



Lectin and its possible role in allergic rhinitis

Thesis

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٢٠١٦

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْحَكِيمُ

صَدَقَ اللَّهُ الْعَظِيمُ



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List of Abbreviations

ABPA	Allergic Bronchopulmonary Aspergillosis
ACE	Angiotensin-Converting Enzyme
APCs	Antigen Presenting Cells
ARIA	Allergic Rhinitis and its Impact on Asthma
ASA	Acetylsalicylic Acid
C	Complement
CCL	Chemokine Ligand
CD	Cluster of Differentiation
CLRs	C-Type Lectin Receptors
CPA	Chronic Pulmonary Aspergillosis
CRDs	Carbohydrate-Recognition Domains
CS	Corticosteroid
CT	Computed Topography
CTLD	C-type Lectin Like Domain
CVID	Common Variable Immunodeficiency
DCs	Dendritic Cells
DC-SIGN	Dendritic Cell-Specific Intracellular adhesion molecule 3-grabbing Non- integrin
DEC-205	
DNGR-1	Dendritic cell Natural Killer lectin group receptor-1
ELISA	Enzyme linked immunosorbent assay
HEPA	High-Efficiency Particulate Air
HIV	Human Immune Deficiency Virus

List of Abbreviations

HRP	.....	Horseradish Peroxidase
IFN	.....	Interferon
IgE	.....	Immunoglobulin E
IL	.....	Interleukin
ISAAC	.....	International Study on Asthma and Allergies in Childhood
LTA	.....	Leukotriene Antagonist
LTRAs	.....	Leukotriene Receptor Antagonists
MAC	.....	Membrane Attack Complex
MASPs	.....	Mannan binding lectin Associated Serine Proteases
MBL	.....	Mannan Binding Lectin
MC	.....	Mast Cell
MMR	.....	Macrophage Mannose Receptor
MR	.....	Mannose Receptor
NARES	.....	Non-allergic rhinitis with eosinophilia syndrome
NPV	.....	Negative Predictive Value
NSAIDs	.....	Non-Steroidal Anti-inflammatory Drugs
OD	.....	Optical Density
OTC	.....	Over the Counter
PAMP	.....	Pattern Associated Molecular Patterns
PBE	.....	Peripheral Blood Eosinophilis
PMBCs	.....	Polymorphic Blood Nuclear Cells
PPV	.....	Positive Predictive value
PRRs	.....	Pattern-Recognition Receptors
rhMBL	.....	Recombinant human Mannan Binding Lectin

📖 List of Abbreviations

Roc curve	Receiver Operating Characteristic curve
SC	Subcutaneous
SD	Standard Deviation
SLE	Systemic Lupus Erythematosus
SNPs	Single Nucleotide Polymorphisms
SP-A	Surfactant Protein A
SP-D	Surfactant Protein D
Th	T-helper
TLRs	Toll-Like Receptors
TMB	Tetramethylbenzidine
TSLP	Thymic Stromal Lympho-Poietin

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Abstract

Allergic rhinitis is a symptomatic disorder of the nose induced after allergen exposure due to an IgE-mediated inflammation of the membranes lining the nose. Mannan-binding lectin (MBL), a protein of the innate immune system coded for by the *MBL2* gene, constitutes an important effector molecule of innate immunity in the serum. It binds allergens/antigens, activates the lectin complement pathway and modulates the levels of proinflammatory cytokines.

The current study involved 60 adult patients with allergic rhinitis and 30 healthy medically free control subjects. There was no statistically significant difference between patients and control as regard gender or age. When serum MBL level was compared between cases and controls, a high statistically significant difference was detected.

On comparing serum MBL level among various study parameters only statistically significant difference was detected between patients with mild AR and those with moderate to severe AR. Although there was a positive correlation between MBL serum level and age and duration of illness (yrs), there was no statistical significance as well as an inverse correlation with serum total IgE level.

Key Words

Allergic Rhinitis, Lectins, Mannan Binding Lectin,
Complement pathway, Allergy.