

# بسم الله الرحمن الرحيم



-C-02-50-2-





شبكة المعلومات الجامعية التوثيق الالكتروني والميكرونيلم





# جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

### قسم

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



يجب أن

تحفظ هذه الأقراص المدمجة يعيدا عن الغيار













بالرسالة صفحات لم ترد بالأصل





B/20 49

## AN EPIDEMIOLOGICAL STUDY OF BRUCELLOSIS IN ALEXANDRIA

#### THESIS

Submitted to The High Institute of Public Health – Alexandria
University
In partial fulfillment of the requirements for the
Degree of Master
In
Public Health ( Epidemiology )

## Maha Ibrahim Adel Mohamed Farag

MBBCh. Faculty of Medicine. University of Alexandria. 1994 DPH. Maternal and Child Health. HIPH. University of Alexandria. 1999 DPH. Epidemiology. HIPH. University of Alexandria. 2001

The High Institute of Public Health
Alexandria University
2005

#### **Supervisors**

Dr. Mostafa Ahmed Arafa Assistant Professor of Epidemiology

High Institute of Public Health University of Alexandria

Prof. Ahmed Ezzat H. Abdou WHO Advisor For Zoonotic Diseases

Professor Emeritus of Nutrition and Zoonotic Diseases

High Institute of Public Health University of Alexandria

Dr. Nahla K. Ragab

Assistant Professor of Epidemiology
High Institute of Public Health
University of Alexandria

A. W. Alobey

2,134

#### Acknowledgement

First of all, I thank GOD for helping me to accomplish this work.

My deepest thanks and appreciation to **Prof. Aida Ali Reda**, Professor of Epidemiology, Head of Epidemiology Departement, High Institute of Public Health, University of Alexandria.

I would like to express my profound appreciation to **Dr. Mostafa Ahmed Arafa**, Assistant Professor of Epidemiology, High Institute of Public Health, for his valuable instructions, enormous support, great advice and endless help.

I have great pleasure to express my sincere gratitude to **Dr. Ahmed Ezzat H. Abdou,** WHO Advisor For Zoonotic Diseases, Professor Emeritus of Nutrition and Zoonotic Diseases, High Institute of Public Health, for his kind guidance and his cooperation throughout the work.

A very special debt of gratitude and appreciation to **Dr. Nahla K. Ragab**, Assistant Professor of Epidemiology, High Institute of Public Health, for her continuous encouragement, generous guidance.

My great appreciation extend to **Dr. Ahmed Mohamed Mandil**, Professor of Epidemiology, High Institute of Public Health, for his participation and his valuable instructions during the first part of the study.

I would like to express my appreciation to **Dr. Said Gaber Attia**, The head of Epidemiology and Surveillance Unit, Directorate of Health Affairs in Alexandria, for his cooperation.

No word can adequately express my thanks to my father, my dear mother and my husband for their never-ending love, support and tolerance.

At last, I express my gratitude to the patients who participated in this study and everyone who helped me during the work.

#### TABLE OF CONTENTS

i. Li	ist of Tables				
ii. L	ist of Figures				
I- 1	Introduction	Page			
His	Historical review				
Glo	obal burden of brucellosis problem	3			
Ove	erview of brucellosis in the Eastern Miditerranian Region	. 5			
Imp	pact of brucellosis on human being	14			
Imp	Impact of the problem in animals				
Infe	ectious cycle	20			
Imr	Immunity				
Lat	Laboratory diagnosis				
Pre	ventive measures in animals	28			
Pre	ventive measures in humans	31			
Rol	le of WHO	34			
II-	Aim of the work	38			
III-	Material and Methods	39			
IV-	Results	46			
V-	Discussion	72			
VI-	Conclusion	86			
VII-	Recommendations	88			
VIII	-Summary	89			
IX-	References	94			
	Appendix				
	Arabic Summary				

#### LIST OF TABLES

		Page
Table I	Number of human brucellosis cases in Egypt 1990-1999.	9
Table II	Number of human brucellosis cases in Alexandria 1990-2004.	11
Table III	Demographic distribution of brucellosis cases in Alexandria 1999-2004.	12
Table IV	Distribution of brucellosis cases according to districts, in Alexandria 1999-2004.	13
Table V	Monthly distribution of brucellosis cases in Alexandria 1999-2004.	14
Table VI	Number of infected versus tested animal Alexandria 2002,2003.	20
Table VII	The main reservoirs of different brucella species.	23
Table VIII	Distribution of brucellosis cases according to age and sex.	50
Table IX	Distribution of brucellosis cases according to residence.	50
Table X	Distribution of brucellosis cases among the seven districts of Alexandria.	52
Table XI	Distribution of brucellosis cases according to occupation.	52
Table XII	Distribution of brucellosis cases and their control according to presence of similar cases in family	55

or area of residence.

Table XIII	Distribution of brucellosis cases and their control according to food handling criteria.	55
Table XIV	Monthly distribution of brucellosis cases.	56
Table XV	Distribution of brucellosis cases and their control according to consumption of certain food items.	59
Table XVI	Distribution of brucellosis cases and their control according to dealing with animals.	62
Table XVII	Distribution of brucellosis cases and their control according to dealing with placenta.	62
Table XVIII	Multivariante logistic regression model. Adjusted odds ratio and 95% confidence interval of determinants of brucellosis infection.	64
Table XIX	Distribution of brucellosis cases and their control according to symptoms and signs.	66
Table XX	Distribution of brucellosis cases according to results of slide agglutination test.	69
Table XXI	Distribution of brucellosis cases according to performing brucella STA test.	69
Table XXII	Distribution of brucellosis cases according to results of brucella STA test.	69

Table XXIII	Distribution of brucellosis cases according to results of brucella blood culture test.	70
Table XXIV	Distribution of brucellosis cases according to laboratory criteria of confirmation.	70
Table XXV	Distribution of brucellosis cases according to notification to the directorate of veterinary medicine.	72
Table XXVI	Distribution of brucellosis cases according to the samples of milk products.	72
Table XXVII	Distribution of brucellosis cases In relation to health education.	72
Table XXVIII	Distribution of brucellosis cases according to completing an investigation form.	73

# Introduction

Brucellosis is one of the world's major zoonotic diseases and is responsible for enormous economic losses as well as considerable human morbidity in endemic areas.<sup>(1)</sup>

Although it is a notifiable disease in most countries in the region, it often remains unidentified and underreported. Most of human cases are diagnosed at an advanced stage and cause prolonged and distressing illness in people who are often the least able to afford it.

In Egypt, the awareness of medical practisoners in relation to brucellosis is weak, and public health laboratories are not carrying out diagnostic tests properly.<sup>(2)</sup>

Despite the control measures undertaken by the national authorities of the region, this disease remains a serious problem for both animals and humans. (3)

#### Historical review

Before Brucella melitensis was recognized as the cause of Malta fever in man, a disease causing the same symptoms in countries bordering the Mediterranean was known as Fibris undulans.

The organism was first isolated in 1880 from the spleens of 5 patients with fatal cases by David Bruce, a British military medical officer stationed in Malta who also described the aetiology of the disease in man in 1884.