Significance of Lupus Band Test in Libyan Patients with Systemic Lupus Erythematosus

This thesis is submitted to the dermatology department - Benghazi University in partial fulfillment of requirement for the degree of Master (MSC) in dermatology and Venerology.

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CERTIFICATION

This thesis entitled " Significance of Lupus Band Test in Libyan patients with Systemic Lupus Erythematosus " *prepared by Abdelbasit M.M. Elghriani, under supervision of Dr. Ibrahim Almukahal, has been approved for submission to the dermatology department / Benghazi university – Libya, as partial fulfillment for the certification of Master in Dermatology and Venerology.*

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DECLARATION

This to declare that I have not submitted the research work embodied in this thesis "SIGNIFICANCE *OF LUPUS BAND TEST IN LIBYAN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS*" to any other university before.

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I sincerely dedicate this work to my loved family (my wife ,my sons, my little daughter) and to the souls of my parents.

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1. summary

Introduction: Systemic Lupus Erythematosus (SLE) is a serious autoimmune multisystem chronic disease. Main features are production of various auto antibodies, low complement level and presence of circulating immune complexes.

Lupus band test is a direct immunofluoresence technique for demonstrating a band of immunoglobulins and complement at the dermo-epidermal junction of the skin in patient with lupus erythematosus .

Aim of the study: to confirm if LBT is in positive correlation with the SLE disease activity measured by the SLEDAI and if LBT is in positive correlation with the level of anti$-ds-$DNA anti bodies.

Material: 30 SLE patients from the dermatology department and rheumatology department at ALjomhoria hospital – Benghazi-Libya were included in a single center open uncontrolled prospective clinical study.

Method: In each patient we performed a biopsy of clinically healthy skin from flexure aspect of forearm or buttock and examined with classic DIF technique.

Results : Positive LBT test in patient suffering from SLE could identify more sever disease activity and negative LBT is associated with mild disease activity.

Number of IR detected in the BMZ is in direct positive correlation with SLE disease activity.

Positive LBT could identify higher anti ds-DNA ab titer and negative LBT in SLE patients is associated with lower anti ds-DNA titer.

Number of IR detected in LBT in SLE patients do not correlate with the anti ds-DNA antibodies titer.

2. INTRODUCTION

Systemic lupus erythematosus (SLE) is a serious autoimmune, multisystem, chronic disease. Main features are: production of various auto antibodies, low complement level, and presence of circulating immune complexes (1). Clinical manifestations of this disorder can be considered on a continuum ranging from minor skin-limited lesions to life threatening vital organ dysfunction. (2, 3, 4).

SLE most often harms the heart, joints, skin, lungs, blood vessels, liver, kidneys and nervous system.

The course of the disease is unpredictable, with periods of illness (called flares) alternating with remissions. The disease occurs nine times more often in women than in men, especially in women in child-bearing years ages 15 to 35. (5).

Common initial and chronic complaints include fever, malaise, joint pains, myalgias, fatigue and temporary loss of cognitive abilities. Because they are so often seen with other diseases, these signs and symptoms are not part of the diagnostic criteria for SLE. When occurring in conjunction with other signs and symptoms, however, they are considered suggestive. (6).

Skin manifestations are common in SLE and variable including specific

and non-specific skin lesions, such as butterfly rash, facial edema, sub acute cutaneous lupus erythematosus, chronic discoid lupus erythematosus, scarring alopecia, non-scarring alopecia, chilblain lupus, mouth ulceration, bullous eruption, photosensitivity, Reynaud's phenomenon, chronic urticaria, cutaneous vasculitis and cheilitis.(7,8,9).

Diagnostic tests for SLE including skin biopsy, immunofluoresence studies as lupus band test, immunological and hematological studies may be necessary to confirm the diagnosis or rule out other causes of erythema or photosensitivity before therapy is initiated.

ARA (American Rheumatism Association) / ACR (American College of Rheumatology) criteria for SLE diagnosis, revised in the year 1997 including: malar rash, discoid lesions, photosensitivity, mouth ulceration, arthritis. Serositis, renal disorder, neurological disorder, immunology disturbance, antinuclear antibody and hematological disorder.

(4+ is diagnostic for SLE).

This criteria does not include lupus band test (LBT).

The European Academy of Dermatology and Venerology (EADV) criteria included a positive LBT and: malar rash, arthritis, renal disorder, neurologic disorder, immunologic disorder, antinuclear antibody, vasculitis on the fingers, muscle weakness, high ESR, anti-SSA and/or –SSB.(10).

Skin manifestations : the cutaneous changes occupy a prominent position

within ACR diagnostic criteria including specific skin lesions

(DLE, mucous membrane lesions, malar rash and photosensitivity).

However there are numerous nonspecific lesions including various types of

vasculitis, urticaria, Reynauld phenomenon, thrombophlebitis, alopecia and

others.

Treatment is aimed to maintain optimal function with the minimum

of therapy.

Systemic corticosteroids are required in the acute cases. Prednisolone is the

steroid of choice.(11). In mild cases, the administration of chloroquine or

hydroxychloroquine may allow the dose of steroids to be reduced.(12) .

Immunosuppressive drugs have been used for patients not responding to

corticosteroids, but their value remains unproven. (13).

Oral methotrexate ,Cyclophosphamide , azathioprine , all these modalities

were used with variable consideration in treating patients

with SLE.(14,15,16).

Plasmapheresis may be helpful in a small number of patients with

a high level of immune complexes whose condition is deteriorating despite

other therapy, or in cases with life-threaten complications such as

fulminating vasculitis.(17,18).

Exposure to sunlight should be avoided and a high SPF sunscreen

lotion should be used.

3. REVIEW OF LITERATURE

3.1. HISTORICAL BACKGROUND

The history of Lupus Erythematosus (LE) can be divided into three periods: classical, neoclassical, and modern.

The classical period began when the disease was first recognized in the middle ages. The term lupus is attributed to the 12th century physician Rogerius, who used to describe the classical malar rash, (19).

The first clear description of lupus erythematosus was by Biett and was reported by his student Cazenave under the term erythema centrifugum in 1833.

In 1851 Cazenave renamed erythema centrifugum calling it lupus erythematosus and gave a classical description of discoid lupus erythematosus. In 1872 Kaposi subdivided lupus into the discoid and systemic forms and introduced the concept of systemic disease with a potentially fatal outcome. (20,21).

3.2. EPIDIMIOLOGY

3.2.1. INCIDENCE AND PREVALENCE

The rate of SLE varies considerably between countries, ethnicity, gender, and changes over time. (22). In the United States the prevalence of SLE is estimated to be about 53 per100.000, translating to about 159.000 out of 300 million people in the United States being affected. (22) In the Northern Europe the rate is about 40 per 100.000 people. (23). SLE occurs more

frequently and with grater severity among those of non-European descent. (22). The rate has been found to be as high as 159 per 100.000 among those of Africo-Caribean descant.

3.2.2. AGE OF ONSET AND SEX RATIO

Worldwide, the prevalence of SLE appears to vary by race.

However, because of different prevalence rates among people of the same race in different geographical locations, a clearconclusion cannot yet be drown.

The contrast between low reported rates of SLE in Africa and high rates among black women in the United Kingdom suggests importance influences.(24).

Black women have a higher rate of SLE than any other race, followed by Asians, then white women. (25). In the United States, black women are 4 times more likely to have SLE than white women. (25). SLE frequently starts in women of childbearing age, and the use of exogenous hormones has been associated with lupus onset and flares, suggesting a role for hormonal factors in the pathogenesis of the disease. (26).

The risk of SLE development in men is similar to that in prepupertal or postmenopausal women.

For all ages, the female-to-male ratio is 7:1 and 11:1 during the childbearing years. (27). A correlation between age and incidence of SLE mirrors peak of female sex hormone production.

 Onset of SLE is usually after puberty, typically in the 20s and 30s, with 20% of all cases diagnosed during the first two decades of life. (28). The prevalence of SLE is highest among women aged 14-64 years.SLE does not have an age predilection in males.

3.3. ETIOLOGY

The etiology of SLE remains unknown. Although the specific cause of SLE is unknown, multiple genetic predisposition and gene-environment interactions have been identified. This complex situation perhaps explains the variable clinical manifestations in persons with SLE.

3.3.1. GENETIC FACTORS.

There is a considerable evidence to suggest that genetic factors play a part in the pathogenesis of SLE. (29). Some studies have synthesized what is known about mechanisms of SLE disease and genetic associations.. More than 10 gene loci are known to increase the risk of SLE. A genetic predisposition is supported by the 25% concordance among monozygotic twins versus 2% in dizygotic twins. Five to twelve percent of relatives of patients with SLE have the disease.(30). If a mother has SLE, her daughter's risk of developing the disease is 1:40, and her son's risk is 1:250.

Studies of human leukocyte antigens (HLA) reveal that HLA-A1, B8, and DR3 are more common in persons with SLE than in the general population. The presence of the null complement alleles and congenital deficiencies of complement (especially C4, C2, and other early components) are also associated with an increased risk

of SLE. Genetic factors other than HLA and complement component deficiencies may also be involved(31).

3.3.2. AUTO ANTIBODIES

Non-organ-specific humoral auto-antibodies are the hallmark of SLE. A range of auto-antibodies may be present in the disease, although some are more disease specific (anti-double-stranded DNA and anti-Sm antibodies), and some are much more commonly found (antinuclear anti-Ro antibodies). The disease could be produced by the development of such antibodies against tissue antigens to which tolerance has been lost by failure of homeostatic immunological mechanisms. This could occur either because of polyclonal B-cell activation or specific antigenic drive. There is evidence for both mechanisms of production of auto antibodies. (32).

Impaired cell-mediated immunity in SLE has been demonstrated by a variety of techniques. It would appear that there is an imbalance between T and B lymphocytes in the disease, with depressed cellular immunity and an overactive humoral antibody response, possibly related to a relative lack of suppressor and/or inducer T cells (33) although all T-cell types are reduced, and their function is impaired (34).Antibody-dependent cellular cytotoxicity may be another pathogenic factor, and antibodies

directed against lymphocyte membranes are found in SLE. Serum-induced cytotoxicity occurs to both T cells (35) and human target cells and immune complexes may be implicated (36).

Circulating immune complexes occur in approximately half of patients, especially those with active and extensive disease (37). Lymphocytotoxins can be demonstrated in approximately one-third of cases and Killer cell activity is increased (38).

3.3.4. ULTRAVIOLET RADIATION

This may precipitate the onset or exacerbate the course of SLE in up to 60% of patients (39). Photo-testing to UVB and UVA shows reduced minimal erythema doses and the development of skin lesions in patients with LE.(40,41). The mechanism of action of UV radiation in SLE remains unknown, although antibodies to UV radiation-denatured DNA can be demonstrated.

