

شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلو

بسم الله الرحمن الرحيم





MONA MAGHRABY



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلو



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



MONA MAGHRABY



شبكة المعلومات الجامعية التوثيق الإلكترونى والميكروفيلم

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 بعيدا عن الغبار



MONA MAGHRABY



Epidemiology of Fever of Unknown Origin At Imbabah Fever Hospital

Thesis

Submitted For Partial Fulfillment of Master Degree In Tropical Medicine

By

Maha Abdel Hamid Abdel Hamid Abdallah

M.B.B.Ch., Ain Shams University Diploma in tropical Medicine, Ain Shams University

Under Supervision of

Prof. Dr. Mubarak Mohamed Hussein

Professor of Tropical Medicine Faculty of Medicine - Ain Shams University

Dr. Amira Mahmoud Albalakosy

Lecturer of Tropical Medicine Faculty of Medicine - Ain Shams University

Dr. Mahmoud Ali Khalil

M.D Tropical Medicine Imbabah Fever Hospital

Faculty of Medicine Ain Shams University 2020



سورة البقرة الآية: ٣٢

Acknowledgment

First and foremost, I feel always indebted to AUAH, the Most Kind and Most Merciful.

I'd like to express my respectful thanks and profound gratitude to **Prof. Dr. Mubarak Mohamed Hussein**, Professor of Tropical Medicine Faculty of Medicine - Ain Shams University for his keen guidance, kind supervision, valuable advice and continuous encouragement, which made possible the completion of this work.

I am also delighted to express my deepest gratitude and thanks to **Dr. Amira Mahmoud Albalakosy**, Lecturer of Tropical Medicine Faculty of Medicine - Ain Shams University, for her kind care, continuous supervision, valuable instructions, constant help and great assistance throughout this work.

I am deeply thankful to **Dr. Mahmoud Ali Khalil,** M.D Tropical Medicine Imbabah Fever Hospital, for his great help, active participation and guidance.

Maha Abdel Hamid

List of Contents

Title	Page No.
List of Tables	
List of Figures	iii
List of Abbreviations	v
Introduction	1
Aim of the Work	4
Review of Literature	
Fever	5
Epidemiology of FUO	38
Patients and Methods	48
Results	58
Discussion	107
Summary	119
Conclusion	121
Recommendations	122
References	123
Arabic Summary	

List of Tables

Table No.	Title	Page No.
Table (1):	Demographic Data among studied conumber 350 cases)	
Table (2):	Co-morbidities, past history and fan among studied cases	•
Table (3):	Risky behavior and exposures amo	_
Table (4):	Duration and pattern of fever among str	udied cases65
Table (5):	Symptoms associated with fever ame cases	•
Table (6):	Vital signs among studied cases	
Table (7):	Clinical features and head-neck amo	ong studied
Table (8):	General and abdominal examinat studied cases.	ion among
Table (9):	Chest, heart and CNS examinate studied cases.	•
Table (10):	Laboratory findings among studied ca	ases70
Table (11):	Other laboratory findings among stud	died cases 71
Table (12):	Other laboratory findings among stud	died cases 72
Table (13):	Pelvic abdominal ultrasound amor	-
Table (14):	Final diagnosis of studied cases	
Table (15):	Show results of definitive dia	
14810 (19)(patients presented by FUO total no	-
Table (16):	Treatment among studied cases	
Table (17):	Fate among studied cases	79
Table (18):	Comparison between the two studies regarding demographic data	-
Table (19):	Comparison between the two stud regarding Co-morbidities and past hi	lied groups

List of Tables Cont...

Table No.	Title	Page No.
Table (20):	Comparison between the two regarding risky behavior and exp	
Table (21):	Comparison between the two regarding complaint	
Table (22):	Comparison between the two regarding vital signs	
Table (23):	Comparison between the two regarding clinical features and h	
Table (24):	Comparison between the two regarding general and abdomina	~ <u>-</u>
Table (25):	Comparison between the two regarding chest, heart and CNS	
Table (26):	Comparison between the two regarding laboratory findings	
Table (27):	Comparison between the two regarding other laboratory finding	~ <u>-</u>
Table (28):	Comparison between the two regarding other laboratory findir	
Table (29):	Comparison between the two regarding pelvic abdominal ultra	0 1
Table (30):	Comparison between the two regarding treatment	
Table (31):	Comparison between the two regarding fate	

List of Figures

Fig. No.	Title	Page No.
Figure (1):	Mechanisms of damage from fever	
Figure (2):	Algorithm for the diagnosis of unknown origin	
Figure (3):	Sex distribution among studied cas	ses59
Figure (4):	Frequency of occupation among cases.	
Figure (5):	Frequency of residence among cases	studied
Figure (6):	Frequency of marital status studied cases.	among
Figure (7):	Co-morbidities and past history studied cases.	among
Figure (8):	Risky behavior and exposures studied cases.	among
Figure (9):	Undiagnosed and diagnosed cases study	s in our
Figure (10):	Final diagnosis of studied cases	
Figure (11):	Comparison between the two	
riguic (11).	groups regarding age	
Figure (12):	Comparison between the two groups regarding gender	studied
Figure (13):	Comparison between the two groups regarding temperature	studied
Figure (14):	Comparison between the two groups regarding breath sounds	studied
Figure (15):	Comparison between the two groups regarding lymphocyte	studied s and
Figure (16):	neutrophils Comparison between the two groups regarding serum albumin	studied

List of Figures Cont...

