Objectives: The aims of this study were (1) to compare these two pharmacological approaches, and (2) since it would be very interesting to retrospectively assess severe non-adherence in clinical trials or in large cohort of patients in which only serum samples are usually available, to determine if serum HCQ level cut offs could be established for identification of severe non-adherent patients.

Methods: The HCQ and desethylchloroquine (DCQ) levels were measured in serum and whole blood from 573 SLE patients. The risk factors for active SLE (SLEDAI score >4) were identified using multiple logistic regression. HCQ serum level was also measured in 51 non-adherent patients (whole blood HCQ level <200 ng/mL).

Results: The mean HCQ and DCQ levels were 916 ± 449 and 116 ± 55 ng/mL in whole blood, respectively; and 469 ± 223 and 63 ± 31 ng/mL in serum, respectively. The mean ratio of serum/whole blood level for HCQ and DCQ were 0.53 ± 0.15 and 0.57 ± 0.21 , respectively. A strong positive correlation was found between serum and whole blood levels of HCQ ($\rho=0.837$ [CI95% 0.810-0.860], $p<0.0001$), and DCQ ($\rho=0.771$ [CI95% 0.736-0.802], $p<0.0001$). In the multivariate analysis, only corticosteroids ($p=0.044$), immunosuppressant ($p=0.027$), HCQ whole blood level ($p=0.023$) and hemoglobin ($p=0.009$) were identified as an independent risk factor of active SLE but serum HCQ level was not. Given the mean ratio of serum/whole blood level for HCQ was 0.53, we extrapolated that serum HCQ level cut offs of 106 and 53 ng/mL would correspond to the previously used cut-off of 200 and 100 ng/mL of HCQ in whole blood.

Using HCQ serum level cut off of 106 ng/mL, 43 of 51 patients (84%) with blood HCQ levels <200 ng/mL would also have been considered as non-adherent. The positive and negative predictive value of HCQ serum level < 106 ng/ml to detect non-adherence were 96.6% and 63.6%, respectively.

Of these 51 patients, 25 patients (49%) exhibited HCQ whole blood concentration below 100 ng/mL. Using HCQ serum level cut off of 53 ng/mL, 23 of 25 patients (92%) with HCQ whole blood level <100 ng/mL, would also have been considered as non-adherent. The positive and negative predictive value of HCQ serum level < 53 ng/ml to detect non-adherence were 82.1% and 90.9%.

Conclusion: Our data support the use of whole blood rather than serum as the matrix for drug monitoring of HCQ levels in SLE patients. However, when whole blood is not available, our results support the use of HCQ serum level to assess non-adherence with a cut off of 106 ng/mL corresponding to 200 ng/ml in whole blood.

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SAT0189

A NOVEL DEVICE FOR RAPID MINOR SALIVARY GLAND BIOPSY IN SUSPECTED SJÖGREN'S SYNDROME

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Background: Labial minor salivary glands (MSG) biopsies are a frequently performed diagnostic procedure for Sjögren's syndrome. MSG biopsy usually requires additional assistance e.g. to provide lower lip protrusion and to apply pressure on the lip during the procedure. The latter is done to foster protrusion of salivary glands and therefore to reduce the incision depth and potential nerve damage. We recently developed a new single-use device for MSG by 3D-printing in form of a lip clamp with a stamp on the lower arm to reduce invasiveness and to facilitate the intervention.

Objectives: To assess practicability and to describe the technical application of this device for MSG biopsies in the rheumatology department.

Methods: Retrospective study of MSG biopsies performed with the use of a dedicated lip clamp. For each MSG biopsy, we recorded if any assistance was needed during the procedure, occurrence of any complication, if salivary glands were obtained and if the quality of the salivary gland tissue sample was adequate for histologic analysis.

Results: 12 MSG biopsies performed on 12 patients with suspected Sjögren's syndrome were included in the study. MSG biopsies were performed between August 2018 and January 2019. Using the lip clamp, the physician was able to perform all the biopsies without assistance. No complication occurred with a follow-up of 1 week for each patient. Salivary glands tissue samples were obtained in 11/12 of the patients using 1 incision. For 1 patient, a second incision had to be performed on the contralateral side of the lip during the same intervention because no glands were found on the first attempt. Quality of all the samples was

adequate for histologic analysis. We did not observe an increase in procedure time compared to routine MSG biopsy procedure.