There is no defect of DNA repair in SLE , and the antibodies to denatured DNA have no clinical or immunological correlations (42).

The expression of Ro antibody can be induced on cultured keratinocytes by UV radiation (43), and this antibody is commonly found in photosensitive patients. However, there is no relationship between absolute levels of Ro antibodies and disease activity (44).

Fibroblasts and lymphocytes from patients with SLE are abnormally sensitive to UVA and UVB exposure (45).

3.3.5. INFECTIONS, STRESS AND HORMONAL FACTORS

Other factors may precipitate the onset of SLE, and these include bacterial infection and mental or physical stress.

A role for antigens derived from infecting organisms in the generation of anti-idiotype antigens (46) has been suggested, and microbial super antigens may stimulate abnormal T- and B-cell interactions, resulting in the state of autoimmunity found in SLE (47).

Infection is more common in SLE than in those not affected, and depressed generation of serum chemo-tactic factors may contribute to this increase (48). Initial phagocytosis by polymorph nuclear neutrophils and macrophages is reduced (49).

As markedly more females than males are affected in early adult life, it has been suggested that endocrine factors may be involved (50). In addition, 20% of female patients have premenstrual flares of skin disease, and a small number present after initiation of estrogen-containing contraceptive therapy (51). Levels of circulating androgens are reduced in women with SLE compared with normal controls (52), and men with SLE have reduced testosterone levels (53), indeed

hypogonadism from whatever cause may be an etiological factor in SLE (54).

A late menarche is associated with an increased risk of SLE in Japanese patients (55).

There is some evidence that neuroendocrine factors play a part in immunity, which could to some extent explain the influence of stress factors in the disease (56).

3.3.6. DRUGS

The precipitation of SLE by drugs (57), especially the antihypertensive hydralazine, is well known.

Hydralazine is known to inhibit binding of complement component C4, and this action, with subsequent lack of control of complement activity, may explain the development of lupus-like syndromes. Cutaneous involvement in drug-induced SLE may be vasculitic , bullous , erythema multiforme-like , or resemble pyoderma gangrenosum (58,59,60).

It was thought that the clinical manifestations of drug-induced lupus resolved when the drug was withdrawn, but this is not necessarily so, and patients with hydralazine-induced syndromes may have hyperglobulinaemia and other abnormalities before the administration of hydralazine (61,62).

3.4. CLINICAL MANIFESTATIONS

Clinical findings vary greatly. SLE may develop abruptly with fever or insidiously over months or years with episodes of arthralgias and malaise. Vascular headaches, epilepsy, or psychoses may be initial findings. Manifestations referable to any organ system may appear. Periodic exacerbations (flares) may occur.

3.4.1. SKIN

Approximately 80% of cases have a rash at some stage, and in up to 25% it is the presenting sign . The prevalence varies between series (63,64).The cutaneous changes may be broadly divided between: (i) those specific for LE, and showing the characteristic histopathological appearances of LE; and (ii) those that are less specific in their origin and not showing LE histological changes.

Specific changes: Cutaneous erythema is the most common feature, particularly on light-exposed areas . A butterfly flush or discrete maculopapular eruption with fine scaling on the butterfly area of the cheeks or elsewhere is also frequently found. Edema, especially of the face, may resemble contact dermatitis, seborrhoeic eczema, dermatomyositis or erysipelas.
Non-specific changes: Sometimes, lesions may be minimal. This is particularly so in the case of the reticulate telangiectatic erythema

seen on the thenar and hypothenar eminences of the palms, on the pulps and dorsum of the fingers and, to a lesser extent, on the toes and over the lateral borders of the feet and heels. The lesions on the palms may be confused with the palmar erythema of liver disease. They are bluish red and may show small whitish areas of scarring. The changes occur particularly on the dorsa of the distal phalanges and between the joints, but sometimes there may be small vascular necroses on the tips of the fingers and alongside the nails . The nail folds may show hyperkeratotic and ragged cuticles.

Splinter hemorrhages may sometimes be seen in the nails(65), and other changes include pitting, ridging, onycholysis, striate leukonychia (66) and red lunulae (67).

Nail changes occur in approximately 25% of patients (68). Recurrent Osler's nodes may occur in the absence of infective endocarditis (69). Clubbing has been reported (70). Dilatation of the nail fold capillaries also occurs , but this is seen in other conditions(71).

3.4.2. HAIR CHANGES

Alopecia occurs in over 50% of patients, especially in the active phase of the disease. This takes the form of diffuse loss of hair with a reddish scalp or, less frequently, permanent scarring

alopecia, similar to that found in DLE. The hair is usually coarse, dry and fragile, especially on the frontal margin. This leads to an unruly appearance with short, broken-off hair, the so-called 'lupus hair' (72). This occurs in 30% of patients, predominantly females (73). The hair recovers as the disease becomes inactive, but 'lupus hair' usually persists longer than alopecia. The shortened hairs are unbroken.

3.4.3. LARGE VESSEL DISEASE

Gangrene of the tips of the fingers and toes (74) may develop insidiously. At first the digits become blue and cold and may be painful. Later, the phalanges may become exposed, and spontaneous separation of the tips of the fingers may occur. Amputation of digits may be required. Occlusion of large- and medium-sized arteries can occur suddenly and result in gangrene requiring amputation of a limb (75).This may be the result of vasculitis or thrombosis. Major vessel occlusion can occur in childhood . Leg ulcers occur in approximately 10% of patients.

3.4.4. CONNECTIVE TISSUE CHANGES

Hardening, binding-down and pigmentation of the skin of the face and limbs may resemble systemic sclerosis, although the typical mat-like telangiectases of the latter are usually absent. Calcinosis is rare (76), but occasionally widespread and large

palpable deposits may develop (77) or be found radiologically(78). Subcutaneous nodules occur in approximately 5% of patients (79),they occur mainly over the backs of the proximal phalangeal joints and wrists, but are also found on the elbows, knees, occiput and the flexor aspects of the fingers.

Lesions may break down, resolve with oral corticosteroids or require surgery and grafting. Relapsing nasal and auricular chondritis have been described (80). The nose and ears are tender, warm, swollen and red, but cartilage collapse does not occur as in polychondritis. Treatment with corticosteroids is effective.

3.4.5. MUCOUS MEMBRANE LESIONS

Mucous membrane lesions occur in 26% of cases, usually on the palate (82%) , buccal mucosa or gums, in active phases of the disease (81). Lesions start as small erythematous or purpuric areas, which break down to form shallow and sometimes painful ulcers, with a dirty yellow base and surrounding reddish halo. There may be difficulty in swallowing.

3.4.6. ARTHRITIS

Involvement of the joints occurs at some time in approximately 90% of patients, arthralgia being more common than arthritis. A rheumatoid-like deformity is present in approximately 25% of cases, with marked soft-tissue swelling,

especially of the dorsa of the fingers, hands and wrists, although joint erosions on X-ray are not a feature. The deformity is usually less, but the soft-tissue swelling is more marked than in rheumatoid arthritis (82). Jaccoud's syndrome, severe deformity of the hands with ulnar deviation and swan-neck configuration, often with little pain and good function, occurred in 13% and fixed flexion contractures of the elbows in 11% in one series (83).

3.4.7. CARDIAC LESIONS

Cardiac involvement in SLE is common, and increases with the duration of the disease (84). Pericarditis is the most frequent cardiac manifestation (85) . Fibrinous pericarditis is frequently found, but sometimes a large effusion may occur and reabsorb on adequate corticosteroid therapy. Rarely, a large effusion can develop within hours, giving rise to cardiac tamponade (86) and requiring aspiration.

The valves on the left side of the heart are commonly involved. Both systolic and diastolic murmurs may be found depending upon the site of the lesion, and bacterial endocarditis can occur on the damaged heart valves.

Aortic incompetence may occur without involvement of the mitral valve (87) at an early stage of the disease before steroids are used, or when the condition is well controlled.

Tricuspid regurgitation has been reported (88). Echocardiography is helpful in diagnosis (89), and valve replacement has been successful (90).

Coronary arteritis results in myocardial infarction (91). Infarction may also result from atherosclerosis in young patients (92). The myocardium may also be affected and results in cardiac failure (93).

Alterations in rhythm include atrial fibrillation and heart block of all types (94). Hypertension occurs in approximately 35% of patients.

3.4.8. LUNGS LESIONS

The incidence of involvement of the pulmonary system varies between series, and the radiological changes depend on the stage of the disease (95,96). Transient pleurisy is the most common feature, and in approximately two-thirds of these cases some fluid develops, occasionally hemorrhagic.

Involvement of the lungs is less frequent, and is shown mainly as transient infiltration, sometimes with mottling and reticulation (97). Acute pneumonitis with severe dyspnoea and fever may be a presenting manifestation of SLE (98), and cases have been reported with disseminated intravascular coagulation(99).

Pulmonary hypertension occurs (100), and pulmonary hemorrhage can be dangerous (101). When dyspnoea, pleuritic pain and fever occur with linear shadows on radiography, recurrent pulmonary infarction may be simulated. Fibrosing alveolitis has been reported, as well as haemopneumothorax (102).

Function of the diaphragm may also be deficient (103), and bilateral elevation of the diaphragm with linear shadows over the lower zones is characteristic of SLE.

Death may occur from overwhelming pneumococcal infection (104).

3.4.9. RENAL CHANGES

The renal changes (105) in SLE are very important in assessing the prognosis . Most patients will have renal involvement, as

histological evidence of nephritis may occur without proteinuria or microscopic urinary abnormality (106) and with normal renal function (107)

Sometimes, proteinuria and casts may occur transiently with febrile exacerbations.

Renal disease in lupus accounts for 3% of end stage renal failure, and is an important cause of mortality in SLE (108). The need for regular screening by urinalysis, blood pressure

monitoring, assessment of renal function and early renal biopsy is critical (109).

Impaired renal tubular potassium secretion can lead to persistent hyperkalaemia (110). The course is variable, and albuminuria and casts may persist for years without marked deterioration in renal function. Kidney damage, if this is going to develop, usually appears early (within the first 3 years) (109) and is more frequent and severe in younger patients (111). However, renal involvement may appear as long as 34 years after diagnosis of SLE (112). Some cases develop typical signs of the nephrotic syndrome, and renal vein thrombosis has been reported (113,114).

3.4.10. GASTROINTESTINAL TRACT CHNGES

GI manifestations can result from bowel vasculitis or impaired bowel motility. In addition, pancreatitis can result from SLE or from its treatment with corticosteroids or azathioprine. Manifestations may include abdominal pain from serositis, nausea, vomiting, manifestations of bowel perforation, and pseudo-obstruction.