Fig. No.	Title	Page No.
Figure (17):	Comparison between the two groups regarding final diagnosis	
Figure (18):	Comparison between the two groups regarding C-reactive protein	studied
Figure (19):	Comparison between the two groups regarding brucella titr	
Figure (20):	Comparison between the two groups regarding blood culture	studied
Figure (21):	Comparison between the two groups regarding chest X ray	
Figure (22):	Comparison between the two groups regarding CT abdominal	
Figure (23):	Comparison between the two groups regarding CT chest	
Figure (24):	Comparison between the two groups regarding echocardiography	studied
Figure (25):	Comparison between the two groups regarding antiviral and anti	studied
Figure (26):	Comparison between the two groups regarding follow up	studied
Figure (27):	Comparison between the two groups regarding final diagnosis	studied

List of Abbreviations

Abb.	Full term
18FDG-PET	18fluoro-deoxy-glucose–positron emitted tomography
AFB	Acid-fast bacilli
ALT	Alanine aminotransferase
ANA	Antinuclear antibody
APS	Antiphospholipid syndrome
ASO	Antistreptolysin-O antibodies
AST	Aspartate aminotransferase
BA	Bronchial asthma
BBB	Blood-brain barrier
BUN	Blood urea nitrogen
CBC	Complete blood count
CHD	Chronic heart disease
CMV	Cytomegalovirus
CNS	Central nervous system
COPD	chronic obstructive pulmonary disease
COX	Cyclooxygenase
CRP	C- reactive protein
CSD	Cat scratch disease
CSF	Cerebro-spinal Fluid
CT	Computed tomography
CVD	Cardiovascular disease
DM	Diabetes mellitus
EBV	Epstein-Barr virus
ESR	Erythrocyte sedimentation rate
FDGPET	Fluorodeoxyglucose positron emission tomography
FMF	Familial Mediterranean fever

List of Abbreviations Cont...

Abb.	Full term
FUO	. Fever of unknown origin
	. Human herpesvirus
	. Human immunodeficiency virus
HTN	·
IL-1β	· -
INF	•
JRA	. Juvenile rheumatoid arthritis
KFD	. Kikuchi-Fujimoto Disease
LFT	. Liver function test
LNS	. Lymph nodes
LORA	. Late onset rheumatoid arthritis
LPS	. Lipopolysaccharide
MRI	. Magnetic resonance imaging
NIID	. Non-infectious inflammatory diseases
PAN	. Polyarteritis nodosa
PCR	. Polymerase chain reaction
PET-CT	. Positron emission tomography-computed
DMD	tomography . Polymyalgia rheumatica
	. Purified protein derivative
	. Rheumatoid arthritis
	. Standard deviation
	. Systemic lupus erythematosus
	. Statistical Program for Social Science
	. Temporal arteritis
	. Transesophageal echocardiography
	. Transesophagear echocardiography . Tumor necrosis factor
TT4T	. I dillor ficciosis factor

List of Abbreviations Cont...

Abb.	Full term
TST	Tuberculin skin test
TTE	Transthoracic echocardiography
UTI	Urinary tract infections

Introduction

Fever is one of the common presenting symptom in clinical practice. Most of the time fever is either self-limiting or with a definite underlying etiology. If fever remains persistent and undiagnosed, it is termed as fever of unknown origin (FUO).

Fever of unknown origin (FUO) is caused by various diseases and often makes diagnosis difficult. In 1961, Petersdorf and Beeson defined the criteria for FUO as follows: fever of more than 3 weeks' duration, temperature >38.3 on multiple occasions, and an unclear diagnosis after 1 week of inpatient evaluation (*Petersdorf and Beeson*, 1961).

In 1991, **Durack and Street** changed the criterion of 'an unclear diagnosis after 1 week of inpatient evaluation' to 'an unclear diagnosis after 3 outpatient visits or 3 days of inpatient evaluation' and classified FUO as classical, nosocomial, neutropenic, and human immunodeficiency virus (HIV)—associated FUO. In previous reports, infections were the most frequent causes of FUO (*Yamanouchi et al.*, 2014).

FUO has some characteristics that obscure the cause of the fever; the focus of infection is unclear without accepting a typical symptom and performing a physical examination, when there are no symptoms except for fever and a certain period is