BORRELIA BURGDORFERI SPECIFIC SERUM IgG IN PATIENTS WITH ARTHRITIS

THESIS

SUBMITTED FOR PARTIAL FULFILMENT OF M.S. Degree in

CLINICAL AND CHEMICAL PATHOLOGY

By Amal Farouk Mohamed Barakat M.B.B.Ch.

1 52 7 8 8 9

SUPERVISED BY

Prof. Dr. Ibrahim Khalil Ali

Prof. of Clinical Pathology

Faculty of Medicine - Ain Shams University

Prof. Dr. Amira Mohammed Moukhta

Ass. Prof. of Clinical Patholology
Faculty of Medicine - Ain Shams University

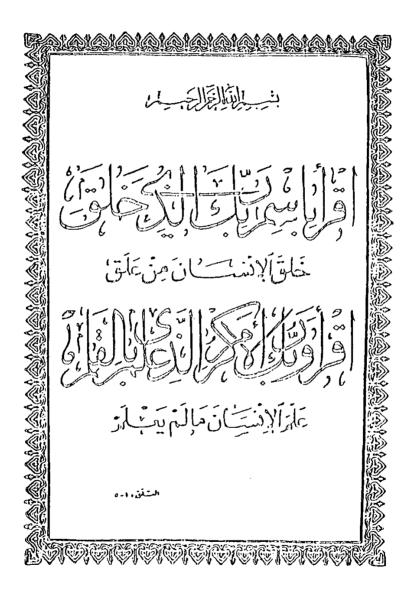
Dr. Nahed Ahmed Mahmoud Afify Lecturer of Clinical Pathology

Faculty of Medicine - Ain Shams University

Faculty of Medicine Ain Shams University 1996

د. نیروبل





ACKNOWLEDGMENT

Words can never express my deepest gratitude and appreciation to *Prof. Dr. Ibrahim Khalil Ali, Professor of Clinical Pathology, Ain Shams University*, for his great supervision, unforgettable valuable generous advice and faithful guidance.

My particular and deepest thanks to *Prof. Dr. Amira*Mohammed Moukhtar, Assistant Professor of Clinical

Pathology, Ain Shams University, who showed extraordinary care
and guidance to me all through this study.

I am grateful to *Dr. Nahed Ahmed Mahmoud Afify,*Lecturer of Clinical Pathology, Ain Shams University for her great support, great help and unending guidance in preparing and finishing this work.

LIST OF TABLES

Table (1):	Properties of the families of the order Spirochaetales
	(p. 3)
Table (2):	Classification of pathogenic spirochaetes (p. 5)
Table (3):	Phenotypic characteristics of spirochaetes (p. 6)
Table (4):	Characteristics and distribution of arthropod-borne
	borreliae (p. 8)
Table (5):	Epidemiologic studies of Lyme disease in the United
	States (p. 28)
Table (6):	Manifestations of Lyme disease by stage (p. 34)
Table (7):	Treatment regimens for Lyme disease (p. 49)
Table (8):	Borrelia burgdorferi serum IgG in patients and control
	groups (p. 64)
Table (9):	Clinical data of the ELISA IgG positive patients (p. 65)
Table (10):	Results of clinical and serological diagnosis in patients
	with arthritis of undetermined aetiology (p. 66)
Table (11):	Incidence of B. burgdorferi IgG antibodies in serum of
	patients with different types of joints affection (p. 67)
Table (12):	Incidence of positivity of B. burgdorferi IgG antibodies
` ,	in serum of patients with and without knee arthritis
	(p. 68)
Table (13):	Incidence of positivity of B. burgdorferi IgG antibodies
` ,	in serum of patients according to the number of joints
	affected (p. 68)
Table (14):	Incidence of B. burgdorferi IgG antibodies in serum of
	patients according to the course of arthritis (p. 69)
Table (15):	Laboratory data of patients with ELISA positive IgG
. ,	antibodies to B. burgdorferi (p. 70)
	,



LIST OF FIGURES

Fig. (1): Electron micrograph of cross section through Borrelia burgdorferi, the agent responsible for Lyme disease (p. 11) Fig. (2): Comparison between patients and control groups regarding incidence of B. burgdorferi lgG (p. 71) Fig. (3): Comparison between different types of inflammed joints regarding incidence B. burgdorferi IgG (p. 72) Frequency of affected joints in the 12 positive patients Fig. (4): for B. burgdorferi IgG (p. 73) Fig. (5): Comparison between patients with and without knee arthritis regarding incidence of B. burgdorferi IgG (p. 74) Fig. (6): Comparison between mono and polyarthritis regarding incidence of B. burgdorferi IgG (p. 75) Fig. (7): Comparison between different courses of arthritis

regarding incidence of B. burgdorferi IgG (p. 76)

CONTENTS

INTRODUCTION AND AIM OF THE WORK REVIEW OF LITERATURE	1
Spirochaetes	
- Classification of spirochaetes	2
- Taxonomy of <i>Borrelia</i>	4
Borrelia burgdorferi	
- Historical aspects	9
- Taxonomy	9
 Morphology and ultrastructure 	10
- Staining properties	12
- Cultural properties	13
- Antigenic structure	17
- Immune response	20
Lyme disease	
- Historical aspects	25
- Epidemiology	26
- Pathogenesis	30
 Clinical manifestations 	32
 Lyme disease during pregnancy 	38
 Laboratory diagnosis 	38
- Treatment	47
 Prevention and control 	48
SUBJECTS AND METHODS	51
RESULTS	61
DISCUSSION	77
CONCLUSION AND RECOMMENDATIONS	81
SUMMARY	
REFERENCES	
ARABIC SUMMARY	



INTRODUCTION AND AIM OF THE WORK

