

بسم الله الرحمن الرحيم



HOSSAM MAGHRABY



شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



HOSSAM MAGHRABY

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
على هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



HOSSAM MAGHRABY



Clinical and Laboratory Characteristics of Psoriatic Arthritis in a Cohort of Egyptian Patients

Thesis

Submitted for Partial Fulfillment of Master degree in
Rheumatology

By

Rofida Abdellatif Ibrahim Ghalwash
M.B.B.Ch.

Supervised by:

Prof. Dr. Adel Mahmoud Ali Elsayed
Professor of Internal Medicine and Rheumatology
Head of Rheumatology Unit
Faculty of Medicine – Ain Shams University

Prof. Dr. Noran Osama Ahmed El-Azizi
Professor of Internal Medicine and Rheumatology
Faculty of Medicine – Ain Shams University

Ass. Prof. Dr. Dalia AbdelHamid ElSherbiny
Assistant Professor of Internal Medicine and
Rheumatology
Faculty of Medicine – Ain Shams University

Faculty of Medicine
Ain Shams University
2021

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سُبْحَانَكَ لَا عِلْمَ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

صدق الله العظيم

سورة البقرة الآية: ٣٢

Acknowledgments

First and foremost, I feel always indebted to Allah the Most Beneficent and Merciful.

I would like to express my deepest feelings of thanks and gratitude to Professor Dr. Adel Mahmoud Ali Elsayed, Professor of Internal Medicine and Rheumatology, Ain Shams University, who offered me much of his valuable experience, time, support, encouragement and advice throughout this work.

I wish to express my great thanks and gratitude to Dr. Noran Osama Ahmed El-Azizi, Professor of Internal Medicine and Rheumatology, Ain Shams University, for her support, time, advice, meticulous revision and constructive guidance that helped me through this work.

I am deeply thankful and grateful to Dr. Dalia AbdelHamid ElSherbiny, Assistant Professor of Internal Medicine and Rheumatology, Ain Shams University, for her trust in my work and for his unlimited help and support.

My thanks should go to patients of Psoriatic Arthritis who were the subjects of this work and who cooperated in this research and give me their time, and without whom this work would not done.

Rofida Abdellatif Ghalwash

List of Contents

Title	Page No.
List of Tables.....	i
List of Figures	iv
List of Abbreviations.....	vi
Introduction	1
Aim of the Work	3
Review of Literature	
Epidemiology	4
Pathogenesis.....	19
Diagnosis	30
Treatment.....	62
Subjects and Methods.....	80
Results.....	89
Discussion	120
Summary	135
Conclusion	143
Recommendations	144
References	145
Arabic Summary	—

List of Tables

Table No.	Title	Page No.
Table (1):	Genome-wide methylation studies in Ps.	29
Table (2):	Major clinical subtypes of psoriatic arthritis.....	33
Table (3):	Classification criteria of PsA (CASPAR).....	46
Table (4):	Screening questionnaires for PsA	48
Table (5):	Indications for MSKUS in PsA.....	57
Table (6):	Differential diagnosis of PsA and distinguishing features.....	59
Table (7):	Medications used in the treatment of psoriatic arthritis.....	65
Table (8):	EULAR recommendations for pharmacological management of PsA.	75
Table (9):	Summary of GRAPPA recommendations for therapies by domain	77
Table (10):	Demographics of the patients.....	89
Table (11):	Associated Co-morbidities and Family history of rheumatological disease.....	91
Table (12):	Number and mean latency time in different forms of disease onset.	92
Table (13):	Characteristics of Arthritis.	93
Table (14):	Other Musculoskeletal manifestations and ocular manifestation.....	94
Table (15):	Skin manifestations.....	94
Table (16):	Frequency of drugs taken by patients.	95
Table (17):	Different drug combinations taken by patients.	96
Table (18):	Laboratory data.	97
Table (19):	Clinical Pattern of joint involvement.....	98
Table (20):	Patients' disease activity scores (median and range).	99

List of Tables Cont...

Table No.	Title	Page No.
Table (21):	Classification of patients according to level of disease activity.....	99
Table (22):	Different patterns of joint affection as regard demographics.	101
Table (23):	Different patterns of joint affection as regard associated comorbidities.....	103
Table (24):	Different patterns of joint affection as regard disease onset.	104
Table (25):	Different patterns of joint affection as regard Dactylitis, Enthesitis and Uveitis.....	105
Table (26):	Different patterns of joint affection as regard skin lesions.....	106
Table (27):	Different patterns of joint affection as regard treatment.	107
Table (28):	Different patterns of joint affection as regard laboratory results.....	108
Table (29):	Different patterns of joint affection as regard assessment scores.	109
Table (30):	Association between DAS28 severity and demographics.	110
Table (31):	Association between DAS28 severity and co-morbidities of patients.....	112
Table (32):	Association between DAS28 severity and other musculoskeletal, skin and ocular manifestations.	113
Table (33):	Association between DAS28 severity and laboratory data.....	114
Table (34):	Association between ASDAS severity and demographics.	115
Table (35):	Association between ASDAS severity and co-morbidity of patients.	117

List of Tables Cont...

