Recent Therapeutic Modalities In Atopic Dermatitis

Essay

Submitted for partial fulfillment of Master Degree in Dermatology, Venerology and Andrology

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بسم الله الرحمن الرحيم

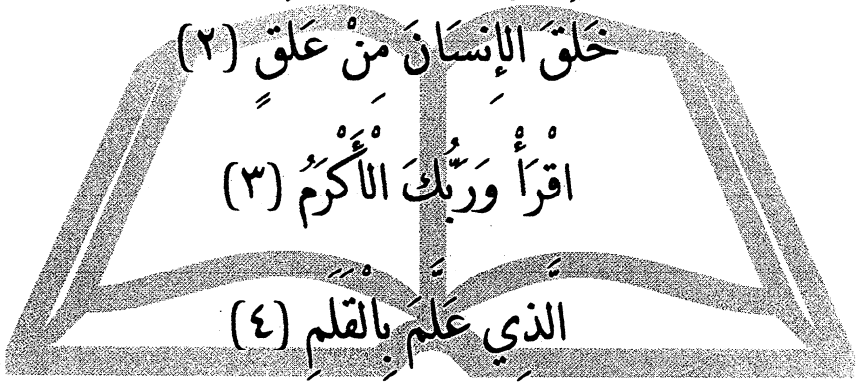
﴿ اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ (١)

خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ (٢)

اقْرَأْ وَرَبُّكَ الْأَكْرَمُ (٣)

الَّذِي عَلَّمَ بِالْقَلَمِ (٤)

عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ (٥) ﴾



صدق الله العظيم

سورة العلق

آية ١ ـ ٥

إهداء

أهدى عملى ومجهودى هذا إلى روح أبى الحبيب ومعلمى الأول، راجيةً من الله أن يجعله فى ميزان حسناته.

هبة الله عبدالمنعم عودة

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8-MOP	:	8- methoxypsoralen
AAAAI	:	American Academy of Allergy, Asthma and Immunology
ACAAI	:	American College of Allergy, Asthma and Immunology
AD	:	Atopic dermatitis
APCs	:	Antigen presenting cells
BMV	:	Betamethasone valerate
cAMP	:	Cyclic AMP
CAM	:	Complementary alternative medicine
CD	:	Cluster of differentiation
CE	:	Cornified envelope
Chromosome 5q31	:	The 31st band of the long arm of chromosome number5
CLA	:	Cutaneous lymphocyte-associated antigen
CTACK	:	Cutaneous T-cell-attracting chemokine
CTCL	:	Cutaneous T-cell lymphoma
DBPCFC	:	Double-blind, placebo-controlled oral food challenge
DC	:	Dendritic cells
EASI	:	Eczema area and severity index
ECP	:	Eosinophil cationic protein
ECP	:	Extracorporeal photopheresis
EDC	:	Epidermal differentiation complex
EDN	:	Eosinophil-derived neurotoxin
EPX	:	Eosinophil protein X
FcεR1	:	the β chain of the high affinity IgE receptor
FDA	:	Food and Drug Adminstration
FKBP	:	FK binding protein

FLG	**:**	filaggrin gene ; filament-aggregating protein gene
FTU	**:**	Fingertip unit
Glu	**:**	Glutamine amino acid
GM-CSF	**:**	Granulocyte-macrophage colony-stimulating factor
GRA	**:**	Glycyrrhetinic acid
HβD	**:**	Human beta defensins
ICAM-1	**:**	Intercellular adhesion molecule -1
IDEC	**:**	Inflammatory dendritic epidermal cells
IFN-γ	**:**	Interferon-**γ**
IgE	**:**	Immunoglobulin E
IL	**:**	Interleukin
IL-4R	**:**	Interleukin-4 receptor
IP3	**:**	Inositol triphosphate
IV	**:**	Icthyosis vulgaris
KC	**:**	Keratinocytes
LC	**:**	Langerhans cells
LEP	**:**	Late envelope proteins
LPR	**:**	Late phase reaction
LPS	**:**	Lipopolysaccarides
LTC 4	**:**	Leukotriene C4
LTRAs	**:**	Leukotriene receptor antagonists
Lys	**:**	Lysine amino acid
m RNA	**:**	Messenger RNA
MBP	**:**	Major basic protein
MC	**:**	Mast cells
MCP	**:**	Monocyte chemotactic protein
mDC	**:**	Myeloid Dendritic cells