Conclusion: The use of a single-use lip clamp facilitates MSG biopsy without needing assistance and potentially reduces invasiveness and collateral damage. Quality of the tissue samples obtained was adequate for histological analysis.

How to use the lip clamp

A: Prepare the clamp and perform local anesthesia. **B:** Position the clamp on the lower lip with the recess of the clamp facing up, at 0.5-1 cm off the midline. **C:** Perform a 5 mm vertical superficial incision. Due to the pressure from below, a minor salivary gland appears. Seize it with forceps and cut it with scissors or scalpel. **D:** Open and remove the clamp. No stitches are required.

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SAT0190

LYMPHOMA IN PRIMARY SJÖGREN'S SYNDROME: A RETROSPECTIVE CLINICAL STUDY WITH PATIENTS FROM THE UPA (UDINE, PISA, ATHENS) GROUP

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Background: Lymphoma development in Sjögren's syndrome has significant impact on morbidity and mortality of the disease.

Objectives: To describe and compare clinical, serological and histological features of patients with primary Sjögren's syndrome (pSS) associated non-Hodgkin's lymphomas (NHLs) in 3 cohorts, from Greece (1) and Italy (2).

Methods: 140 consecutive pSS patients with NHLs who fulfilled the 2002 AECG criteria for Sjögren's were included in the study. Patients were recruited from 3 centers (Udine, Pisa, Athens, cohort named UPA), two from Italy (Udine and Pisa University Hospitals with a total of 63 cases, named cohort UP) and one from Greece (University of Athens with 77 cases, named cohort A). Age at NHL onset, NHL subtype and distribution, SS disease duration until lymphoma development, serum anti-SSA/SSB antibodies and rheumatoid factor, history of salivary gland enlargement, cryoglobulinemia with or without vasculitis and C4 hypocomplementemia before the onset of NHL were recorded and compared.

Results: The Greek cohort (A) had a median age at lymphoma diagnosis 58 years (range: 28-90 years) and the (UP) cohort a median age at diagnosis of lymphoma 55.6 years (range: 25-77 years). The median time from SS to lymphoma diagnosis was 65.8 months (range: 0-456 months) vs 48 months (range: 0-276 months) for (A) and (UP) cohort respectively. The commonest histologic subtypes such as, MALT (mucosa associated lymphoid tissue), diffuse large B cell (DLBC) and nodal or splenic marginal zone (MZ) lymphomas were observed in similar frequencies between

the 2 cohorts. The proportion of pSS NHLs patients with MALT lymphomas and >1 involved sites was significantly higher in cohort (A) compared to (UP) cohort [25/51, (49%) vs 5/40 (12.5%), $p=0.0003$] while extranodal localization of DLBC lymphomas was less frequent in Greek compared to Italian patients [2/12 (16.7%) and 4/10 (40%) respectively]. No significant differences were observed regarding anti-Ro/SSA, anti-La/SSB, rheumatoid factors (RF) or history of parotid gland enlargement. Interestingly, no significant difference was also observed in the frequencies of serum cryoglobulinemia (without vasculitis) and C4 hypocomplementemia. Importantly, cryoglobulinemic skin vasculitis was significantly more frequent in cohort (A) than in cohort (UP) [33/77 (42.9%) vs 12/63 (19.0%) $p=0.0027$] as well as bone marrow involvement by lymphoma [21/77 (27.2%) vs 4/63 (6.3%) respectively, $p=0.0015$].

Conclusion: The similar lymphoma histologic subtypes, coupled with the differences in the frequency of cryoglobulinemic skin vasculitis and bone marrow involvement by lymphoma between Greek and Italian patients, suggest potential diversities in genetic background, environmental factors, disease progression and pathologic pathways in different cohorts, offering novel perspectives to study the biology of SS associated lymphomagenesis.

