CHARACTERIZATION OF DIFFERENT CLINICAL PHENOTYPES FOR PSORIASIS IN EGYPTIAN PATIENTS

Thesis

Submitted for Partial Fulfillment of the Master Degree in Dermatology, Venereology and Andrology

Presented by KARIM ABD ELFATTAH AGGOUR

M.B.B.Ch. Faculty of Medicine

Under Supervision of

Dr.MAHIRA HAMDY EL SAYED

Professor of Dermatology, Venereology and Andrology Faculty of Medicine – Ain-Shams University

Dr. GHADA FATHY MOHAMED

Assistant Professorof Dermatology, Venereology and Andrology Faculty of Medicine –Ain-Shams University

> Faculty of Medicine Ain-Shams University

> > 2015

بسو الله الرحمن الرحيم خانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم

حدق الله العظيم

سورة البعرة الاية 32

Acknowledgements

First and foremost, I feel always deeply indebted to ALLAH, the most Gracious and most Merciful.

I am greatly honored to express my sincere appreciation to **Prof**. **Dr. Mahira Hamdy El Sayed** professor of Dermatology, Venereology and Andrology Faculty of Medicine-Ain Shams university for her constructive and instructive comments, and valuable suggestions. She encourages me all the time for a better meaningful performance, without her help and sense of perfection this work would not have been accomplished in its present picture, thank you for guiding me all through the way.

I Would like to express my deepest gratitude to **Dr. Ghada**Fathy Mohamed assistant professor of Dermatology, Venerology and

Andrology Faculty of Medicine-Ain Shams University, Who kindly

supervised and motivated the performance of this work by her accuracy

and professionalism that offered us reliable results and for her

generosity in time and effort, and her unique sense of cooperation.

I am very grateful to all dermatologists that kindly participated in this work by offering help in medical university hospitals across Egypt.

I would also like to acknowledge my precious colleagues and senior staff and every member in the Dermatology, Venereology and Andrologydepartment for their love and support. I am extraordinarily lucky to be a part of this one great family department.

KARIM AGGOUR

Contents

	Pages
List of Abbreviations	I
List of Tables	Ш
List of Figures	V
INTRODUCTION & AIM OF WORK	1
REVIEW OF LITERATURE:	
CHAPTER I: An Overview on Psoriasis	
• CLINICAL VARIENTS OF PSORIASIS	3
 TRIGGERING FACTORS 	8
 ASSESSMENT OF DISEASE SEVERITY 	14
 TREATMENT OF PSORIASIS 	18
 CO-MORBIDITIES IN PSORIASIS 	21
 PHENOTYPES OF PSORIASIS 	38
PATIENTS AND METHODS	41
RESULTS	47
DISCUSSION	70

SUMMARY	77
CONCLUSION AND RECOMMENDATIONS	80
REFERENCES	82
ARABIC SUMMARY	

List of Abbreviations

ACE inhibitors	Angiotensin-converting enzyme inhibitors
BSA	Body surface area
Ст	Centimeter
DLQI	Dermatology life quality index
FFAs	Free fatty acids
Fig	Figure
GWAS	Several Genome-wide association studies
HDL-C	Reduced high density lipoprotein-cholesterol
HIV	Human immunodeficiency virus
IL	Interleukin
IMID	Immune-mediated inflammatory disease
MCA	Multiple correspondence analysis
MetS	Metabolic syndrome
МНС	Major histocompatibility complex
Mm	Millimeter
MTX	Methotrexate
N	Number
NAFLD	Non-alcoholic fatty liver disease
NSAIDs	Non-steroidal anti-inflammatory drugs
PAI	Plasminogen activator inhibitor
PASI	Psoriasis area and severity index
PDGF	Platelet derived growth factor
PGA	Physicians global assessment
PsA	Psoriatic arthritis
Prob.	Probability
PSORS 1-9	Psoriasis Suscetibility 1-9

PUVA	Psoralen Ultraviolet A
sdLDL	Small dense low-density lipoprotein
SPSS	Statistical Package for Social Science
TGF	Transforming growth factor
Th	T helper
TNF-α	Tumor necrosis factor alpha
Refs	Reference