MDC	**:**	Macrophage-derived chemokine
MHC	**:**	Major histocompatibility complex
MIP	**:**	Macrophage inflammatory protein
MMP	**:**	Matrix metalloproteinase
Mo	**:**	Monocytes
NFATc	**:**	Nuclear factors of activated T cells cytoplsmic
NFATp	**:**	Nuclear factors of activated T cells phosphorylated
NK	**:**	Natural killer cell
NMF	**:**	Natural moisturizing factor
PAD	**:**	Peptidyl arginine deaminase
PAF	**:**	Platelet-activating factor
PBMC	**:**	Peripheral blood mononuclear cells
pDC	**:**	Plasmacytoid Dendritic cells
PDEIs	**:**	Phosphodiestrase enzyme inhibitors
PGE2	**:**	Prostaglandin E2
PPARs	**:**	Peroxisome proliferator-activated receptors
PPAR-γ	**:**	γ subtype of Peroxisome proliferator-activated receptors
PUVA	**:**	Psoralen + ultraviolet A
RANTES	**:**	Regulated upon activation normal T-cell expressed and secreated
S.aureus	**:**	Staphylococcus aureus
SCIT	**:**	Subcutaneous specific immunotherapy
SCORAD	**:**	Scoring Atopic Dermatitis
SEB	**:**	Staphylococcal enterotoxin B
SIT	**:**	Specific immunotherapy
SLIT	**:**	Sublingual immunotherapy
SPINK5	**:**	serine protease inhibitors, Kazal type 5
SPRs	**:**	Small proline-rich proteins

STAT	**:**	signal transducer and activator of transcription
T reg cells	**:**	T regulatory cells
TARC	**:**	Thymus and activation- regulated chemokine
Tc cells	**:**	T cytotoxic cells
TCIs	**:**	Topical calcineurin inhibitors
TCM	**:**	Traditional Chinese medicine
TCR	**:**	T cell receptor
tel	**:**	telmestine
TGF-β	**:**	Transforming growth factor-β
Th	**:**	T helper cells
Th0	**:**	T helper type zero cells
TIMs	**:**	Topical immunomodulators
TLRs	**:**	Toll-like receptors
TNF	**:**	Tumor necrosis factor
UV	**:**	Ultraviolet
VCAM-1	**:**	Vascular cell adhesion molecule-1
VLA-4	**:**	Very late antigen 4
Vv	**:**	Vitis vinifera extract
WAPs	**:**	Written action plans

INTRODUCTION

Atopic dermatitis (AD) is a chronic inflammatory skin disorder usually presenting with severe pruritus and flaring eczematous lesions in varying localizations depending on the age of the patient. It is considered the most common chronic skin disease of young children **(Boguniewicz , 2005).**

The disease is based on both, a disturbance of the epidermal barrier and increased tendency to immunoglobulin E (IgE) production, partly on a genetic predisposition, upon being triggered by various environmental factors **(Bieber, 2008).**

Skin lesions are assumed to result from complex interactions between IgE-bearing antigen-presenting cells, T cell activation, mast cell degranulation, keratinocytes, eosinophils, and the combination of immediate and cellular immune responses **(Novak and Bieber, 2005),** fostered by defects of the physical barrier, such as stratum corneum lipid-protein disturbances resulting, among others, from filaggrin gene mutations **(Weidinger et al., 2008).**

Treatments for AD are aimed at controlling inflammation with emollients, topical corticosteroids, and topical immune-