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SAT0191

LOW SOCIOECONOMIC STATUS AND HEALTH RELATED QUALITY OF LIFE IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Socioeconomic factors have been considered as possible confounding factors in the attribution of greater damage accrual in Afro-Caribbean and Hispanic patients with Systemic lupus erythematosus

(SLE). Patients with SLE often experience long-term morbidity that can adversely affect their health-related quality of life (HRQoL)¹

Objectives: To analyze the relation between socioeconomic status, damage accrual and HRQoL

Methods: Analytic study in a cohort of SLE patients that were closely monitored in an autoimmunity program in Colombia. We stratified patients with damage (SDI ≥ 1) and no damage (SDI <1) and according to socioeconomic status as a surrogate value for economic income with dichotomization in low and medium/high income. We performed a non-parametric analysis of related samples of Wilcoxon in each of the dimensions of quality of life in EuroQoL 5d

Results: We analyzed 400 Colombian patients. Baseline median age was 49 years (15 IQR) with median age at diagnosis and disease duration of 37 years (17 IQR) and 9 years (13 IQR) respectively. There were 94% female patients and 17.3% late onset SLE. Most frequent clinical manifestations were hematological (82.8%), mucocutaneous (75.3%) and nephritis (33.8%). Only 4.5% had neurological involvement. The mean SLEDAI were 1.18 and 0.65 at first and second measurement respectively, in the first measurement 97.1% of the patients had a SLEDAI ≤ 4 . The mean SDI was 0.7275 at first measurement and 0.985 at the second measurement. When comparing the intervention in patients with SDI ≥ 1 there was a significative improvement in the Quotidian Activities, Pain/Discomfort, Anxiety/Depression domains, independent of economic income. In patients with medium-high income there was also a significative improvement in the mobility and personal care domains. In the no-damage groups there was only a positive impact in the Anxiety/Depression domain in a statistically significant manner, and the medium-high income subgroup had improvement in the Pain/Discomfort domain. We didn't find other statistically differences in the other domains. Low economic income seems to exert a negative influence in the different HRQoL domains with independence regarding treatment strategy, specially in patients with no damage accrual. In patients with higher income and damage accrual the opposite seems to appear, which could be related with a better ability or resources to cope with the consequences of the disease

Conclusion: In Colombian patients with SLE, socioeconomic status (as a reflection of income) might be related with HRQoL. This relationship could be influenced by damage accrual

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	Damage present						Damage absent					
	Low incoming Initial (%)	Final (%)	p Value †	Mid -high incoming Initial (%)	Final (%)	p Value †	Low incoming Initial (%)	Final (%)	p Value †	Mid -high incoming Initial (%)	Final (%)	p Value †
Mobility	51	55	0,4	56,6	72,3	0,004	54,3	60,3	0,35	59,2	68	0,13
1	48	45		42,2	27,7		44,8	37,9		40,8	32	
2	1	0		1,2	0		0,9	1,7		0	0	
3												
Personal Care	72	76	0,35	73,5	84,3	0,016	72,4	76,7	0,5	78,8	79,8	0,85
1	27,1	23		24,1	15,7		26,7	21,6		21,2	20,2	
2	1	0		2,4	0		0,9	1,7		0	0	
3												
Quotidian Activities	51,5	67	0,005	59,8	73,2	0,03	60,3	62,9	0,7	65	68,9	0,5
1	44,3	33		36,6	25,6		38,8	31,9		34	30,1	
2	4,1	0		3,7	1,2		0,9	5,2		1	1	
3												
Pain/Discomfort	34	38,1	0,008	30,1	44,6	0,003	37,9	30,2	0,5	23,1	40,4	0,002
1	39,2	53,6		50,6	49,4		41,4	52,6		53,8	47,1	
2	26,8	8,2		19,3	6		20,7	17,2		23,1	12,5	
3												
Anxiety/Depression	51	70,8	0,001	61	79,3	0,001	51,3	66,4	0,01	53,9	73,5	0,001
1	32,3	22		26,8	18,3		35,4	27,4		32,4	23,5	
2	16,7	7,2		12,2	2,4		13,3	6,2		13,7	2,9	
3												

† Wilcoxon test