3.4.11. HEPATIC LESIONS

These may be more common than previously recognized (115). Liver disease is present in approximately one-third of patients, but it is usually mild and often asymptomatic. Histology usually shows steatosis or mild hepatitis. Lesions include granulomatous hepatitis, chronic active hepatitis, cirrhosis, death due to liver failure and hepatic infarction may occur.

3.4.12. NEUROLOGICAL MANIFESTATIONS

Neurologic symptoms can result from involvement of any part of the central or peripheral nervous system or meninges. Mild cognitive impairment is common. There may also be headaches, personality changes, ischemic stroke, subarachnoid hemorrhage, seizures, psychoses, organic brain syndrome, aseptic meningitis, peripheral neuropathies, transverse myelitis, or cerebellar dysfunction.

3.4.13. HEAMATOLOGICAL MANIFESTATIONS

Hematologic manifestations include anemia (often autoimmune hemolytic), leucopenia (usually Lymphopenia, with < 1500 cells/μL,), and thrombocytopenia (sometimes life-threatening autoimmune thrombocytopenia). Recurrent arterial or venous

thrombosis, thrombocytopenia, and a high probability of obstetric complications occur in patients with antiphospholipid antibodies.

3.4.14. MUSCLE CHANGES

Muscle pain occurs in approximately 50% of patients, and this may be confused with the pain of arthritis. Muscle weakness is a less common feature. The serum aldolase level is frequently raised but the serum creatine phosphokinase is usually normal (116). A vacuolar myopathy is considered to be specific (117).

3.4.15. INVOLVEMENT OF TENDONS

Tendon rupture is rare, and involves particularly the weight-bearing tendons such as the patellar, quadriceps and Achilles tendons, but it may also occur in the tendons of the hands or biceps (118,119).

3.4.16. SLE IN PREGNANCY

Fertility is normal if renal function is good (120). Worsening of SLE is uncommon in pregnancy (121), especially in those on immunosuppressive therapy (122). Clinical remission for 6 months before conception should indicate an uncomplicated pregnancy and a live birth (123). There is a higher risk of premature delivery, fetal loss and perinatal mortality in all patients. Abortion occurred in 8% and perinatal mortality was 13% in one

series (124).There is no evidence of an increase in the malformation rate (125). Estrogen-containing contraceptives, even at low dosage, should be avoided in women with SLE. If mechanical methods of contraception or intrauterine devices are not possible, pure progestogens may be an alternative (126).

3.5.DIAGNOSIS

3.5.1.DIAGNOSTIC CRITERIA : The American College of
Rheumatology last updated the diagnostic criteria for SLE in 1997.
The most current criteria are listed below (127,128). The presence
of 4 of the 11 criteria yields a sensitivity of 85% and a specificity
of 95% for SLE. Keep in mind that individual features are variably
sensitive and specific. Patients with SLE may present with any
combination of clinical features and serologic evidence of lupus.

Criterion	Definition
1. Malar rash	Fixed erythema, flat or raised, over the malar eminences, tending to spare the nasolabial folds
2. Discoid rash	Erythematous raised patches with adherent keratotic scaling and follicular plugging (Atrophic scarring may occur in older lesions)
3. Photosensitivity	Skin rash as a result of unusual reaction to sunlight, by patient history or physician observation
4. Oral ulcers	Oral or nasopharyngeal ulceration, usually painless, observed by a physician
5. Arthritis	Non erosive arthritis involving ≥ 2 peripheral joints, characterized by tenderness, swelling, or effusion
6. Serositis	A) Pleuritis: Convincing history of pleuritic pain or rub heard by a physician or evidence of pleural

	effusion *or* (B) Pericarditis: Documented by ECG or rub or evidence of pericardial effusion
7. Renal disorder	(A) Persistent proteinuria >0.5 g/d or >3+ if quantitation not performed *or* (B) Cellular casts: May be red blood cell, hemoglobin, granular, tubular, or mixed
8. Neurologic disorder	(A) Seizures: In the absence of offending drugs or known metabolic derangements (e.g., uremia, ketoacidosis, electrolyte imbalance) *or* (B) Psychosis: In the absence of offending drugs or known metabolic derangements (e.g., uremia, ketoacidosis, electrolyte imbalance)
9. Hematologic disorder	(A) Hemolytic anemia: With reticulocytosis *or* (B) Leucopenia: $< 4000/mm^3$ total on ≥ 2 occasions *or* (C) Lymphopenia: $< 1500/mm^3$ on ≥ 2 occasions *or* (D) Thrombocytopenia: $< 100,000/mm^3$ in the

	absence of offending drugs
10. Immunologic disorder	(A) Anti-DNA: Antibody to native DNA in abnormal titer *or* (B) Anti-Sm: Presence of antibody to Sm nuclear antigen *or* (C) Positive finding of antiphospholipid antibodies based on (1) an abnormal serum level of IgG or IgM anticardiolipin antibodies, (2) a positive test result for lupus anticoagulant using a standard method, or (3) a false-positive serologic test for syphilis known to be positive for at least 6 months and confirmed by *Treponema pallidum* immobilization or fluorescent treponemal antibody absorption tests
11. Antinuclear antibody	An abnormal titer of antinuclear antibody by immunofluoresence or an equivalent assay at any point in time and in the absence of drugs known to be associated with drug-induced lupus syndrome
	SLE can be diagnosed if any 4 or more of the 11 criteria are present, serially or simultaneously, during any interval of observation.

3.5.2. LUPUS BAND TEST (LBT)

The lupus band test (LBT) is a direct immunofluoresence technique for demonstrating a band of immunoglobulins and complement components along the dremoepidermal junction of the skin in patients with lupus erythematosus (LE). (129).

The most frequent immunoglobulin class deposited is IgM, which is seen in about 90% of lesional skin biopsies, whereas the least frequently seen class is IgA.

The LBT is positive in about 70%–90% of sun-exposed non-lesional skin specimens obtained from patients with SLE, and in about 55% of SLE cases if sun-protected non lesional skin is analyzed.(130).

This test can be helpful in distinguishing SLE from Cutaneous lupus because in SLE the lupus band test will be positive in both involved and uninvolved skin, whereas with Cutaneous lupus only the involved skin will be positive. (131).

There are, however, some controversies concerning its specifity, because immune deposits have been found in the lesional skin of various dermatoses, mainly in biopsies from sun-exposed sites (132).The lupus band test is of special importance in polymorphic light eruption, porphyria cutanea tarda, rosacea and skin lesions with talengictasia. (133).

The LBT may also be helpful in making the diagnosis of SLE in subjects with no specific cutaneous lesions. However, the correct interpretation of this test requires detailed knowledge of the site of the biopsy, deposit components, morphology and brightness of the immunofluorescent band, and other associated serologic findings, as well as the response to treatment.

3.5.3.. LABORATORY FINDINGS

Screening laboratory studies to diagnose possible SLE should include the following:

- Complete blood count (CBC) with differential
- Erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP)
- Complement levels
- Serum creatinine
- Urinalysis with microscopy
- Liver function tests

The CBC count may help to screen for leucopenia, lymphopenia, anemia, and thrombocytopenia. Urinalysis and creatinine studies may be useful to screen for kidney disease. Levels of inflammatory markers, including the ESR and CRP, may be elevated in any

inflammatory condition, including SLE. CRP levels change more acutely, and the ESR lags behind disease changes.

Measurement of complement may be useful because C3 and C4 levels are often depressed in patients with active SLE as a result of consumption by immune complex–induced inflammation. In addition, some patients have congenital complement deficiency that predisposes them to SLE.

Liver function test results may be mildly elevated in acute SLE or in response to therapies such as azathioprine or nonsteroidal anti-inflammatory drugs (NSAIDS).

Creatinine kinase levels may be elevated in myositis or overlap syndromes.

In patients with high clinical suspicion and/or high ANA titers, additional testing is indicated. This commonly includes evaluation of antibodies to dsDNA, complement, and ANA subtypes such as Sm, SSA, SSB, and ribonucleoprotein (RNP) (often called the ENA panel) as well as screening anticardiolipin antibodies, lupus anticoagulant +/- beta 2 glycoprotein.

3.6. PROGNOSIS

SLE carries a highly variable prognosis. The natural history of SLE ranges from relatively benign disease to rapidly progressive and even fatal disease. SLE often waxes and wanes in affected individuals throughout life, and features of the disease vary greatly between individuals. The disease course is milder and survival rate higher among persons with isolated skin and musculoskeletal involvement than in those with renal and CNS disease.(134)

Mortality in patients with SLE has decreased over the past 20 years.(135) Prior to 1955, the 5-year survival rate in SLE was less than 50%; currently, the average 10-year survival rate exceeds 90%, and the 15-year survival rate is approximately 80%.(136) Ten-year survival rates in other countries in Asia and Africa are significantly lower, ranging from 60-70%.(137).

Decreased mortality rates associated with SLE can be attributed to earlier diagnosis (including milder cases), improvement in disease-specific treatments, and advances in general medical care. According to the Centers for Disease Control and Prevention, however, one third of SLE-related deaths in the United States occur in patients younger than 45 years, making this a serious issue despite declining overall mortality rates.

In 1976, Urowitz first reported bimodal mortality in early versus late SLE, noting that SLE-related deaths usually occur within the first 5-10 years of symptom onset.(138) Mortality in the first few years of illness is typically from active disease (e.g. CNS, renal, or cardiovascular involvement) or infection related to immunosuppressive treatment. Infectious diseases account for 29% of all deaths in these patients. (139)

Late deaths (after age 35 years) are generally from myocardial infarction or stroke secondary to accelerated atherosclerosis. (140,141). The Framingham Offspring Study demonstrated that women aged 35-44 years with SLE were 50 times more likely to develop myocardial ischemia than healthy women.(142)

Causes of accelerated coronary artery disease in persons with SLE are likely multifactorial. They include endothelial dysfunction, inflammatory mediators, corticosteroid-induced atherogenesis, and dyslipidemia associated with renal disease. The influence of race on prognosis has been widely debated.

 The LUMINA study group examined SLE among black, white, and Hispanic patients in the United States (including Puerto Rico) and reported that both disease activity and poverty predicted higher mortality among racial and ethnic minorities.(143) .

3.7. TREATMENT

The aim is to try to maintain optimal function with the minimum of therapy. SLE is an episodic disease, and treatment must be tailored to the patient's requirements. In acute cases, and during severe exacerbations, bed rest is required.