Table No.	Title	Page No.
Table (36):	Association between ASDAS severity and characteristics of arthritis.....	118
Table (37):	Association between ASDAS severity and other musculoskeletal, ocular and skin manifestation.	119
Table (38):	Association between ASDAS severity and laboratory data.....	121
Table (39):	Correlation between numeric variables and PsAID.	122
Table (40):	Reduced regression model for the variables.	123

List of Figures

Fig. No.	Title	Page No.
Figure (1):	PsA prevalence in patients with psoriasis world wide.	6
Figure (2):	Traditional disease pathogenesis model in psoriatic arthritis.	27
Figure (3):	Skin and joint inflammation in psoriasis vulgaris and PsA.	27
Figure (4):	Joint manifestation in PsA.	32
Figure (5):	Spondylitis, enthesitis and dactylitis in PsA.	35
Figure (6):	Nail Biting, Sub Angle Hyperkeratosis in PsA	37
Figure (7):	Acute anterior uveitis.	39
Figure (8):	Radiographic Features of PsA.	53
Figure (9):	Joint erosion seen in left sacroiliac joint in psoriatic arthritis.	54
Figure (10):	MRI in PsA.	55
Figure (11):	High-frequency gray-scale ultrasound for synovitis and enthesitis.	56
Figure (12):	GRAPPA treatment schema for active psoriatic arthritis.	64
Figure (13):	Age distribution of patients.	90
Figure (14):	Demographics of patients.	90
Figure (15):	Associated Co-morbidities and Family history of rheumatological disease.	91
Figure (16):	Characteristics of Arthritis.	93
Figure (17):	Frequency of drugs taken by patients.	95
Figure (18):	Clinical Pattern of joint involvement.	98

List of Figures Cont...

Fig. No.	Title	Page No.
Figure (19):	Classification of patients according to level of disease activity (DAS28).....	100
Figure (20):	Classification of patients according to level of disease activity (ASDAS).....	100

List of Abbreviations

Abb.	Full term
ACR	American College of Rheumatology
APC.....	Antigen-presenting cell
ASDAS.....	Ankylosing Spondylitis Disease Activity Score
CARD.....	Cascade-activating recruitment domain
CASPAR	Classification criteria for psoriatic arthritis
CBC	Complete blood count
CD.....	Crohn's disease
CORRONA	Consortium of Rheumatology Researchers of North America
CPA.....	Citrullinated protein antibodies
CPII	C-propeptide of Type II collagen
CRP.....	C-reactive protein
CT	Computed tomography
CVD	Cardiovascular disease
DAS.....	Disease activity score
DAS28.....	Disease Activity Score for 28 joints
DC-STAMP.....	Dendritic cell-specific transmembrane protein
DIP.....	Distal interphalangeal joint
DMARD	Disease-modifying anti rheumatic drug
DNA.....	Deoxyribonucleic acid
ESR.....	Erythrocyte sedimentation rate
EULAR	European League Against Rheumatism
FVIII.....	Factor VIII
GUESS	Glasgow Ultrasound Enthesis Scoring System
GWAS	Genome-wide association studies
HAQ.....	Health Assessment Questionnaire
HIV	Human immunodeficiency virus

List of Abbreviations Cont...

Abb.	Full term
hsCRP	Highly sensitive CRP
ICD-9	International Classification of Disease-9
IFN	Interferon
IgG	Immunoglobulin G
IL	Interleukin
LFT	Liver function test
MHC	Major Histocompatibility complex
MRI.....	Magnetic Resonance Imaging
MSKUS.....	Musculoskeletal Ultrasound
NAFLD	Non-alcoholic fatty liver disease
NASH	Non-alcoholic steatohepatitis
OCP	Osteoclast precursor
OPG	Osteoprotegerin
PASE	Psoriasis Arthritis Screening and Evaluation Questionnaire
PASI	Psoriasis Area and Severity Index
PEST.....	Psoriasis Epidemiology Screening Tool
PMNs.....	Polymorphonuclear neutrophils
PsA.....	Psoriatic arthritis
PsAID	Psoriatic Arthritis Impact of Disease
PsAQOL.....	Psoriatic Arthritis Quality of Life
PsARC	PsA Response Criteria
PSO	Psoriasis
QOL	Quality of Life
RA.....	Rheumatoid arthritis
RANKL.....	Regulation of nuclear factor kappa B ligand
RCTs.....	Randomized controlled trials
RF	Rheumatoid factor

List of Abbreviations Cont...

Abb.	Full term
RR.....	Relative risk
SiPAS.....	Simple Psoriatic Arthritis Screening questionnaire
SpA	Spondyloarthropathies
STRIPP.....	Screening Tool for Rheumatologic Investigation in Psoriatic Arthritis
SysPsD	Systemic Psoriatic Disease
TCR.....	T cell receptor
TICOPA.....	Tight Control of Psoriatic Arthritis
TNF	Tumor necrosis factor
ToPAS.....	Toronto Psoriatic Arthritis Screen
UC.....	Ulcerative colitis
VAS.....	Visual Analogue Scale