



# **Enthesal Involvement in Patients with Systemic Lupus Erythematosus**

*Thesis*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سببنا انك لا تعلم لنا  
إلا ما علمتنا إنك أنت  
العليم العظيم

صدق الله العظيم

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## *List of Abbreviations*

| Abb.           | Full term                                  |
|----------------|--|
| 24-h ptn ..... | 24-hours urinary proteins                  |
| ACL.....       | Anti cardiolipin                           |
| ACR .....      | American college of Rheumatology           |
| Alb.....       | Albumin                                    |
| ALT .....      | Alanine transaminase                       |
| ANA .....      | Antinuclear Antibody                       |
| Anti-CCP ..... | Anti-cyclic citrullinated peptide          |
| APS .....      | antiphospholipid syndrome                  |
| AS.....        | Ankylosing spondylitis                     |
| AST .....      | Aspartate transaminase                     |
| AZA.....       | Azathioprine                               |
| BD .....       | Behcet disease                             |
| BILAG.....     | British Isles Lupus Assessment Group Scale |
| BMI.....       | Body mass index                            |
| BON .....      | Blood Urea nitrogen                        |
| BUN .....      | Blood urea nitrogen                        |
| CBC.....       | complete blood count                       |
| CBC.....       | Complete blood count                       |
| CMV .....      | C virus, Cytomegalovirus                   |
| creat. ....    | Creatinine                                 |
| CRP.....       | C-reactive protein                         |
| CRP.....       | C-reactive protein.                        |
| CT .....       | Computed tomography                        |
| CYC.....       | Cyclophosphamide                           |
| DHEA .....     | Dehydro- epiandrosterone                   |
| DMARDs.....    | Disease modified anti-rheumatology         |
| DNA .....      | Deoxyribonucleic acid                      |
| dsDNA .....    | Double stranded deoxyribonucleic acid      |
| EBV.....       | Epstein-Barr virus                         |

## *List of Abbreviations Cont...*

| Abb.         | Full term                                 |
|--------------|---|
| ECLAM.....   | European Consensus Lupus Activity Measure |
| ESR.....     | Erythrocyte sedimentation rate.           |
| EULAR .....  | European League Against Rheumatism        |
| FDA.....     | Food and drug administration              |
| GI .....     | Gastrointestinal                          |
| GLOESS ..... | Global Synovitis Score                    |
| GS .....     | gre scale                                 |
| GUESS.....   | Glasgow US Enthesitis Scoring System      |
| Hb .....     | Hemoglobin                                |
| HCQ.....     | Hydroxychloroquine                        |
| HDL .....    | High density lipoprotein                  |
| HLA .....    | Human leukocyte antigen                   |
| HS .....     | Highly significant                        |
| IPO.....     | Intestinal pseudo-obstruction             |
| IQR.....     | Intra-quartile range                      |
| JA.....      | Jaccoud's arthropathy                     |
| LAC.....     | Lupus anticoagulant                       |
| LDL.....     | Low density lipoprotein                   |
| LN .....     | Lupus nephritis                           |
| LR .....     | Likelihood ratio                          |
| Lt.....      | Left                                      |
| MASEI .....  | Madrid Sonographic Enthesis Index         |
| MCP .....    | Metacarpophalangeal                       |
| MH2 .....    | Mega hert 2                               |
| MMF .....    | Mycophenolate mofetil                     |
| MS.....      | Musculoskeletal                           |
| MSUS.....    | Musculoskeletal Ultrasound                |
| MTP .....    | Metatarsophalangeal                       |
| NDNE .....   | Non-deforming non-erosive                 |

## *List of Abbreviations Cont...*

| Abb.               | Full term   |
|--------------------|---|
| NPSLE.....         | Neuropsychiatric lupus'   |
| NS .....           | Non significant   |
| NSAIDs.....        | non steroidal anti-inflammatory drugs                             |
| OMERACT .....      | Outcome Measures in Rheumatology                                  |
| ON .....           | Osteonecrosis   |
| PD.....            | Power Doppler   |
| PIP .....          | Proximal inter-pralengeal   |
| Plt .....          | Platelet  |
| RA .....           | Rheumatoid arthritis  |
| RBC.....           | Red cell count. Hb: hemoglobin.                                   |
| RF .....           | Rheumatoid factor   |
| ROC .....          | Receiving operating characteristic                                |
| Rt .....           | Right   |
| S .....            | Significant   |
| SC.....            | Subcutaneous  |
| SCLE.....          | Subacute cutaneous lupus erythematosus                            |
| SCUSSE.....        | scoring ultrasound structural evasion                             |
| SD .....           | Standard deviation  |
| SEL .....          | Systemic lupus erythematosus                                      |
| SELENA .....       | Safety of Estrogens in Lupus Erythematosus<br>National Assessment |
| SH .....           | Synovial hypertrophy  |
| SLAM.....          | Systemic Lupus Activity Measure                                   |
| SLEDAI .....       | SLE Disease Activity Index  |
| SLICC .....        | Systemic Lupus International Collaborating<br>Clinics             |
| SPA .....          | Spondyloarthropathy   |
| SQ .....           | semiquantitative  |
| T –and D Bil ..... | Total and direct bilirubin  |

## *List of Abbreviations Cont...*

| Abb.          | Full term                 |
|---------------|---------------------------|
| T. Chol ..... | Total cholesterol         |
| TGs.....      | Triglycerides             |
| Tlc .....     | Total leukocytic count    |
| US .....      | Ultrasound                |
| UV .....      | Ultraviolet               |
| WHO .....     | World Health organization |

## INTRODUCTION

**S**ystemic lupus erythematosus (SLE) is a chronic inflammatory autoimmune disease characterized by a vast heterogeneity of clinical manifestations due to the wide variety of organ involvement. The musculoskeletal system is one of the most commonly affected in SLE. It is usually involved early in the course of the disease (*Alyoussef et al, 2016*). Articular pain representing the initial symptom in more than 50% of patients (*Alsowaida et al., 2018*). Both large and small joints may be affected with the hands, wrists and knees described as the most frequently involved sites (*Ceccarelli et al., 2017*). The arthropathy of SLE has a considerable clinical variability. It can range from mild arthralgias without erosions or deformities to a deforming non-erosive arthritis (Jaccoud's arthritis), or an erosive symmetric polyarthritis resembling rheumatoid arthritis (rheupus arthropathy) (*Messuti et al., 2014*).

As well as arthritis and arthralgia, musculoskeletal pathological features of SLE include osteonecrosis, myositis, tendinitis, tenosynovitis and tendon ruptures. Enteseal involvement appears to be largely ignored in SLE without any mention in most textbooks or in reviews (*Dvorkinar and Ginzler, 2015*).

In recent years, musculoskeletal ultrasound (MSUS) has become an important tool for the rheumatologists for the evaluation of patients with inflammatory arthritis. A growing

body of evidence is emerging regarding the capacity of MSUS to detect subclinical inflammation at the joint, tendon and enthesal level. This was initially demonstrated in rheumatoid arthritis and, more recently, in psoriatic arthritis and seronegative spondyloarthropathies (*Gutierrez et al., 2010*).

## **AIM OF THE STUDY**

**T**o investigate the prevalence and distribution of enthesal involvement in SLE patients and correlating it with parameters of disease activity.