Results While the stimulation indices (SI) in the healthy control group ranged from 0.5 to 3.5 (mean SI: 1.5 ± 0.9), the proliferative response of PBMC of the patient group ranged from 0.7 to 17 with a mean SI of 4.8 ± 4.0 (only 6 of 34 patients had an SI < 2 ; $p < 0.00004$). The generated 30 TCC derived from SLE patients and 19 TCC from healthy controls did not reveal a significant difference in SI and produced either more IFN γ than IL4 or none of these cytokines at all, suggesting that these TCC were of T1 or T0, but not T2 phenotype. Interestingly though, while only 11% of healthy control patients showed a CD4-/CD8 $^{+}$ subtype and 16% displayed a CD4 $^{+}$ /CD8 $^{+}$ phenotype, 37% of TCC derived from SLE patients were CD4-/CD8 $^{+}$ (and 20% expressed CD4 as well as CD8).

Conclusion Our data reveal that more than 80% of SLE-patients have a significant T cell reactivity (SI > 2) to the nuclear protein hnRNP-A2/B1 indicating that the antibody response might be T cell driven. Furthermore, almost 60% of TCC derived from SLE patients were CD8 $^{+}$, which supports the importance of these T cells in SLE. Further studies will have to elucidate the pathogenetic implications of these findings.

FRI0087 ANAEMIA IN SYSTEMIC LUPUS ERYTHEMATOSUS

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Background Systemic lupus erythematosus (SLE) is accompanied by haematological abnormalities. A very common haematological abnormality observed in SLE is anaemia. It is well known that anaemia in SLE may have many causes, however no correlation has been performed between anaemia and the morphology of red blood cell precursors in the bone marrow in SLE.

Objectives The aim was to investigate the aetiology of anaemia in SLE by analysing blood, bone marrow aspirate and bone marrow biopsy findings.

Methods SLE patients were included in the study, $n = 17$, aged 40.9 ± 3.6 (range 18–36) years. None of the patients were taking any disease modifying agents and 11 were newly diagnosed and had never taken any treatment for SLE, duration of disease of the remaining being 5.7 ± 3.6 (range 1–23) years. In all patients antinuclear antibodies, anti-DNA antibodies and serum rheumatoid factor were measured. Haematocrit, haemoglobin, MCV, MCH, MCHC, serum iron, serum ferritin, serum iron-binding capacity, serum folate and vitamin B12 levels were also measured and indirect and direct Coombs' test was performed. In all patients a bone marrow aspirate was obtained and a bone marrow biopsy was performed.

Results In 17 SLE patients haemoglobin levels were 11.4 ± 0.4 g/dl (mean $\pm$ SEM), haematocrit $35.0 \pm 1.3\%$, MCV 88.9 ± 1.2 fl, MCH 29.0 ± 0.4 pg, MCHC $32.7 \pm 0.1\%$, serum iron levels 83.2 ± 7.2 μ g/dl, serum iron-binding capacity 359.0 ± 11.2 μ g/dl, ferritin levels 123.1 ± 65.3 μ g/dl, folate 6.4 ± 1.1 ng/ml and vitamin B12 levels 534.7 ± 79.4 pg/ml. In 10 of 17 patients with SLE haemoglobin levels were 12 g/dl, hyperplasia of red blood cell precursors was noted in all of them, megaloblastoid alterations in 3 and blasts of the red cell series in 2 patients. No correlation was observed between the presence or absence of anaemia and the dysplastic alterations in the red blood cell precursors in the bone marrow in the SLE patients studied.

Conclusion The aetiology of anaemia in SLE patients seems to be multifactorial. Dysplastic alterations in red blood cell precursors was noted in all the groups of SLE patients, irrespective of the presence of anaemia, indicating either a primary defect of the stem cell in the bone marrow in SLE which is implicated in the pathogenesis of the disease or that inflammatory cytokines may affect the microenvironment of the bone marrow.

FRI0088 POLY(ADP-RIBOSE) POLYMERASE (PARP) POLYMORPHISM IN SPANISH SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) PATIENTS

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Background PARP is a DNA-binding protein that catalyses the covalent addition of ADP-ribose to many nuclear proteins. It is involved in DNA repair and apoptosis, processes that have been implicated as causative factors for SLE. It has been shown that patients suffering SLE have decreased PARP mRNA levels and a low enzyme activity. The PARP gene is located at 1q41-q42 and contains a microsatellite (CA) $_n$ polymorphism in the promoter region that probably affects the transcription and mRNA levels. A recent study found preferential transmission of the allele containing 12 CA repeats to affected offspring in Caucasian SLE families.

Objectives To investigate the association between PARP polymorphism and SLE susceptibility in Spaniards.

Methods 76 unrelated SLE patients from Canary Islands (Spain) fulfilling at least four of the ACR criteria and 79 sex-matched healthy donors were included. A segment of the PARP gene containing the microsatellite was amplified by PCR and the resulting products were electrophoresed in denaturing polyacrilamide gels. Chi-square test was used for statistical analysis.

Results Allelic distributions of PARP polymorphism showed no statistical differences between SLE patients and controls. But considering particular clinical features we found several associations with specific alleles: a) homozygotes for 11rep. allele suffered more lymphopenia ($p = 0.04$) but less hypocomplementemia ($p = 0.03$), b) autoantibodies anti-Ro/La were more frequent ($p = 0.02$) in carriers of 15rep., c) carriers of 16rep. allele presented more malar rash ($p = 0.03$) and seizures ($p = 0.04$), and finally d) carriers of 17rep. allele showed a reduced risk of production of several autoantibodies as anti-Sm ($p = 0.007$) and anti-Ro/La ($p = 0.04$).