Undue exposure to the sun should be avoided and patients should be advised to wear broad-brimmed hats, to cover the 'V' of the neck and the arms, and to use a sun-screen preparation.

Mental stress, physical overexertion and secondary infection should be avoided.

There seem to be few problems with menopausal women on hormone replacement therapy (144).

Drugs may be required for symptomatic treatment but should be kept to a minimum.

However, the danger from infection is great, and antibiotics should not be withheld for fear of causing an exacerbation. Death can occur from Salmonella infection (145). Estimation of CRP may be helpful; if raised it suggests an infection.

Dapsone may be helpful for urticarial lesions (146), bullous eruptions (147) and for thrombocytopenia (148).

Hypertension must be treated, and while it is generally agreed that hydralazine can be used safely in most patients with SLE (149), there are now better modern alternatives including angiotensin-converting enzyme inhibitors and α-blockers. Diuretics may be required for the nephrotic syndrome or cardiac failure, and anticonvulsants for epilepsy . Chlorpromazine is a good sedative for psychosis.

Aspirin may be very useful, particularly in patients with joint manifestations. There is an increased risk of aspirin hepatoxicity in SLE (150). Indometacin may also be of benefit in cases with arthritis.

 Ischaemic necrosis of bone may be best treated early by core decompression (151).

Corticosteroids are required in acute cases, and should be given in adequate regimens. Prednisolone 60 mg/day is the steroid of choice initially. It is rare for higher dosage to be needed. Once the condition appears to be under control, the dosage may be reduced gradually, until a maintenance dosage of approximately 5–15 mg/day is reached. A single dose daily, given in the morning (11), produces fewer side effects and does not impair the therapeutic response. Not all patients require steroids, especially if there is no internal organ involvement (12).

It is important to assess the patient's progress by their general well-being and relief of symptoms, rather than by strict attention to laboratory abnormalities (152)

The ESR and DNA anti-bodies are no guide to the adequacy of therapy; the titer of antinuclear antibodies often persists unchanged despite clinical remission.

Anti-DNA antibody and serum complement levels may be helpful in predicting exacerbations (153). Low C3 often indicates severe renal disease. There is some evidence that a return of serological abnormalities to normal is followed by a prolonged remission (154), but exceptions indicate that serological data alone cannot be used as a basis of therapy.

Some fulminating cases have been treated with massive doses of steroids but the advantages of such therapy rarely outweigh the risks. There is no evidence that a very high dosage of corticosteroids is beneficial in CNS disease (155).

Prolonged high dosage of corticosteroids (e.g. prednisolone 60 mg/day for 6 months) is said to improve renal lesions more than small suppressive doses (156,157).

There is no evidence that steroids are prophylactic and that prolonged therapy will prevent the development of new features.

In mild cases, the administration of chloroquine or hydroxychloroquine may allow the dosage of steroids to be reduced, but the reduction may not be clinically meaningful.

Pregnancy is not contraindicated, as healthy live babies have been delivered by women on antimalarial therapy throughout pregnancy (158).

Immunosuppressive drugs have been used for patients not responding to corticosteroids or to act as steroid-sparing agents (159). It has been concluded that azathioprine adds nothing to high-dose prednisolone treatment in mild or moderate renal disease (160).

Another controlled trial, comparing azathioprine plus prednisolone with prednisolone alone, did not show any significant difference in the number of deaths, renal or extra renal manifestations, serum complement levels, DNA antibodies, LE cells, antinuclear antibody titers, or Coombs' antibodies, or any evidence of a steroid-sparing effect (161).

Sudden withdrawal may be followed by relapse (162). Cyclophosphamide may be a more effective immunosuppressant, but it is more toxic than azathioprine.

Cyclophosphamide may be useful for renal disease and is as effective as pulsed methylprednisolone (163).

Triple therapy with prednisolone plus azathioprine and Cyclophosphamide had no therapeutic advantage over prednisolone and azathioprine (164).

Methotrexate 7.5 mg/week has improved steroid-resistant patients (165), and patients without renal or CNS involvement (166), and 10–20 mg/week is useful for mucocutaneous lesions (167).

The long-term risk of malignancy must be considered whenever immunosuppressive drugs are used. Cyclophosphamide has been associated with bladder cancer (168), acute non-lymphocytic leukemia and solid tumors. Mesna may reduce urotoxic side effects, but 50% of patients develop rashes which may be confused with an exacerbation of SLE (169). Cyclosporine has been used in resistant cases in a dosage of 3–5 mg/kg, but four of 16 patients had a flare during treatment and three discontinued treatment because of side effects (170). Pulse therapy with methylprednisolone 1 g given intravenously in 500 ml normal saline over 4 h on 3 successive days to in-patients may be helpful in individuals who are not controlled by oral prednisolone and immunosuppressive. Given monthly it may prevent deterioration in renal function in patients with nephritis (171).

Plasmapheresis may be useful in managing life-threatening complications such as fulminating vasculitis or CNS disease .

A new and surprising therapeutic approach is that although UV light, especially UVB, can exacerbate SLE, it has been found in a controlled trial that exposure to UVA-1 (340–400 mm) at a dosage of 60 kJ/m2 three times weekly reduced disease activity, reduced the need for medication and decreased antibody levels (172).

4. AIM OF THE STUDY

On reviewing the literature, studies of lupus band test and levels of anti-ds-DNA antibodies in patients with SLE have yield variable results; this encourages us to run this study to confirm if :

1. Lupus band test in positive correlation with the Systemic Lupus Erythematosus disease activity measured by the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI).

2. Lupus band test is in positive correlation with the level of anti-ds-DNA antibodies.

5. MATERIALS AND METHODS

5.1. PATIENTS SELECTION

A single-center , open , uncontrolled, prospective clinical study including 30 patients with SLE diagnosed by the American Rheumatism Association (ARA) criteria.

All patients included in this study were Libyans, attending the connective tissue disease clinic, department of Dermatology and the rheumatology clinic, department of Medicine in ALjomhoria hospital (teaching hospital of Benghazi university); Benghazi.

The patients were of both sexes with ages ranging from 20-60 years were studied within period of time extending from February 2010 to April 2013.

5.2 DATA COLLECTION

The clinical data for the patients included in this study were recorded according to the SLEDAI Performa.

5.3 LABORATOTY STUDIES

5.3.1. HEMATOLOGICAL TESTS

Complete blood counts, including white blood cells(WBCs),red blood cells(RBCs), platelets count, erythrocyte sedimentation rate and hemoglobin concentration (HB) were performed.

5.3.2. SEROLGICAL TESTS

Rheumatoid factor (RH factor) and Venereal Disease Research Laboratory test(VDRL), were detected.

Fluorescent anti- nuclear antibodies (ANA) test:

The ANA test is an indirect immunofluorescent test that utilizes a substrate rich in nuclear material. A positive ANA test indicates the presence of ANAs ;it does not indicate the specific type of antibody, although close examination of the pattern of positivity may be helpful in suggesting the specific type of ANA that is present in the tested serum. A titer of 1:80 or less is of no diagnostic value; a reasonable cut-off point is around 1:160 to 1:320.

5.3.3.BIOCHEMICAL TESTS

Serum Glutamic Oxaloacetic Transaminase (GOT),serum Glutamic Pyrovic Transaminase (GPT),serum Alkaline Phosphatase (Alk.ph) and urea level were measured.

5.3.4. MICROBIOLOGICAL TESTS

Urine routine examination was done.

5.3.5. SKIN BIOPSY FOR LUPUS BAND TEST

In each patient a biopsy of clinically healthy skin from flexure aspect of forearm or buttock was performed. The direct immunofluorescent (DIF) technique was used to demonstrate the Immune Reactant (IR), if there are any.

According to LBT, the patients were divided into several groups: group with positive LBT and group with negative LBT, as well as groups by the class, shape, number and distribution of IR.

These groups have been compared in order to determine the type of correlation of LBT findings with SLE disease activity and the level of anti-ds-DNA antibodies.

6. RESULTS

6.1. DEMOGRAFIC DATA

  Patients were divided into 2 groups according to LBT findings (LBT ″positive″ and LBT ″negative″).

   LBT ″positive″ group 18/30 patients (60%).

   LBT ″negative″ group 12/30 patients (40%).
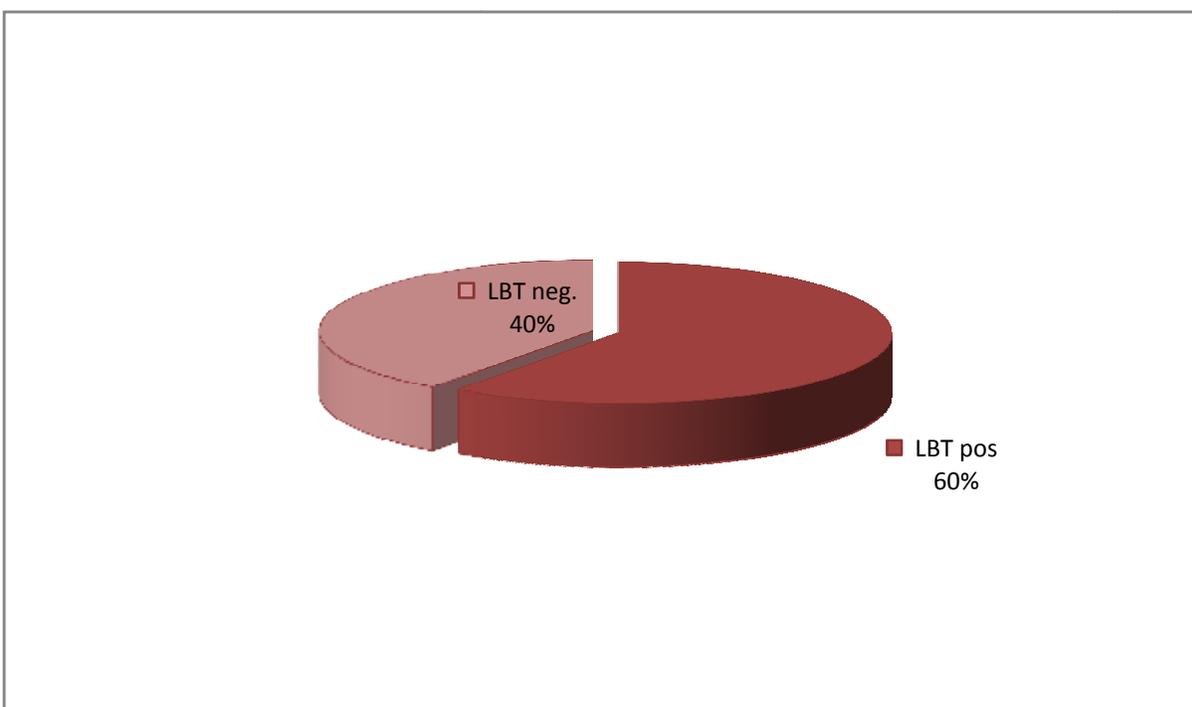
## 6.2. DEMOGRAFIC DATA- GENDER REPRESENTATION

