

Role of measurement of serum B-cell attracting chemokine CXCL13 in Systemic Lupus Erythematosus Disease

Thesis

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الذئبة الحمراء

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Summary and Conclusion

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease characterized by autoantibodies directed at a variety of self antigens and causing multiple clinical and laboratory abnormalities. The immunological basis of SLE is multifactorial and still elusive.

The primary pathological findings in patients with SLE are those of inflammation, vasculitis and immune complex deposition. The exact etiology of SLE is unknown.

It is a disease characterized by multi system organ affection, with recurrent remissions and exacerbations. So, detecting changes in disease activity, as well as detecting of different organ affection in SLE are therefore of paramount importance.

B lymphocyte chemoattractant (BLC/CXCL13) also known as BCA-1 (B cell attracting chemokine 1) is a small cytokine belonging to the CXC chemokine family that is produced mainly by monocytes/ macrophages and DCs and it is the only chemokine so far which is known to specifically chemoattract B cells through the interaction with its receptor CXCR5.

Now, evidence that CXCL13 contributes to the pathogenesis of SLE and LN is accumulating. So this thesis was

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List of abbreviations

a.m	: Ante Meridiem “before noon”.
Ab	: Antibody.
ACLE	: Acute Cutaneous Lupus Erythematosus.
ACR	: American College of Rheumatology.
Ag	: Antigen.
ANA	: Antinuclear Antibody.
Anti-dsDNA	: Anti-double stranded DNA.
Anti-NMDA	: Anti-N-Methyl D-Aspartate.
Anti-Sm	: Anti smith antibody.
Anti-β2GPI	: Anti-Beta 2 Glycoprotein I.
APCs	: Antigen presenting cells.
aPL	: anti-phospholipid antibodies.
APRIL	: A proliferation inducing ligand.
aPTT	: Activated Partial Thromboplastin Time.
B cell	: B cell lymphocyte.
BAFF	: B-lymphocyte activating factor.
BCA-1	: B cell attracting chemokine 1.
Bcl-2	: B-cell lymphoma 2.
BCMA	: B cell maturation antigen.
BCR	: B cell receptor.
BILAG	: British isles assessment group.
BLC	: B lymphocyte chemoattractant.
BLys	: B-lymphocyte stimulator.
bp	: base pair.
B reg	: B regulatory cells.
BUN	: Blood Urea Nitrogen.
BWF1	: New Zealand Black x New Zealand White F1 mice.
C	: Celsius
C1, C2, C3 and C4	: Complement 1, 2, 3 and 4.
CAML	: Calcium modulating ligand.
CBC	: Complete blood counts.
CCLE	: Chronic Cutaneous Lupus Erythematosus.

CD	: Cluster of differentiation.
CD40L	: Cluster of differentiation 40 ligand.
CNS	: Central Nervous System.
CPK	: Creatin Phosphokinase.
CR	: Complement receptor.
CRP	: C-reactive protein.
CT	: Computerized Tomography.
CTLA4	: Cytotoxic T lymphocyte antigen 4.
CVD	: Cardiovascular Disease.
CXCL13	: CXC ligand 13.
CXCR5	: CXC receptor 5.
DBP	: Diastolic Blood Pressure.
DC	: Dendritic cells.
DLE	: Discoid Lupus Erythematosus.
DM	: Diabetes Mellitus.
DMARDs	: Disease modifying anti rheumatic drugs.
DN T cell	: Double negative T cell.
DNA	: Deoxyribonucleic acid.
EBV	: Epstein-Barr Virus.
ECG	: Electrocardiogram.
Echo	: Echocardiogram.
EEG	: Electroencephalogram.
ELISA	: Enzyme Linked Immunosorbent Assay.
ESR	: Erythrocyte Sedimentation Rate.
FDCs	: Follicular dendritic cells.
g	: gram.
g/day	: gram/day.
gm/dl	: gram/deciliter
GBM	: Glomerular basement membrane.
GFR	: Glomerular filtration rate.
GIT	: Gastrointestinal tract.
GM-CSF	: Granulocyte-macrophage colony stimulating Factor.
G6PD	: Glucose 6 phosphate dehydrogenase.
Hb	: Hemoglobin.
HIV	: Human Immunodeficiency Virus.

HLA	: Human Leukocyte Antigens.
HPF	: High Power Field.
hr	: hour.
HS	: Highly significant.
HSCT	: Haematopoietic Stem Cell Transplant.
HTN	: Hypertension.
ICAM 1	: Inter-Cellular Adhesion Molecule 1.
ICOS	: Inducible Tcell costimulator.
IFNα	: Interferon alpha.
IgG, IgM and IgA	: Immunoglobulin G, M and A.
IL	: Interleukin.
IMP	: Inosine monophosphate.
ISN/ RPS	: International Society of Nephrology/ Renal Pathology Society.
IVIG	: Intravenous immunoglobulin.
LDH	: Lactate Dehydrogenase.
LL	: Lower limbs.
LN	: Lupus nephritis.
μL	: microliter.
mAbs	: monoclonal Antibodies.
mDC	: mature dendritic cell.
mg	: milligram.
mg/d	: milligram/day.
mg/dl	: milligram/deciliter.
mg/kg	: milligram/kilogram.
MHC	: major histocompatibility complex.
Million/cmm	: million/cubic millimeter.
mm³	: cubic millimeter.
mm/h	: millimeter/hour.
MMF	: Mycophenolate Mofetil.
MMP	: metalloproteases.
MRI	: Magnetic Resonance Imaging.
mRNA	: messenger RNA.
mTOR	: mammalian target of rapamycin.
NIH	: National Institutes of Health.
nm	: nanometer.

No	: Number.
NP	: Neuropsychiatric.
NPSLE	: Neuropsychiatric lupus.
NS	: Non significant.
NSAIDs	: Non Steroidal Anti-inflammatory Drugs.
O.D	: Optical density.
P	: Level of significance.
p.m	: Post Meridiem "after noon ".
PET	: Positron Emission Tomography.
pg/ml	: picogram/milliliter.
PH	: power of hydrogen.
prot/creat ratio	: protein creatinine ratio.
r	: Pearson correlation test.
RA	: Rheumatoid Arthritis.
RBCs	: Red Blood Cells.
RNA	: Ribonucleic acid.
RPR	: Rapid Plasma Reagent.
S	: Significant.
SBP	: Systolic Blood Pressure.
SCLE	: Subacute Cutaneous Lupus Erythematosus.
S.creat	: Serum creatinine.
SD	: Standard deviation.
SLAM	: Systemic lupus activity measures.
SLE	: Systemic Lupus Erythematosus.
SLEDAI	: Systemic lupus erythematosus disease activity index.
SPECT	: Single-photon Emission Computed Tomography.
t test	: Independent t-test.
T cell	: T cell lymphocyte.
TACI	: Transmembrane activator and calcium modulating interactor.
TFH	: T follicular helper cells.
TGFβ	: Transforming growth factor β.
Th17	: T helper cell 17.
Thousand/cmm	: Thousand/cubic millimeter.

TLR	: Toll like receptor.
TNF	: Tumor necrosis factor.
TNFα	: Tumour necrosis factor alpha.
TNF β	: Tumour necrosis factor beta.
T reg	: T regulatory cells.
U/ml	: Unit/milliliter.
U/S	: Ultrasound.
USA	: United States Of America.
UV	: Ultraviolet.
VDRL	: Venereal disease research laboratory.
WBCs	: White Blood Cells.
WHO	: World Health Organization
Wt	: weight.
χ^2	: Chi square test.
%	: percentage.

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