occurred during the follow-up.

Results: A total of 262 SLE patients were enrolled in the study (97% Caucasian, 90.5% females): 69 patients in group 1, 100 in group 2 and 93 in group 3. Demographic and clinical characteristics of whole cohort and of the three groups are summarized in table 1. Differences in therapies during the first year from diagnosis among the groups are summarized in table 1. In group 3 the use of Micophenolate Mofetil was significantly more common with respect to the group 1 (25% vs 1.4%, $p=0.001$) and similar to group 2 (25% vs 25.5%, $p=ns$); on the contrary, in group 3, Azathioprine (AZA) and Cyclosporine (Cya) were less used (13.2% vs 27.5%, $p=0.003$ and 3.3% vs 14.3%, $p=0.019$ respectively). As Cyclophosphamide (CYC) is concerned, it was used with the same frequency in the three decades, but in group 1, the total dose of CYC was significantly higher than second and third group (4.8 g vs 2.3 and 0.9, $p=0.02$ and $p=0.001$ respectively). In group 2 and 3, during the first year of disease, biological drugs (Rituximab or Belimumab) have been used more frequently (2% and 2.2% vs 0%, $p=0.04$). Any differences have not been showed for GC among the groups. However, in group 3 a significantly higher proportion of patients stopped GC therapy within 5 years from diagnosis (34.5% vs 8.8% and 12.5%, $p=0.001$) and in the same group the duration of GC therapy was significantly shorter with respect to previous two decades (3.1 years vs 16.8 and 10.5 respectively, $p=0.001$). As regard damage accrual, at 1 and 5 years from diagnosis, no significant differences among groups were observed; however, hypertension resulted significantly less common in group 3 (10% vs 26% and 37.3%, $p=0.001$), even adjusting for age (OR=0.2); less CV events were recorded in group 3, but significance is lost adjusting for age.

Table 1.

	Whole cohort	Group 1	Group 2	Group 3	p
Patients (n)	262	69	100	93	
Caucasian (%)	97%	99%	98%	94.6%	n.s.
Females (%)	90.5%	94.2%	95%	92.5%	n.s.
Median age at diagnosis (IQR)	29 (20-36)	27 (20-32)	28.5 (20-36)	34 (23-44)	0.001
Cumulative organ involvement					
Renal	48.1%	52.2%	57%	35.5%	0.007
Articular	74.4%	75.3%	66%	82.8%	n.s.
Serositic	19.5%	20.3%	22%	16.1%	n.s.
Neuropsychiatric	8%	11.6%	6%	7.5%	n.s.
Cutaneous	63%	70%	60%	61.3%	n.s.
Hematological	58.4%	51.5%	61%	61.3%	n.s.
Therapies 1st year					
AZA	17.2%	8.7%	27.5%	13.2%	0.003
MMF	18.7%	1.4%	25.5%	25.3%	0.001
CYC	22.5%	21.7%	27%	17%	n.s.
Cya	9.9%	13%	14.3%	3.3	0.019
Biologicals	1.5%	0%	2%	2.2%	n.s.

Conclusion: These data show that new therapies and new treatment strategies have actually been implemented in clinical practice over the past 30 years; further studies with a longer follow-up are necessary to appreciate the impact of these advancement on clinical outcomes.

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SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) DIAGNOSED DURING HOSPITALIZATION: CLINICAL PHENOTYPE AND PERFORMANCE OF THE SLE RISK PROBABILITY INDEX (SLERPI)

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Background: Systemic Lupus Erythematosus (SLE) can first present with severe or critical disease leading to hospitalization. Prompt recognition of the disease in hospitalized patients may lead to early institution of treatment and improve outcomes. We have recently developed a clinician-friendly algorithm for SLE diagnosis based on classical clinical and serological SLE features [SLE Risk Probability Index (SLERPI)]¹.

Objectives: To determine the clinical phenotype of SLE patients first diagnosed during hospitalization, the interval between hospitalization and SLE diagnosis and the potential impact of SLERPI on early diagnosis.

Methods: Mixed prospective (from June 2020 to January 2021) and retrospective study of SLE patients from "Attikon" cohort (n=820)². Clinical phenotype was divided into 10 core domains (neuropsychiatric, thrombosis, nephritis, serosal, haematologic, pulmonary, cardiovascular, gastrointestinal, skin-joints, other). Chart review and patient interview was performed to assess the lag time between 1) the onset of symptoms and 2) the hospitalization and the final diagnosis. Demographic and clinical characteristics, SLERPI and SLICC damage index were recorded for each patient at the time of diagnosis. SLE diagnosis was based on at least one of the three existing classification criteria.

Results: Out of 820 SLE patients, 202 (24.6%) diagnosed during hospitalization were included. Among them, 185 patients (91.5%) were hospitalized because of a lupus related feature, while in the remaining 17 SLE patients, hospitalization was due to non-lupus related manifestations. The most common lupus-related clinical phenotype leading to hospital admission was neuropsychiatric lupus (n=51, 25.2%) with cerebrovascular events constituting the dominant clinical syndrome (n=8/51). Thrombotic events (n=32, 15.8%), mainly pulmonary embolism (n=20/32), cytopenias (n=32, 15.8%), lupus nephritis (n=30, 14.8%), skin-joint disease (n=26, 12.8%) and serositis (n=24, 11.8%) were also common as dominant manifestations. Pulmonary disease (n=16, 7.9%), heart disease (n= 4, 1.9%) and gastrointestinal disease (n=2, 0.9%) were less common. On admission, 11.3% of patients (n=23) had symptoms from at least 2 clinical domains as defined. Most patients (93.5%) had multisystem disease while only 6.5% had organ-dominant disease. Early diagnosis (within 3 months from hospitalization) was established in 86.6% while 27 patients had their SLE diagnosis more than 3 months from hospitalization. The mean lag time between the hospitalization and the diagnosis was approximately 14 months (SD 19.9). Overall, the mean interval between the onset of symptoms and the diagnosis was 48.2 months (SD 73.2). Importantly, a SLERPI >7 (suggesting probable SLE) at hospitalization was present in 92.5% of SLE patients with delayed diagnosis.

Conclusion: One out of four SLE patients first present with moderate to severe disease necessitating hospitalization, while in approximately 15% of such patients, diagnosis is initially missed. Application of the SLERPI may facilitate early SLE diagnosis.

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