Genetics In Autoimmune Diseases

Essay

Submitted for partial fulfillment of

The Master Degree in Clinical Pathology

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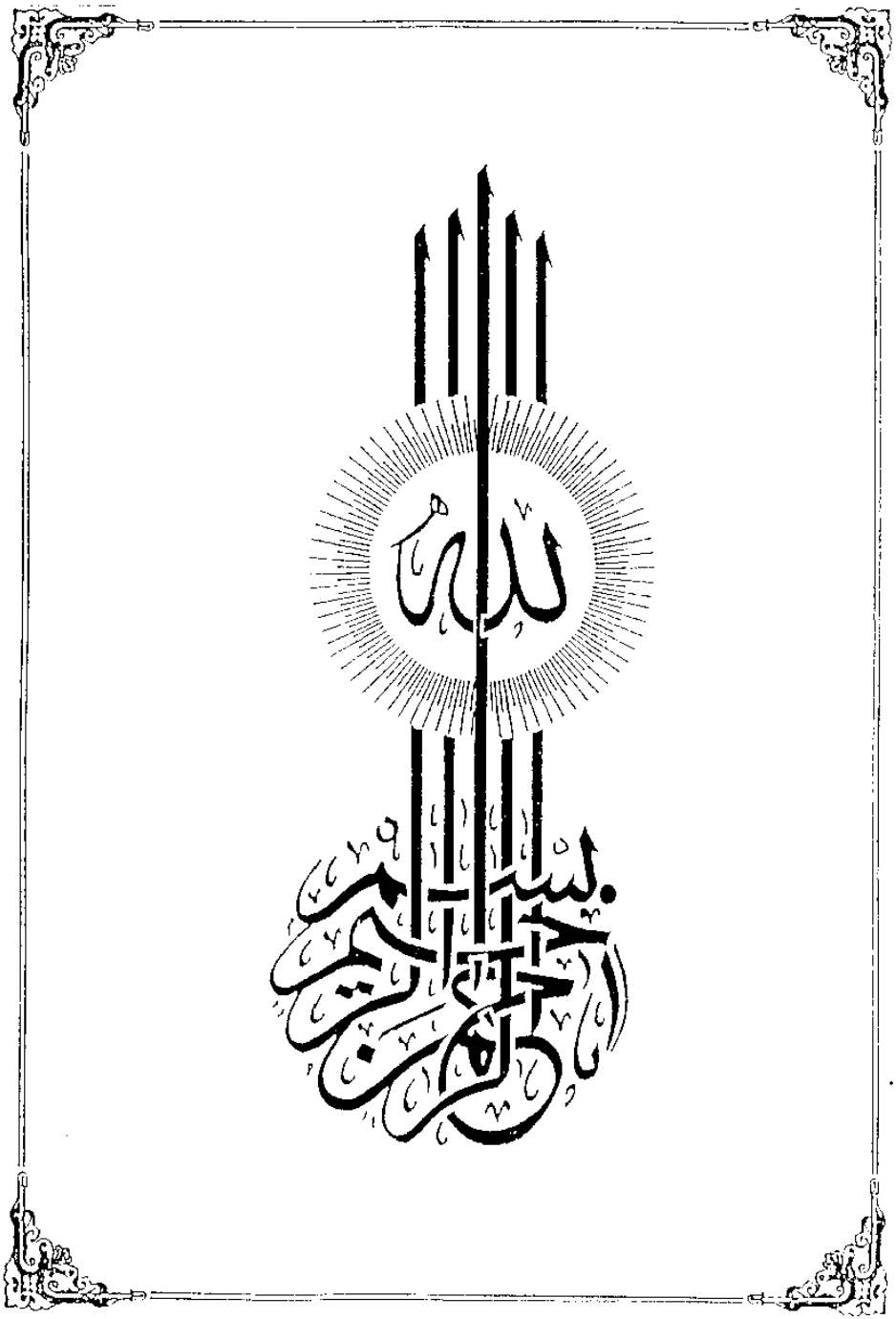

بسم الله الرحمن الرحيم

وفوق كل ذي علم عليم

صدق الله العظيم

Acknowledgment

First of All,

Thanks GOD who allowed and helped me to accomplish this work

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List of Abbreviations

Abbreviation	Full name
Ala	Alanine
APC	Antigen Presenting Cell
Arg	Arginine
Asp	Aspartate
bp	Base pair
C gene segment	Constant Gene Segment
CD	Cluster Of Differentiation
CDC	Complement Dependent Cytotoxicity
cDNA	Complementary DNA
CTLA	Cytotoxic T-Lymphocyte Antigen
D gene segmenet	Diversity Gene Segment
EAE	Experimental Allergic Encephalomyelitis
H	Heavy chain
HLA	Human Leucocyte Antigen
Hsps	Heat Shock Proteins
Ia	Immune activation
IDDM	Insulin Dependent Diabetes Mellitus
IEF	Iso Electric Focusing
Ig	Immunoglobulin
IL	Interleukine
IR	Immune Response
J gene segment	Joining Gene Segment
κ	Kappa
Kb	Kilobase
KD	Kilo Dalton
L	Light chain
λ	Lambda

Introduction and Aim of work

"Genetics in Autoimmune Diseases"

Introduction

The determinant role of genetic factors in the etiology of autoimmune diseases is well established as assessed by the high concordance rate between monozygotic twins, and between siblings for most autoimmune diseases.

Genes of the major histocompatibility complex (MHC) have by far the strongest association. Nevertheless most individuals with diseases associated HLA molecules don't develop autoimmune diseases, suggesting additional factor. T-cell antigen receptors are candidates for genetic susceptibility as T-cell receptors recognize peptides in context of HLA molecules. Other genes are candidates for genetic susceptibility to autoimmune diseases such as immunoglobulin genes, cytokine genes and recently apoptosis genes.

Diagnosis of autoimmune diseases through the study of molecular genetics directs physicians and scientists towards the better understanding of these disorders and raises the hope for treating these disorders through the gene therapy.

Immunotherapeutic approaches towards autoimmune diseases could be applied such as monoclonal antibodies to the differentiation markers on T-cells, anti-TCR Vβ (T-cell receptor variable region of β chain) antibodies, T-cell vaccination and immunotherapy with peptide antigen which is the best choice.

Aim of the Work :-

The aim of the work is to review the study of genetics of the autoimmune diseases giving better understanding of these diseases, helping in the prevention and management of these disorders.

Review of Literature