TITLE: PATHOGENESIS OF SLE

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ABSTRACT

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease affecting multiple organs. SLE afflicts mostly women. Research elucidate the pathogenesis of SLE which is complex and involves cells of both innate and adaptive immunity. It also has defined two critical families of mediators, type 1 interferon (IFN-1) and autoantibodies targeting nucleic acids and their binding proteins, as fundamental contributors to the disease.

KEYWORDS: SLE, Innate immunity, adaptive immunity, type 1 IFN, autoantibodies.

INTRODUCTION

SLE is an autoimmune disease, characterized by phases of flare-ups and remission, that can cause severe damage to various organs and tissues. In recent decades, pathogenesis of SLE helped to identify the dysregulation of cells of the innate and adaptive system. In lupus patients the immune system mediator IFN-1 and characteristics autoantibodies were found to be common denominators. Genetic variation that establish risk and activation of INF-1 system are arguably the prerequisites for lupus disease.
Role of adaptive immunity include:
1) B cells and autoantibodies in SLE
2) Self-reactive T-cells
Role of innate immunity
1) Role of neutrophils
2) Role of plasmacytoid dendritic cells
3) Role of interferon type-1

Over half of the identified SLE susceptibility genes encode proteins linked to IFN-1 production or response. Toll like receptor 7 (TLR7) over expression is a well-known driver of increased IFN-1 production and pathogenesis of SLE.

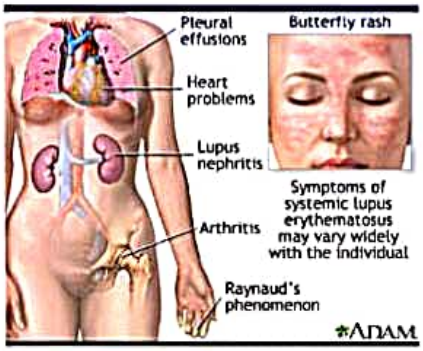
CLINICAL SYMPTOMS

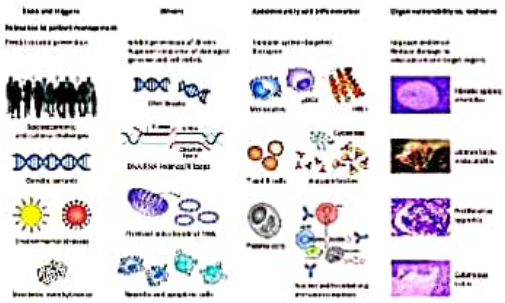
Symptoms vary from person to person. Common symptoms include:

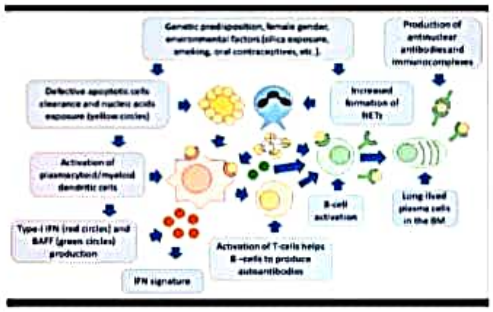
- Fatigue
- Fever
- Arthritis (Joint Pain)
- Hair loss
- Mouth sores
- Skin rashes- mostly butterfly rash over cheeks and nose
- Swollen lymph nodes

Other symptoms and signs depend on which part of the body is affected:

- Brain and nervous system
- Digestive tract
- Heart
- Kidney
- Lungs
- Blood abnormalities including anemia and low WBC, etc







RESULT

SLE is a disease whose genesis is not yet well understood. The identification of the key role played by type-1 IFN has given further impetus to research. The involvement of both the innate and adaptive immune systems underscore it's great complexity.

DISCUSSION

Progress in basic an applied immunology has led to important advances relevant to the pathogenesis of SLE.
Combination therapies that together target both innate and adaptive immune system mechanisms may be required to achieve sustained remission.

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