The female to male ratio was 4:1. In the existing groups, this ratio was :

In LBT positive group 8:1

In LBT negative group 2:1

6.3. LUPUS BAND TEST AND SLE DISEASE ACTIVITY (SLEDAI)
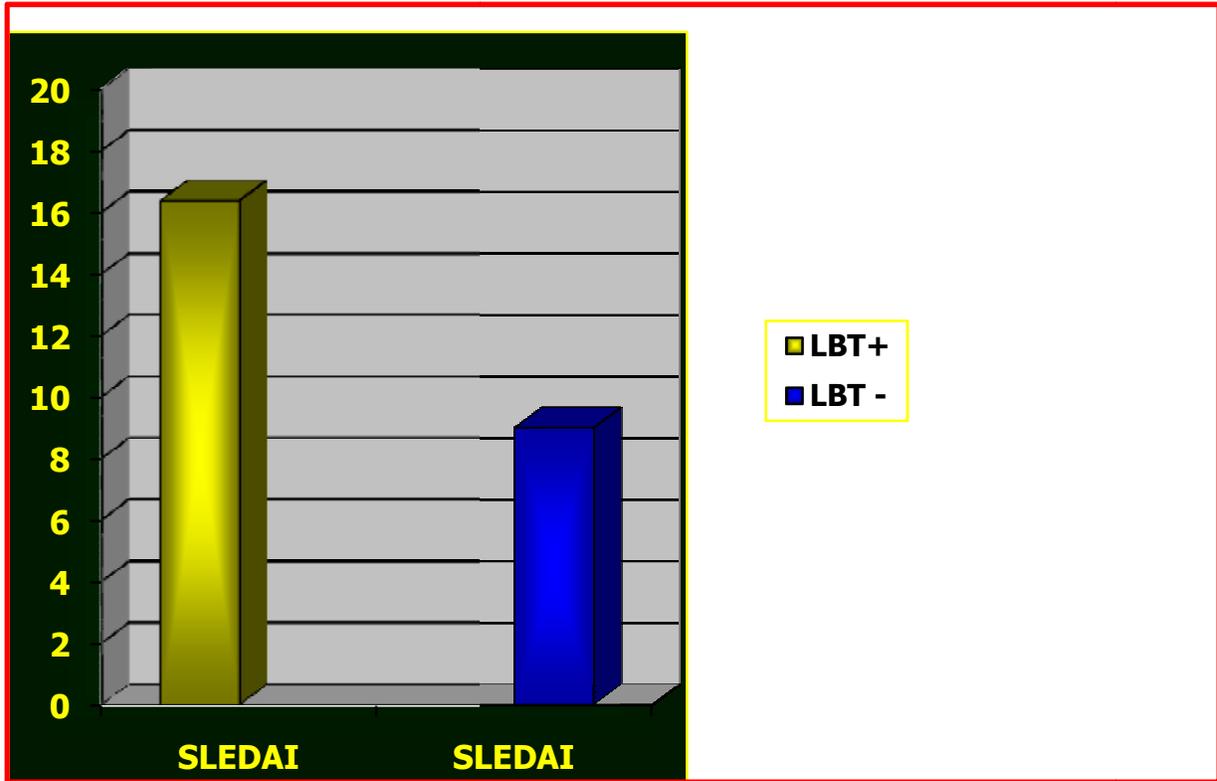
Positive LBT in patients suffering from SLE could identify more sever disease activity and negative LBT is associated with mild disease activity.

6.4. LUPUS BAND TEST – NUMBER OF IR AND SLE DISEASE ACTIVITY (SLEDAI)
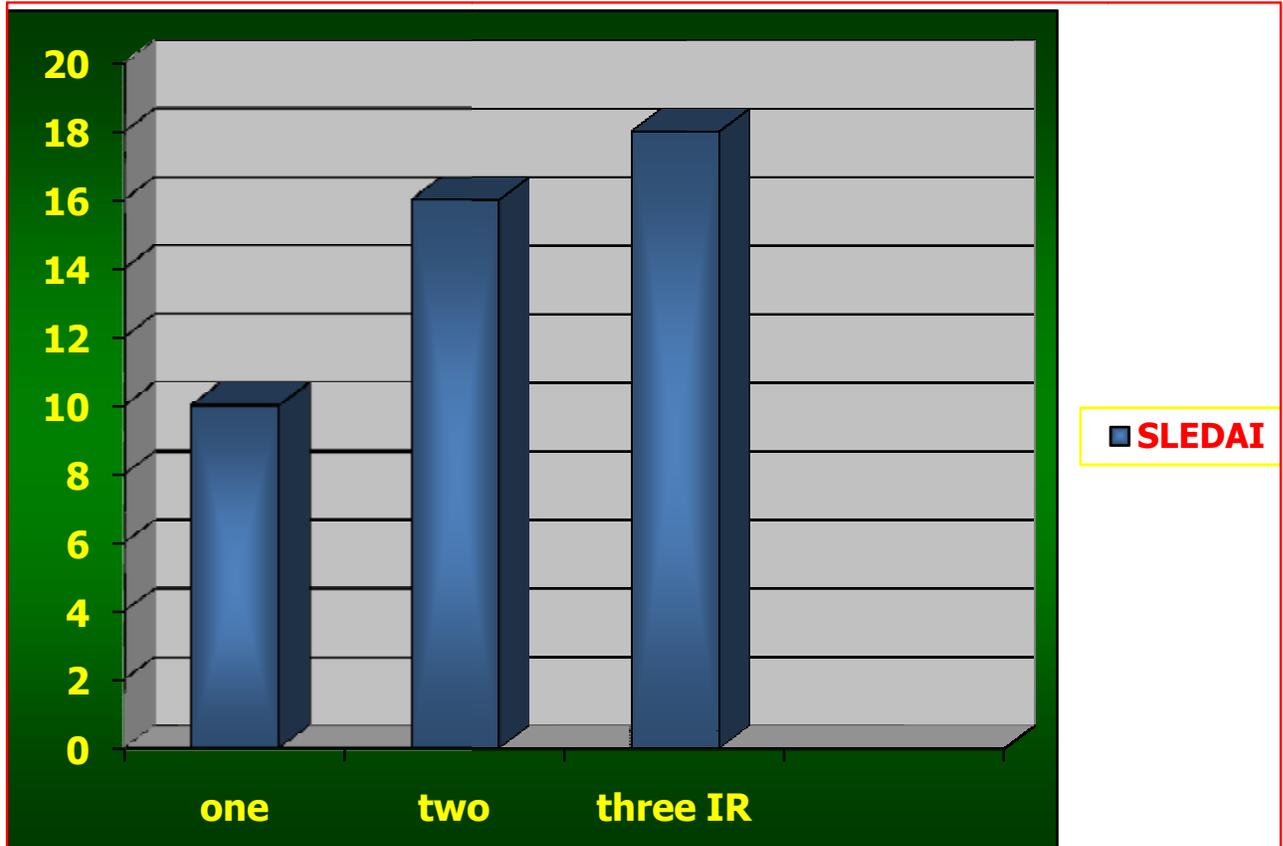
SLE disease activity (SLEDAI) was higher in patients with two or three different types of IR in LBT, in contrast to those with one type of IR, with no respect to IR class.

There was no difference in disease activity between group with two and group with three IR deposits in BMZ.

## 6.5. LUPUS BAND TEST – SHAPE OF IR AND SLE DISEASE ACTIVITY (SLEDAI)
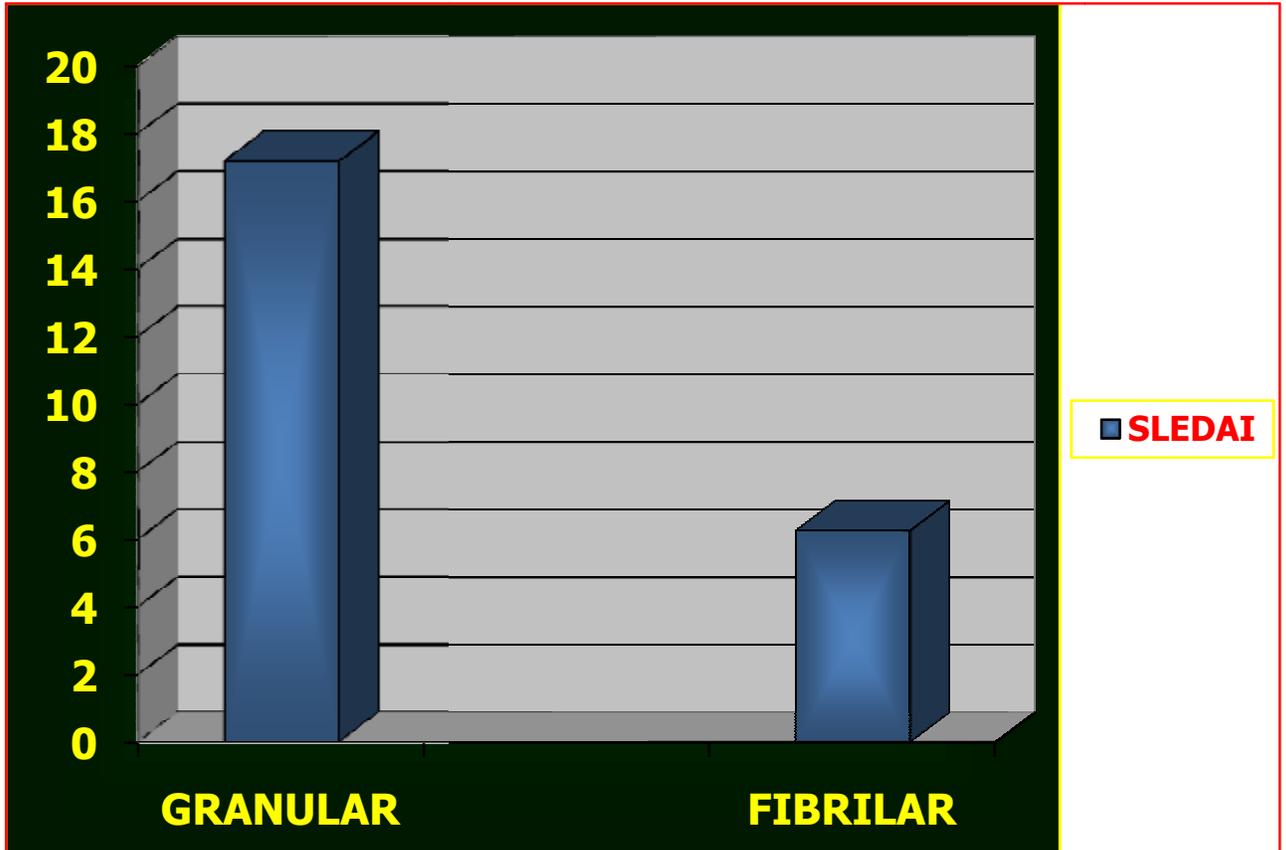
SLE disease activity (SLEDAI) was higher in patients with granular shape of IR found in LBT in contrast to those with fibrilar shape of IR.

