and placebo (3 times daily), for 3 months. Anti-ds DNA serum levels were measured by ELISA and urine protein were measured by urine albumin creatinine ratio (UACR).

**Results** After supplementation for 3 months, this study showed that decreased of anti-dsDNA serum levels in the supplementation group was significantly greater than in the placebo group. The decreased of UACR in the supplementation group was also significantly greater than the placebo group.

**Conclusions** Adding curcumin on vitamin D supplementation can decrease anti-dsDNA serum levels and proteinuria greater than vitamin D supplementation plus placebo in SLE patients with hipovitamin D.

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THE EFFECT OF ADDING CURCUMIN ON VITAMIN D3 SUPPLEMENTATION ON CYTOKINES BALANCE, IN SLE PATIENTS WITH HIPOVITAMIN D

1CS Wahono*, 1I Saveria, 1CD Setyorini, 2D Wahyuni, 3K Hardono, 1H Kalim. 1Universitas Brawijaya/Saiful Anwar Hospital, Internal Medicine, Malang, Indonesia; 2Universitas Brawijaya/Saiful Anwar Hospital, Clinical Pathology, Malang, Indonesia

**Background and aims** Vitamin D has important roles in the regulation of the immune system in Lupus. Seventy percent of lupus patients in Indonesia are experienced hipovitamin D. Curcumin is a natural VDR ligand and has sinergic effect regulation of the immune system in Lupus. Seventy percent of lupus patients in Indonesia experienced hypovitamin D. This study was aimed to determined the effect of adding curcumin on vitamin D supplementation on IFN-γ/IL-4 ratio and IL-17/TGF-β ratio, in SLE patients with hipovitamin D.

**Methods** This was a randomised controlled trial, double blind study. Forty SLE patients with hipovitamin D were studied, that randomised into two groups: 20 patients (supplementation group) received vitamin D (cholecalciferol 1200 IU daily) with curcumin 20 mg (three times daily); and 20 patients (placebo group) was given vitamin D (cholecalciferol 1200 IU daily) and placebo (3 times daily), for 3 months. Cytokines serum levels (IFN-γ, IL-4, IL-17, TGF-β) were measured by ELISA.

**Results** After supplementation for 3 months, this study showed that decreased of IFN-γ/IL-4 ratio in the supplementation group was significantly greater than in the placebo group. The decreased of IL-17/TGF-β ratio in the supplementation group was also significantly greater than the placebo group.

**Conclusions** Adding curcumin on vitamin D supplementation can decrease IFN-γ/IL-4 ratio and IL-17/TGF-β ratio than vitamin D supplementation plus placebo in SLE patients with hipovitamin D.

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THE EFFECT OF VITAMIN D3 SUPPLEMENTATION ON THE ANTI-DSDNA LEVELS AND URINE PROTEIN IN SLE PATIENTS WITH HIPOVITAMIN D

1H Susianti, 1CS Wahono, 1ST Priyantoro, 1K Hardono, 1H Kalim. 1Faculty of Medicine Brawijaya University/Dr. Saiful Anwar General Hospital, Clinical Pathology, Malang, Indonesia; 2Faculty of Medicine Brawijaya University/Dr. Saiful Anwar General Hospital, Internal Medicine, Malang, Indonesia

**Background and aims** Vitamin D has important role in the regulation of the immune system in Lupus. 71% of lupus patients in Indonesia experienced hypovitamin D. This study was aimed to determined the effect of vitamin D supplementation on the levels of anti ds dna and degree of urine protein in lupus patients with hypovitamin D.

**Methods** Thirty nine SLE patients with hypovitamin D were studied, that randomized into two groups: 20 patients was given vitamin D and 19 patients received placebo for 3 months. Anti-ds DNA levels were measured by ELISA and urine protein were measured by dipstick method.

**Results** Anti-dsDNA levels in the supplement group before and after giving vitamin D were 226.84±82.11 vs 191±72.55 (p=0.00), and the placebo group were 233.69±66.52 vs 227.72±61.21 (p=0.077). The decrease of urine protein in the supplement group before and after treatment were 24 vs 12 U/ml (p=0.003) and the placebo group were 16 vs 10 U/ml (p=0.070).

**Conclusions** Vitamin D supplementation plays a role on decreasing the levels of anti ds-DNA and urine protein in SLE patients with hypovitamin D.

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THE EFFECT OF VITAMIN D3 SUPPLEMENTATION ON THE DISEASE ACTIVITIES AND DEGREE OF FATIGUE IN SLE PATIENTS WITH HIPOVITAMIN D

1CS Wahono*, 1H Susianti, 1A Rifai, 3K Hardono, 1H Kalim. 1Faculty of Medicine Brawijaya University/Dr. Saiful Anwar General Hospital, Internal Medicine, Malang, Indonesia; 2Faculty of Medicine Brawijaya University/Dr. Saiful Anwar General Hospital, Clinical Pathology, Malang, Indonesia

**Background and aims** Vitamin D has important roles in the regulation of the immune system in Lupus. 71% of lupus patients experienced hypovitamin D in Indonesia.. This study was aimed to determined the effect of vitamin D supplementation on the degree of disease activity and degree of fatigue in SLE patients with hypovitamin D.

