DIAGNOSIS OF CUTANEOUS LYMPHOMAS

Submitted for partial fulfilment of Master Degree in Dermatology & Venereology

By

Iman Ahmad Abu Setta

(M.B., B.Ch.)

616.992 77
E A

Under Supervision of

Prof. Dr. Mohammed Habeeb

Professor of Dermatology & Venereology
Faculty of Medicine, Ain Shams University

Dr. Mahira Hamdy El-Sayed

Assist. professor of Dermatology &Venereology
Faculty of Medicine, Ain Shams University

Faculty of Medicine
Ain Shams University

1997

Central Library - Ain Shams University

Central Library - Ain Shams University

بسم الله الرحمن الرحيم

Central Library - Ain Shams University

ACKNOWLEDGEMENT

Firstly and foremost, I always feel indebted to Allah, The most kindful, and most merciful.

I wish to express my sincere gratitude and indebtedness to ***Prof. Dr. Mohammed Habeeb,*** *Professor of Dermatology & Venereology, Ain Shams University, for his valuable help, constant support, skillful guidance, and continuous encouragement all through this work.*

Also I am greatly indebted to ***Dr. Mahira Hamdy El-Sayed,*** *Assistant Professor of Dermatology & Venereology, Ain Shams university for her precious guidance, valuable suggestions and continuous encouragement.*

Finally, I would like to thank my family and everyone who had helped me throughout this work.

Iman

Central Library - Ain Shams University

Central Library - Ain Shams University

CONTENTS

1.Introduction. 1

2.Classification of cutaneous lymphomas. 2

3.Diagnosis of cutaneous lymphomas:

a. Clinical picture..... 11

b. Histopathology. 17

c. Molecular biology:

- *Southern blot analysis*.....30
- *Polymerase Chain Reaction.* 31
- *In Situ Hybridization*.....32

d. Use of monoclonal antibodies in diagnosis of cutaneous lymphomas:

- *Diagnosis of cutaneous lymphoid infiltrates.* 36
- *Criteria for diagnosis & differential diagnosis of CTCLs*.....37
- *Criteria for diagnosis & differential diagnosis of CBCLs.* 39
- *Criteria for the diagnosis of specific cutaneous manifestations*

Central Library - Ain Shams University

of Hodgkin's disease.....41

- *Criteria for the diagnosis of true histiocytic lymphomas*.....41
- *Other markers in the study of cutaneous lymphomas*.....42

4. Additional diagnostic techniques.....44
5. Summary.....46
6. Protocol for diagnosis of Egyptian lymphoma patients.....51
7. References.....55
8. Arabic summary.

Central Library - Ain Shams University

LIST OF TABLES

I. Six classifications of non-Hodgkin's lymphomas as used in the NCI-sponsored study. **(Pages 2-6)**

II. Non-Hodgkin's lymphomas and related disorders occuring in the skin and their corresponding entities in the working formulation. **(Page 6)**

III. TNM Definitions in CTCL. **(Page 9)**

IV. Tumor Burden index for cutaneous T-cell lymphoma. **(Page 16)**

V. Some clinical, morphologic and functional criteria for the differentiation of CBCL, small lymphoid type (Reticulosis), from CTCL. **(Page 16)**

VI. T cell lymphoma/ Leukemia. **(Page 17)**

Central Library - Ain Shams University

VII. Panel of antibodies for the diagnosis of cutaneous undifferentiated tumors.**(Page 37)**

VIII. Rational Panel of antibodies for the immunohistochemical diagnosis of cutaneous lymphoid infiltrates in routinely-fixed, Paraffin-embedded tissue sections. **(Page 38)**

Central Library - Ain Shams University

LIST OF ABBREVIATIONS

ATLL	Adult T cell lymphoma leukemia
CBCL	Cutaneous B cell lymphoma
CD	Cluster Differentiation
CL	Cutaneous lymphomas
CTCL	Cutaneous T cell lymphoma
EBV	Epstein-Barr virus
EMA	Epithelial membrane antigen
HTLV	Human T-cell leukemias virus
HD	Hodgkin's disease
Ig	Immunoglobulin
IL2	Interleukin 2
ISH	In situ hybridization
K	Kappa
λ	Lambda
LCA	Leucocytic antigen
LeL	Lymphoepitheloid lymphoma
LYP	Lymphomatoid papulosis
MF	Mycosis fungoides
PCR	Polymerase chain reaction
SS	Sézary syndrome
TBI	Tumor Burden index
T-CLL	Chronic lymphocytic leukemia of T cell type
TCR	T-cell receptor
TCRGR	T-cell receptor gene rearrangement
T-pLL	T-prolymphocytic leukemia

Central Library - Ain Shams University

Central Library - Ain Shams University

INTRODUCTION

Central Library - Ain Shams University

Central Library - Ain Shams University

INTRODUCTION

Cutaneous lymphomas constitute a complex and imperfectly classified group of skin neoplasms. For routine diagnostic purposes, morphology always has been and continues to be the "gold standard" basis for the classification of lymphoproliferative disorders. Over the years, these classifications have changed again and again because of the development of new techniques for cell identification and increasing understanding of lymphocyte ontogeny.

Rappaport's most useful classification into lymphocyte-rich, lymphocyte poor, mixed cell, and histiocytic lymphomas all forms nodular or diffuse-has been modified and replaced by others.

Despite the many distinct features of cutaneous lymphomas, they are best classified according to the Kiel classification and the working formulation for clinical usage.

In the last decade, major advances in the understanding of malignant lymphomas have been achieved, through the application of modern biologic techniques such as southern blot analysis of immunoglobulin (Ig) & T-cell receptor (TCR) gene rearrangements, gene amplification, and in situ hybridization. Also, the introduction of monoclonal antibodies that recognize different T- and B- cell antigens in paraffin-embedded tissue sections have allowed the investigation of routinely fixed material

The aim of this review is to spotlight on the recent different diagnostic techniques and to analyze diagnostic and prognostic value of monoclonal and polyclonal antibodies aiming at an early and accurate detection of this potentially fatal neoplasm. Conclusions will be drawn so, a protocol can be applied for the use in Egyptian patients.

Central Library - Ain Shams University

Central Library - Ain Shams University