6.6. LUPUS BAND TEST – IR DISTRIBUTION AND SLE DISEASE ACTIVITY (SLEDAI)
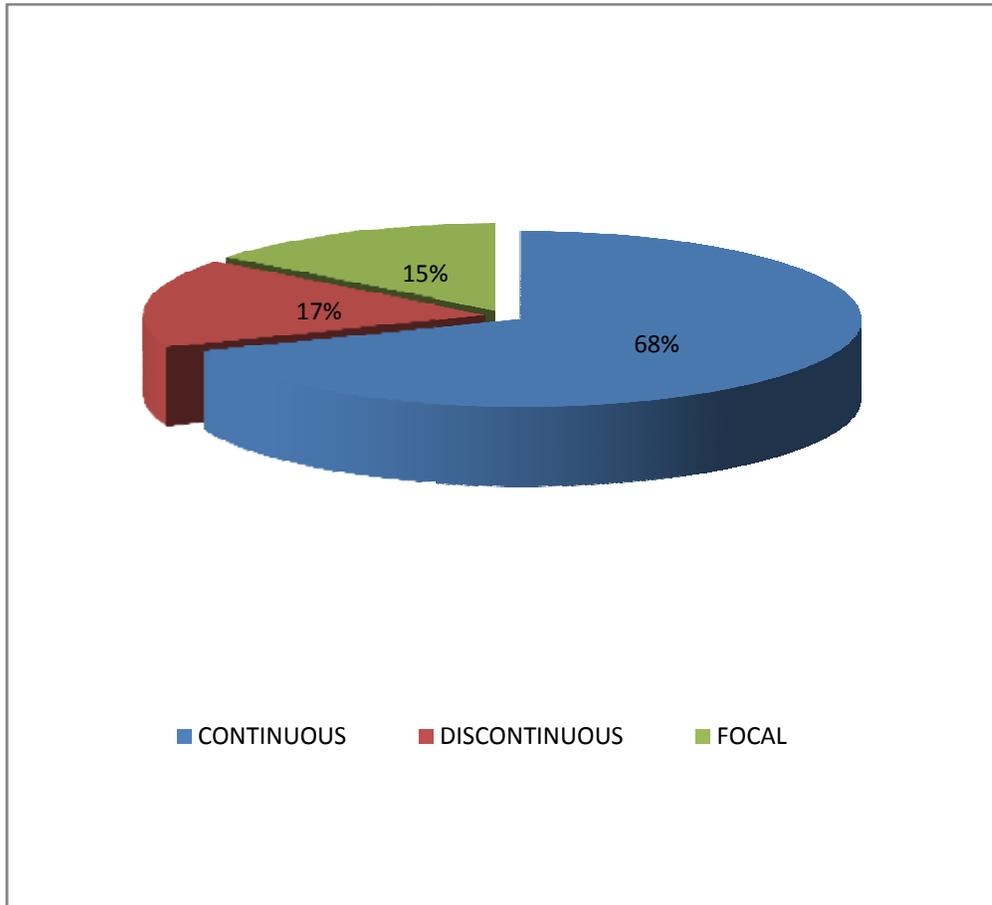
IR distribution (continuous, discontinuous or focal) do not correlate with SLE disease severity.

6.7. LUPUS BAND TEST- CLASS OF IR AND SLE DISEASE ACTIVITY INDEX (SLEDAI).
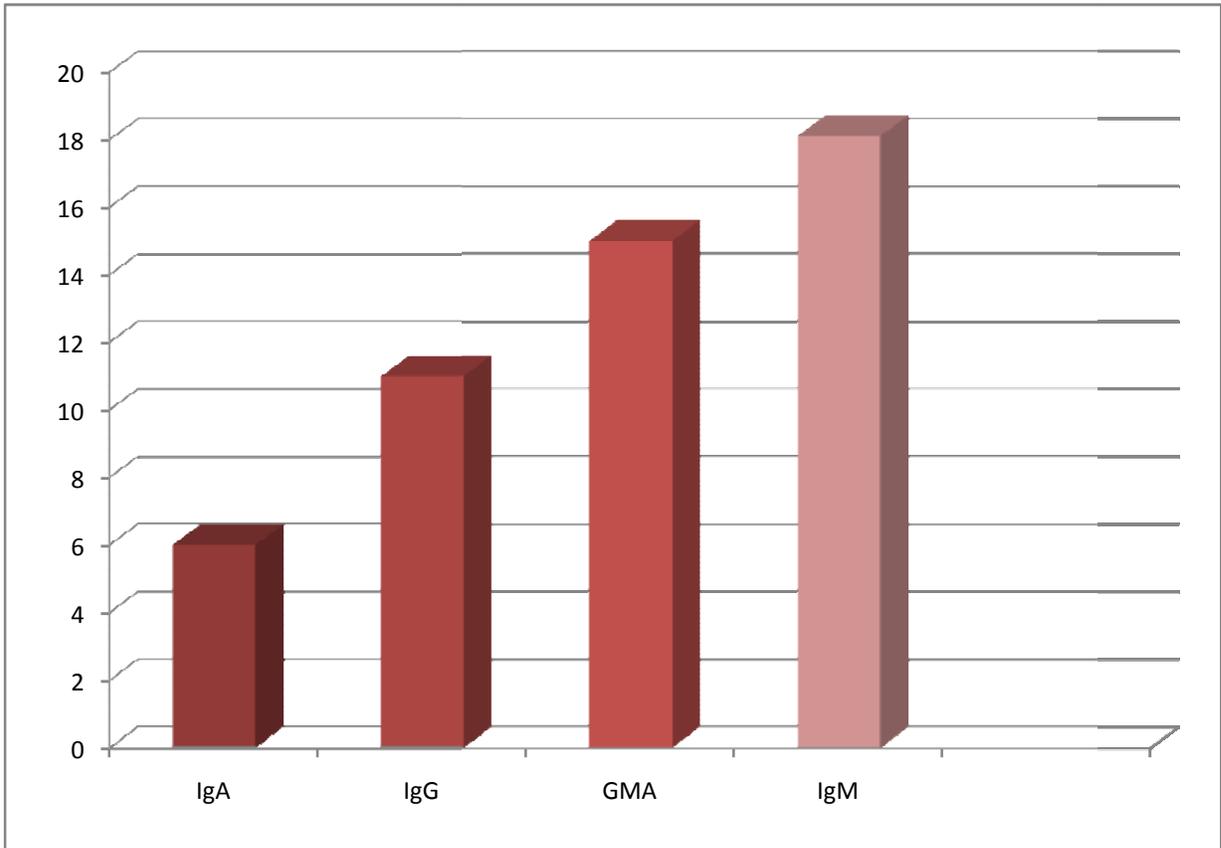
SLE disease activity (SLEDAI) is higher in patients with only IgM deposits, as solely IR, in contrast to those with several deposits of IR .

Moreover, SLE disease activity was higher in the group of patients with deposition composed of IgG+IgM+IgA compared to the group with IgG alone.

6.8. LUPUS BAND TEST AND ANTI ds-DNA ANTIBODIES
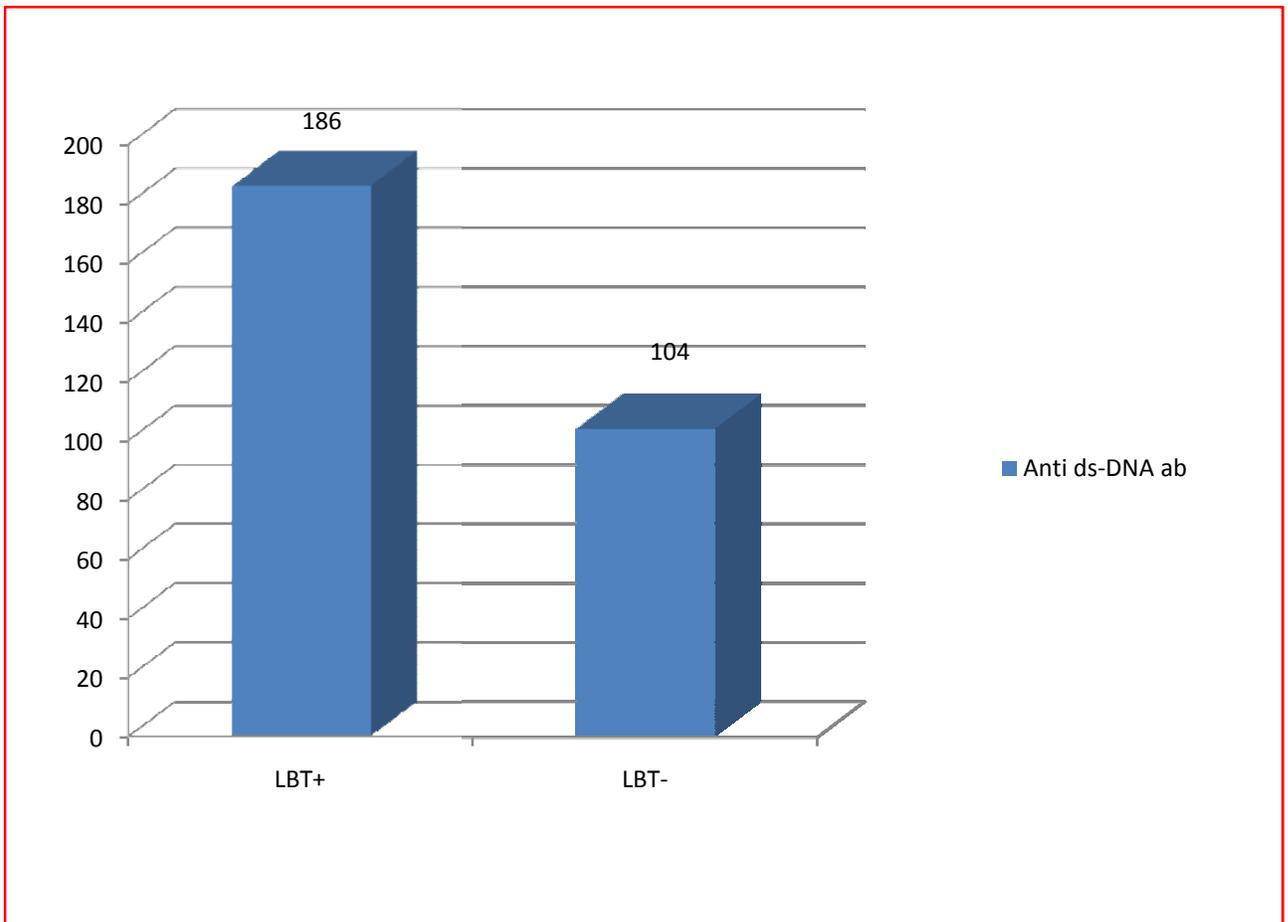
Positive LBT is consistent with higher anti ds-DNA ab titers,
and negative LBT is associated with lower anti ds-DNA ab.
titers.