**Methods** Thirty nine SLE patients with hypovitamin D were studied, that randomised into two groups: 20 patients was given vitamin D and 19 patients received placebo for 3 months. Disease activity is determined by the SLEDAI scores and the degree of fatigue is determined by the FSS (Fatigue Severity Scale).

**Results** This study showed that supplementation of vitamin D 1200 IU per day increased 6.55±1.27 ng/cc of 25 (OH) D. The decreased of SLEDAI scores in the supplementation group were greater than the placebo group (6.45±3.07 vs 0.17±1.63), p=0.000. The decreased of Fatigue Severity Scale in the supplementation group also greater than the placebo group (2.27±0.73 vs 0.005±0.62), p=0.000.

**Conclusions** Vitamin D supplementation plays a role on improving the activity of the disease (SLEDAI score) and the condition of fatigue (FSS) in SLE patients with hypovitamin D.

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LONG-TERM EFFECTS OF OXYCHLOROQUINE ON METABOLISM OF SERUM LIPIDS AND LEFT VENTRICULAR STRUCTURE AND FUNCTION IN PATIENTS OF SYSTEMIC LUPUS ERYTHEMATOSUS

1J Meng. 1Beijing Chao-Yang Hospital- Capital Medical University, Department of Rheumatology and Immunology, Beijing, China

**Background and aims** Vitamin D has important roles in the regulation of the immune system in Lupus. Seventy one percent of lupus patients in Indonesia experienced hypovitamin D. This study was aimed to determined the effect of vitamin D.
Background and aims To observe the effects of long term hydroxychloroquine treatment on blood lipid and left ventricular function of systemic lupus erythematosus (SLE) patients.

Methods 72 patients with SLE were randomly divided into two groups: Hydroxychloroquine treatment group (n=36) and non-hydroxychloroquine group (n=36). The level of blood lipid, left ventricular end-diastolic diameter (LVEDD), left ventricular end-systolic diameter (LVESD), interventricular septum thickness (IVST), left ventricular posterior wall thickness (LVPWT), fractional shortening rate (FS), left ventricular ejection fraction (LVEF), E/A were measured before, 6 month, 12 month and 2 years after the treatment.

Results The long term applies of hydroxychloroquine can bring statistically different of TC, TG, LDL and HDL to SLE patients. LVEDD, LVWPT and E/A were statistically different (p<0.05) before and after hydroxychloroquine were used.

Conclusions The long term application of hydroxychloroquine can improve the lipidic metabolism and left ventricular function in SLE patients.

Genetics, epigenetics, omics, biomarkers and personalised medicine in SLE and autoimmunity

A Aljaser, N Almutairi, M AlShaikh,  S AlMayouf* King Faisal Specialist Hospital and Research Centre, Pediatric Rheumatology, Riyadh, Saudi Arabia

Abstracts

Utility of Serum Ferritin as a Marker of Disease Activity in Childhood Systemic Lupus Erythematosus

A Aljaser, N Almutairi, M AlShaikh, S AlMayouf* King Faisal Specialist Hospital and Research Centre, Paediatric Rheumatology, Riyadh, Saudi Arabia

Background and aims To assess the usefulness of serum ferritin levels as a marker of disease activity and organ involvement in childhood systemic lupus erythematosus (cSLE) and to screen children with SLE for subclinical macrophage activation syndrome.

Methods Consecutive children who met the criteria of SLICC were enrolled. All patients interviewed and assessed for disease activity using SLE disease activity index (SLEDAI). Biochemical and serological tests including serum ferritin level and markers of disease activity and macrophage activation syndrome (MAS) including LDH, AST, triglyceride and CD25 were measured by standard laboratory procedure.

Results A total of 29 (24 female) SLE patients with a mean age of 10.9 (± 2.9) years and mean of disease duration of 4 (± 2.4) years were included. The most frequent manifestations were musculoskeletal in 25 patients followed by haematological in 15 then renal involvement in 13 patients. Twenty patients had active disease (SLEDAI >4). Serum ferritin level was correlated significantly with SLEDAI (p<0.0001) and markers of MAS (LDH, AST, triglyceride and CD25) and negative correlation with fibrinogen (p = 0.02). Interestingly, serum ferritin was weakly correlated with CRP but no correlation with CRP and proteinuria. Two patients confirmed to have MAS.

Conclusions Serum ferritin is a simple and probably a good marker of disease activity and screening for MAS in cSLE.