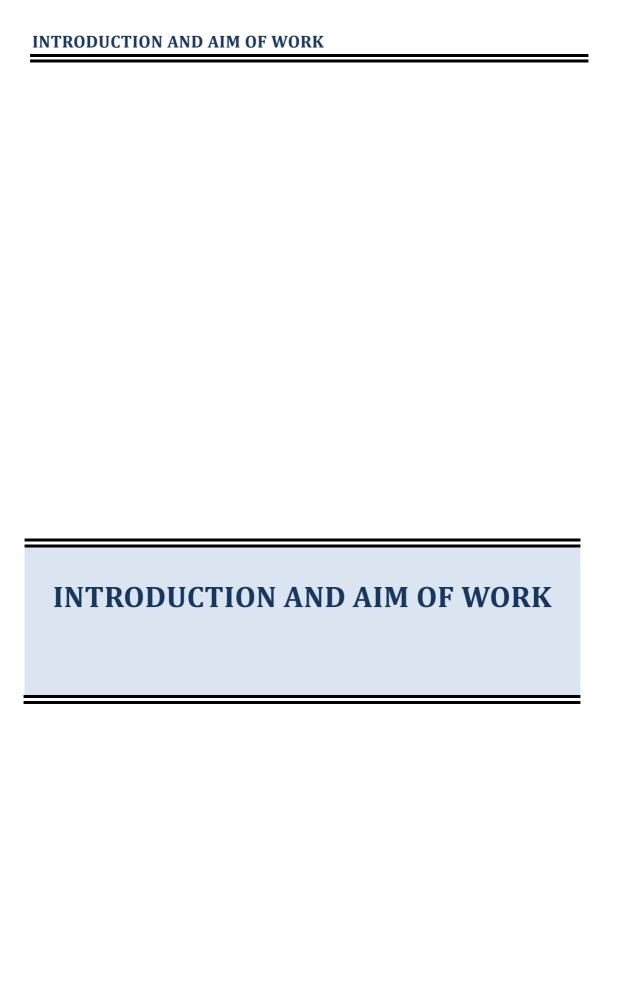
List of Tables

Table(N)		Page
Table (1)	Summary of different types of Psoriasis.	7
Table (2)	Validated psoriasis –associated genes.	10
Table (3)	The "Dermatology Life Quality Index" (DLQI) to evaluate the impact on quality of life by a skin disease (e.g. psoriasis)	17
Table (4)	Co-morbidities in Psoriasis.	23
Table (5)	The CASPAR criteria for diagnosing psoriatic arthritis.	26
Table (6)	International Diabetes Federation metabolic syndrome worldwide definition.	31
Table (7)	Epidemiology of Psoriasis co-morbidities.	34
Table (8)	Drugs as trigger factor for Psoriasis.	36
Table (9)	The risk of drug interaction in Psoriasis therapy.	37
Table (10)	Psoriasis questionnaire.	42
Table (11)	Description of personal and family history among study cases.	47
Table (12)	Description for age of disease onset, pruritis and clinical course among cases	49
Table(13)	Description of clinical aspect of lesions (morphology) among cases	50

Table (14)	Description of lesions' distribution among cases	51
Table (15)	Description of triggering factors among cases	52
Table (16)	Description of disease reaction after exposure to sun and sea among cases	53
Table (17)	Description of medical characteristics	54
Table (18)	Total Variance Explained Component one	55
Table (19)	Matrix of variables of Component one (%)	56
Table (20)	Total Variance Explained Component two.	56
Table (21)	Matrix of variables of Component two (%).	57
Table (22)	Total Variance Explained Component three.	57
Table (23)	Matrix of variables of Component two (%).	58
Table (24)	Auto-Clustering of the study variables.	60
Table (25)	Characteristics of identified clinical phenotypes of psoriasis	63
Table (26)	Frequency of patients' characteristics in overall study population and in clusters and statistical comparison of	68

List of Figures

Figure (N)		Pages
Fig. (1)	Clinical types of psoriasis.	6
Fig. (2)	Psoriasis Area and Severity Index.	16
Fig. (3)	Decision tree for psoriasis management	20
Fig. (4)	Ratio of Female to Male.	48
Fig. (5)	Ratio of Personal History of Atopy.	48
Fig. (6)	Ratio of Family History for Psoriasis, PsA and Atopy.	49
Fig. (7)	Ratio for Age of Onset.	50
Fig. (8)	Ratio for Clinical Aspects of Psoriasis.	51
Fig. (9)	Ratio of reactions to Sun light and Sea water exposure	53
Fig.(10)	Ratio of Co-morbidities	54
Fig. (11.a)	Graphical Representation of the Relationship between Clinical Variables using the First and Second Components as an Axes.	59
Fig. (11.b)	Graphical Representation of the Relationship between Clinical Variables using the Second and Third Components as an Axes.	59
Fig.(12.a)	Description of over or under representation of each clinical feature in each type for component number one.	61
Fig.(12.b)	Description of over or under representation of each clinical feature in each type for components number two and three.	62



Introduction

Psoriasis is a serious inflammatory skin disease affecting about 2.5% of the general population, it has been considered to be a single disease entity, characterized by a spectrum of well-defined clinical symptoms. It is based on this assumption that the vast majority of genetic, pathophysiological and therapeutic research has been conducted in this disease (Naldi et al, 2004).

An alternative hypothesis is that psoriasis represents a common pattern of different inflammatory skin diseases, each resulting from different specific pathophysiological processes and responding better to different treatments, indeed several findings support this latter hypothesis. In particular, psoriasis beginning early in life seems to be clinically and genetically different from late onset disease(Stuart et al, 2002, Ferrandiz et al, 2002). Many different genetic loci have been associated with psoriasis, again suggestive of multiple disease forms (Capon et al, 2004).

It was accepted that there are a number of distinct phenotypes of psoriasis, genetic and/or environmental factors are under intense evaluation, it is important to come to a consensus on the classification of phenotypes of psoriasis such consensus will simplify stratification of psoriasis phenotypes and facilitate their link to confirmed investigational data (Whalley et al, 2004).

There is also variation of features of psoriasis dependent on anatomical sites. Until the reasons for this variation are fully understood it is proposed that they are recorded as a phenotypic entity, although subsequently they may be shown to be part of a common pathogenetic mechanism (Griffiths et al, 2007).

A further distinction arises according to the age of onset of the plaque psoriasis type I < 40 & type II > 40 year of age in which genetic evidence indicates that these forms distinguished according to association with genes within the major histocomptability complex class I on chromosome 6p, most notably HLA-cw 0602 while type II is not associated (Chren et al, 1997).

Aim of the Work

The aim of this study is to identify distinct clinical phenotypes of psoriasis in Egyptian patients.

OVERVIEW OF PSORIASIS

(CHAPTER I)