6.9. LUPUS BAND TEST - NUMBER OF IR AND ANTI ds-DNA ANTIBODIES
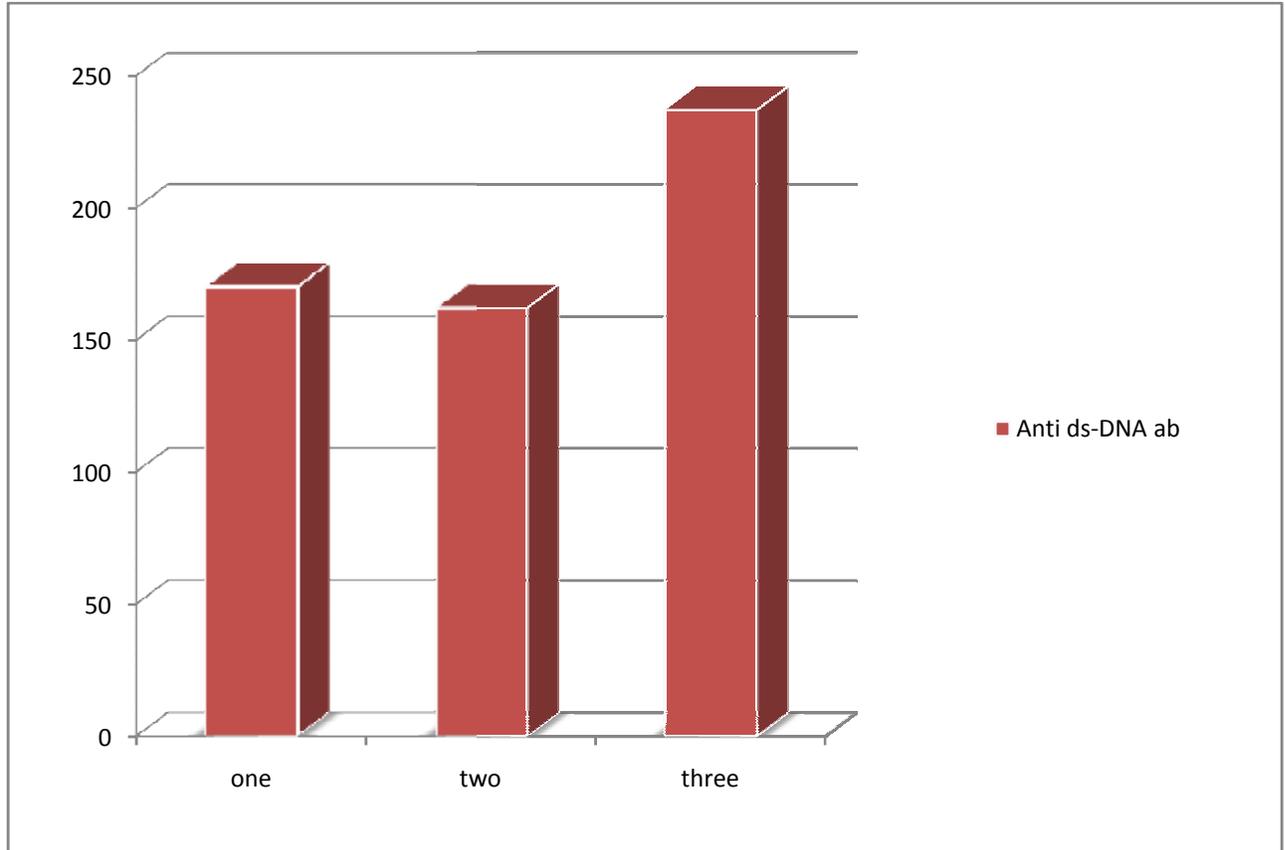
Number of IR detected in LBT in SLE patients do not correlate with the anti ds-DNA antibodies titer.

6.10. LUPUS BAND TEST - SHAPE OF IR AND ANTI ds-DNA ANTIBODIES
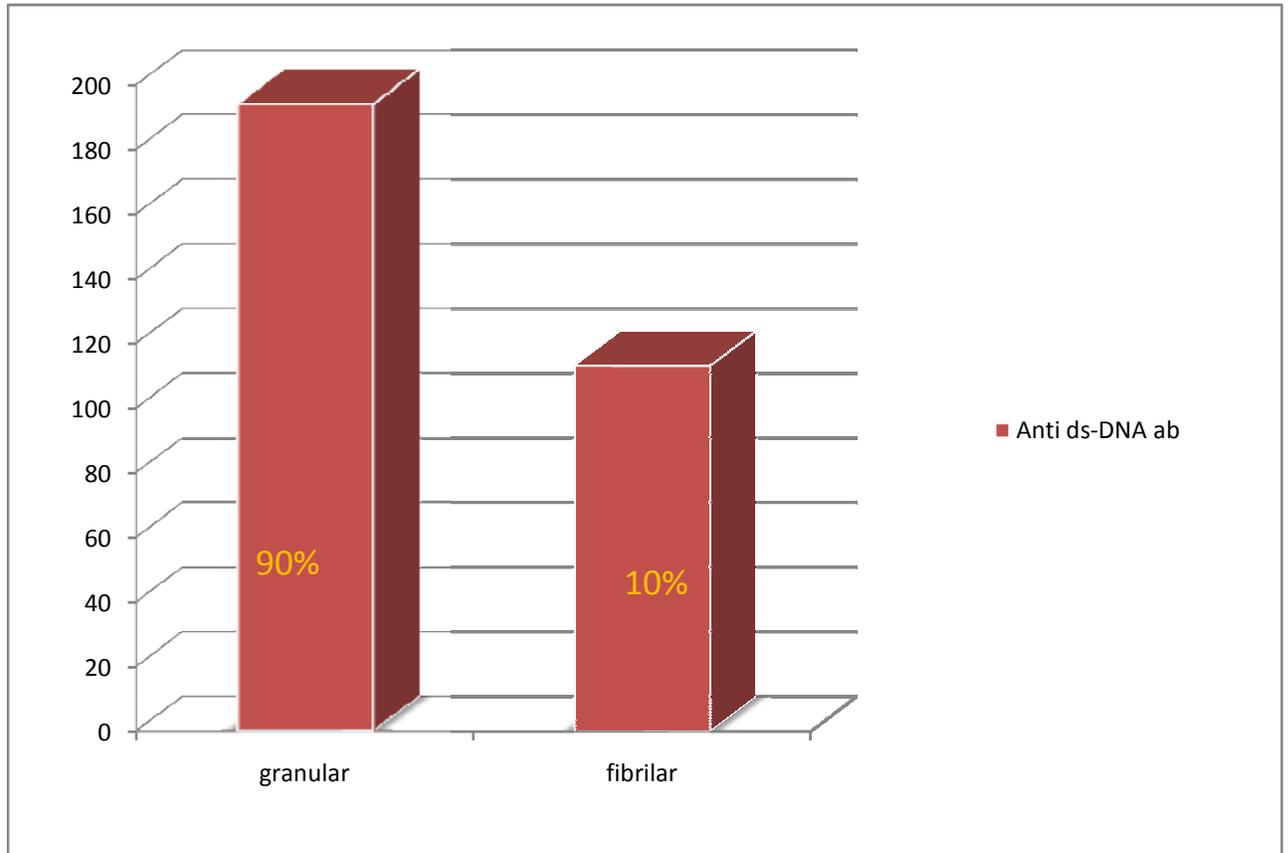
Shape of IR detected in LBT in SLE patients do not correlate with the anti ds-DNA antibodies titer.

7. DISCUSSION

Using direct immunofluoresence technique, Burnham et al first demonstrated a band of localized immunoglobulins at the dermo-epidermal junction (DEJ) of the skin of SLE patients, and this technique has become later as Lupus band test (LBT). (173).

All major immunoglobulin classes (IgG,IgM,IgA) and various complement components have been identified in the DEJ. (174).

The test is done on the skin biopsy usually with direct immunofluoresence staining, but immunohistochemistry may be applied. (175).

Importantly, LBT can be helpful in distinguishing SLE from cutaneous lupus erythematosus (CLE) patients. (176).

LBT is frequently positive in both involved and uninvolved skin in patients with SLE, whereas in CLE patients only the involved skin is positive. (177).

The exact mechanism of immunoglobulin deposition at the DEJ in LE patients is not clear. (178).

In the first part of our study we analyzed the correlation of LBT with SLEDAI.

The SLEDAI is formulated on the correlation between the different clinical and laboratory parameters. (179).

The SLEDAI has been shown to be reproducible increase by flares of the disease.

The SLEDAI is a global score index developed for assessment of SLE disease activity. (180)

The assessment of disease activity using SLEDAI score based on the measurement of clinical and laboratory criteria including seizure, psychosis , organ brain syndrome, visual disturbances, CVA, vasculitis, arthritis, urinary casts, hematuria, proteinuria, pyuria, alopecia, mucosal ulcers, pleuritic changes, pericarditis, low complement, increased DNA binding, fever, thrombocytopenia and leucopenia,

We evaluated 30 patients with SLE. Our patients divided into two groups according to LBT findings (LBT positive patients and LBT negative patients).

Positive LBT patients in our study identify more severe disease activity.

18 patients from 30 had positive LBT (60% of patients), medium score of SLEDAI was 16.3 in this group.

Negative LBT identify mild disease activity, 12 patients from 30 had negative LBT (40% of patients), and medium score of SLEDAI was 9.1 in this group.

The clinical and laboratory parameters of SLEDAI evaluated in the literature showed more disease activity with score more than 20 in severe forms and score of less than 9 in mild forms. (181).