Conclusion Although PARP alleles seem not to influence susceptibility to SLE in Spaniards, some of them may be related to the presence of several clinical and analytical manifestations of the disease.

FRI0089 IL10G PROMOTER POLYMORPHISM OF THE INTERLEUKIN 10 (IL10) IN SPANISH SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) PATIENTS

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Background IL10 is a pleiotrophic cytokine that inhibits the antigen specific activation of Th1 clones by reducing both the antigen presenting capacity and the production of pro-inflammatory cytokines by monocytes. It is also a potent activation and differentiation factor for B lymphocytes. SLE patients show increased IL10 serum levels associated with the pathogenesis of the disease. Peripheral blood mononuclear cells from SLE patients, and their relatives, constitutively produce high levels of the cytokine, suggesting an hereditary component in IL10 production. Anti-IL10 antibodies administration to SLE patients may be beneficial in the management of refractory cases. The IL10 gene promoter contains two dinucleotide repeats (microsatellites): IL10G and IL10R, close to transcription factor binding sites, probably playing an important role in the transcription regulation.

Objectives To evaluate the association of the IL10G microsatellite with SLE in Spanish patients.

Methods 80 unrelated SLE patients from Canary Islands (Spain) fulfilling at least four of the ACR criteria and 79 sex-matched healthy donors were included. A segment of the IL10 gene containing the microsatellite was amplified by PCR and the resulting products were electrophoresed in denaturing polyacrilamide gels. Chi-square test was used for statistical analysis.

Results No particular IL10G allele was found to be significantly associated with SLE. Nevertheless, we found an elevated risk of serositis in carriers of the allele 19 ($p = 0.007$), a significant association of the 19/23 genotype with seizures ($p = 0.018$), and a reduced risk of renal disorder ($p = 0.047$) and thrombocytopenia ($p = 0.049$) in carriers of the allele 23.

Conclusion Although IL10G alleles seem not to influence susceptibility to SLE in Spaniards, some of them may be related to the presence of several clinical manifestations of the disease.

FRI0090 THE PRESENCE OF MICROCHIMERISM IN SYSTEMIC LUPUS ERYTHEMATOSUS: PRELIMINARY DATA

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Background The development of microchimerism after solid organ transplantation, but also after blood transfusions and during pregnancy, is no longer considered controversial. Controversy still exists on the immunological significance of this phenomenon, such for example its role on the development of tolerance to the graft, or of some autoimmune conditions such as scleroderma (SSc). In this respect several studies have showed the presence of fetal cells not only in the peripheral blood but also in the skin of SSc patients. These observations, along with epidemiological (female prevalence, onset after childbearing years) and clinical (similarities with chronic graft versus host disease) data, have led to the hypothesis that microchimerism may play a role in the aetiopathogenesis of this disease.

Objectives The aim of our study was to evaluate the prevalence of microchimerism in a population of SLE patients in comparison with SSc patients followed at our Unit.

Methods Anticoagulated peripheral blood was obtained from 22 female patients (13 SLE and 9 SSc) who had a previous male pregnancy followed at our Unit. Genomic DNA was isolated from anticoagulated blood using a DNA extraction kit. A specific Y-chromosome sequence was detected by amplifying DNA in a nested-polymerase chain reaction (PCR) using published primers.

Results Microchimerism was present in 62% of SLE patients and 89% of patients with SSc, the mean time interval between the pregnancy and the analysis was of 27 years and no significative differences were observed between positive and negative patients. In all scleroderma patients the pregnancy occurred before the onset of the disease (onset of Raynaud's phenomenon). In SLE patients 38% of the pregnancies occurred before the onset of the disease, and 62% after the onset of the disease, however no differences in the development of microchimerism were observed.

Conclusion Since the literature data report a prevalence of 33% of microchimerism in healthy controls, these preliminary data may suggest that microchimerism develops more easily in patients with various autoimmune conditions. Further studies on extended populations of CTD patients and healthy controls appear necessary, in order to look for permissive factors for its development, such for example immunosuppressive therapy or immunological abnormalities.

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FRI0091 ANGIOGENESIS IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) AND PRIMARY ANTIPHOSPHOLIPID SYNDROME (PAPS)

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Background Angiogenesis is an essential process of the body's physiology and plays a role in several diseases such as rheumatoid arthritis, neoplasias or atherosclerosis. Vascular endothelial growth factor (VEGF) and angiogenin (Ang) are factors that promote angiogenesis *in vitro* and *in vivo*. However, new vessels formation seems limited to tissues with some degree of inflammation or with hypoxia. SLE and PAPS are characterised by endothelial damage and the mechanisms of angiogenesis have not been explored in these diseases.

Objectives In this study we determine the possible role of VEGF and Ang in the pathogenesis of SLE and PAPS.

Methods We included 28 SLE patients, 10 PAPS patients and 24 matched controls. VEGF and Ang plasma levels were measured by ELISA.

Results The VEGF plasma levels were significantly increased in SLE patients compared with PAPS patients and controls, $p < 0.01$. The Ang levels were similar in the three groups. No correlation between VEGF levels and clinical manifestations was found.

Abstract FRI0091 Table 1

	Gender (F/M)	Age (years)	VEGF (pg/ml) (median/range)
SLE Group	24/4	36.6 ± 16.1	70.25 (4.69-341.2)
PAPS Group	8/2	36.2 ± 8.0	34.1 (6.91-83.78)
Control	19/5	29.2 ± 8.5	23.48 (0-307.4)