The most frequent immunoglobulin class deposited is IgM which is seen in about 90% of lesional skin biopsies, whereas the last frequently seen is IgA .

However, a weak decoration with IgM along the DEJ is also common in sun exposed skin of patients who do have LE.

It was demonstrated that healthy sun exposed skin may show a weak interrupted linear or granular pattern of IgM but only 5% of them showed the presence of IgG, IgA and complement.(182).

SLEDAI in our patients is lower in patients with only IgM deposits, as solely IR, in contrast to those with several deposits of IR.

Moreover SLE disease activity was higher in the group of our patients with deposition composed of (IgG,IgM,IgA) compared to the group with IgG alone.

Taking these observations and results in account, in line with Crwson and Margo, the LBT in patients with SLE is positive in about 70-90% subjects, when sun exposed non-lesional skin is tested and about 55% of case when sun protected non-lesional skin is studied.(183)

In patients with CLE, the LBT of non-lesional skin is usually negative, although the lesional skin may frequently show immune deposits at the DEJ. (184).

Moreover, a positive LBT may serve as a prognostic indicator in patients with an established diagnosis of LE , as correlates with severe extra cutaneous disease mainly lupus nephritis with anti-ds-DNA antibodies. (185).

The usefulness of LBT as diagnostic and prognostic procedure in LE patients is well established, the positive result of this test within the uninvolved skin is a strong indicator for LE and disease activity. (186).

Sensitivity of LBT for diagnosis an active disease seems to be even higher than the value of the laboratory parameters, including serum C3,C4 levels. Erythrocyte sedimentation rate, lymphocyte count or presence of antibodies not including in the diagnostic criteria of SLE.

In our study the SLEDAI was higher with two or three different types of IR in LBT. In contrast to those with one type of IR with no respect to IR class.

We did not found any difference in disease activity between group with two and group with three IR deposits in the DEJ.

The LBT may also be helpful for use on all patients who fail to meet the criteria for the diagnosis of SLE but whose condition suggest such diagnosis. (187).

LBT facilates differentiation of diagnosis and activity of SLE from other antinuclear antibody positive disease like scleroderma, Rheumatoid arthritis, dermatomyositis and mixed connective tissue disease .

The immunoglobulin staining pattern in non-lesional LE skin at the low magnification is usually described as granular or closely spaced fibrils and sometimes also homogenous band.

Under high power the pattern of immunoglobulin deposition at the DEJ may be linear, stippled or shaggy.

A discontinuous or interrupted deposition and pattern in LBT is less specific and can be seen in a number of other disorders such as actinic keratosis, polymorphic light eruption, rosacea and in normal sun exposed skin.(188).

A homogenous or paints band of well demarcated bright florescence is seen in chronic atopic or hypertrophic skin lesions.

In our study we detected granular shape pattern in 92% of patients and the SLEDAI was higher in patients with thus pattern.

Fibrilar shape pattern of IR detected in 8% of our patients. 68% of analyzed patients had continuous band , 17% with discontinuous band and 15% with focal band.

A positive LBT may also be of a predictive value for the prognosis of LE. The deposition of immunoglobulins in non-lesional sun protected skin is also reported to be correlated with the presence of anti-dsDNA antibodies titer and with higher incidence of renal disease .(189).

Although a negative LBT does not necessarily exclude the possibility of renal involvement, moreover almost all patients with renal disease had a positive LBT. (190).

In our study patients suffering from SLE, positive LBT is consistent with higher anti-ds DNA antibodies titer.

A negative LBT is associated with lower anti-dsDNA antibodies titers or negative.

The number of IR detected in LBT in our SLE patients do not correlate with the anti-dsDNA antibodies titers.

The shape and pattern of IR detected in LBT in our SLE patients do not correlate with anti-dsDNA antibodies titer.

Correct interpretation of this test requires detailed knowledge of several correlates, such as the site of biopsy (lesional or non-

lesional skin), sun protected versus sun exposed skin, deposit components morphology and brightness of immunofluoresence.

A positive LBT on sun protected non-lesional skin represent a sensitive and specific method for identifying and evaluating patients with SLE.(191).

Furthermore LBT on sun protected normal skin may be helpful in diagnosing SLE in patients with inconclusive clinical and serological profiles and may also be of prognostic significance if all three immunoglobulins (IgG,IgM,IgA) are found.

In our study the positive LBT have been associated with severe disease activity of SLE and the LBT also have been associated with higher titer of anti dsDNA antibodies.

Importantly the LBT is a laboratory procedure that should always be interpreted in conjunction with clinical findings and other serological and immunopathological parameters to make a correct diagnosis and prognosis.

8. CONCLUSION

- Positive LBT in patients suffering from SLE could identify more severe disease activity and negative LBT is associated with mild disease activity.
- Single IR classes do not correlate with severity of disease activity.
- Number of IR detected in the DEJ is in direct positive correlation with SLE disease activity.
- SLE disease activity is higher in patients with granular shape of IR found in LBT in contrast to those with Fibrilar shape of IR.
- IR distribution (continuous, discontinuous or focal) do not correlate with SLE severity.
- Positive LBT could identify higher anti-dsDNA antibodies titers and negative LBT in SLE patients is associated with lower anti-dsDNA titer.
- Class of IR detected in LBT in SLE patients do not correlate with anti-dsDNA antibodies titer.
- Shape of IR detected in LBT do not correlate with anti-dsDNA antibodies titer.
- Number of IR detected in LBT in SLE patients do not correlate with anti-dsDNA antibodies titer.
- Distribution of IR in LBT in SLE patients do not correlate with anti-dsDNA antibodies titer.

ملخص البحث

المقدمة : مرض الذؤابة الحمراء الجهازى هو مرض ذاتي المناعة و مزمن . الملامح الرئيسية لهذا المرض هو إنتاج عدة أنواع من الأجسام المضادة الذاتية و معدلات منخفضة من المكملات و وجود مركبات مناعية سابحة.

تجربة حزام الذؤابة هي عبارة عن استخدام تقنية الوميض الضوئي المباشر لإظهار حزام من البروتينات المناعية و المكملات عند ملتقى الأدمة و ماتحت الأدمة بالجلد.

الغرض من الدراسة : إثبات ما إذا كانت تجربة حزام الذؤابة في ارتباط ايجابي مع نشاط مرض الذؤابة الحمراء الجهازى مقاسه عن طريق فهرس نشاط مرض الذؤابة الحمراء الجهازى و ما إذا كانت هذه التجربة في ارتباط ايجابي مع مستوى الأجسام المضادة للحمض النووي.

الأدوات : 30 مريضا من الذين يترددون على قسم الإمراض الجلدية و قسم الرثويات بمستشفى الجمهورية بنغازي,تم تضمينهم في دراسة سريريه متوقعة و مفتوحة و غير مقيدة.

الطريقة : تم اخذ عينات من الجلد السليم إكلينيكيا من كل مريض من منطقة ثنية الساعد أو الأرداف و دراستها عن طريق تقنية الوميض الضوئي المباشر

النتائج : تجربة حزام الذؤابة ايجابية في مرضى يعانون من الذؤابة الحمراء الجهازى تشير إلى مرض أكثر حدة و نتيجة سلبية مترافقة مع نشاط معتدل للمرض.

عدد المفاعلات المناعية المكتشفة في ملتقى الأدمة و ماتحت الأدمة بالجلد كانت في ارتباط ايجابي مع نشاط مرض الذؤابة الحمراء الجهازى.

تجربة ايجابية تشير إلى معدلات أعلى للأجسام المضادة للحمض النووي و نتيجة سلبية مترافقة مع معدلات اقل للأجسام المضادة.

عدد المفاعلات المناعية المكتشفة في تجربة حزام الذؤابة لا تترافق مع معيار الأجسام المضادة للحمض النووي.

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APPENDIX

Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) .. Performa

Has the patient recent seizures, unexplained by metabolic, infectious or drug causes? …………... Yes   No

Has the patient shown psychotic behavior as hallucinations? ……………………………………. Yes
NoDoes the patient showed altered mental function, with impaired orientation, memory or other intelligent functions with rapid onset fluctuating clinical features? ……………………………………………… Yes   No

Does the patient had retinal changes associated with Lupus, as retinal hemorrhage or optic neuritis? Yes   No

Does the patient have a new onset of sensory or motor neuropathy involving the cranial nerves?….Yes No

Does the patient have a severe, persistent headache, unrelieved by narcotic analgesics? ………… Yes No

Has the patient had a recent cerebrovascular accident(s), not due to arteriosclerosis? ………….. Yes No

Does the patient have skin ulcerations or areas of gangrene? ……… ………………………… Yes No

Does the patient have tender finger nodules, periungual or splinter hemorrhages? …………… Yes No

Does the patient have biopsy or angiographic evidence of vasculitis? … ……………………… Yes No

Number of joints with pain, tenderness, swelling and/or effusion? …… ……………………… Yes No

Does the patient have proximal muscle aching or weakness? ………….. ……………………… Yes No

Does the patient have elevated serum creatine phosphokinase or aldolase? ………………… Yes No

Does the patient have changes in an electromyogram or a biopsy showing myositis? … …….. Yes No

Does the patient have a new onset or recurrence of inflammatory type rash?............................. Yes No

Has the patient had a new onset or recurrence of abnormal, patchy or diffuse loss of hair? …. Yes No

Has the patient had a new onset or recurrence of oral or nasal ulcerations? …… ……………… Yes No

Has the patient had pleuritic pain with pleural rub or effusion or pleural thickening? …… …….. Yes No

Does the patient have pericardial pain? ………… …………………………………………… Yes No

Does the patient have a pericardial rub or effusion? ………… ………………………………….. Yes No

Does the patient have electrocardiogram or echocardiogram evidence of pericarditis? ………… Yes No

Body temperature; exclude infectious cause……………………………………………… more than 38C.

Platelet count ……………………………………………………….. less than 100.000 platelets/mm3.

White blood cell count .... less than 3.000 white blood cell /mm3

Is the decrease in blood cell counts due to drugs or toxins? …………………………………….. Yes No

Current urine protein output ……………………………………………………….. grams per day

Previous urine output…………………………………………………........................ grams per day

Has the patient have heme granular or blood casts in the urine sediment? ……………………   Yes   No

Number of red blood cells in the urine   ……………………………………….blood cells / high power field

Number of white blood cells in the urine …………………………………… Blood cells / high power field

Can the urine findings be explained by stone, infection or other causes…………………….....   Yes   No

Does the patient show a decrease in CH50, C3 or C4? …………………………………………..   Yes   No

Does the patient show evidence of increased DNA binding by Farr assay? ……………………   Yes   No