



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



شبكة المعلومات الجامعية



بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية



بالرسالة صفحات
لم ترد بالأصل

EVALUATION OF THE EFFECT OF HYDROXYUREA ON MENINGIOMA CELLS IN CULTURE

Thesis

Submitted to Faculty of Medicine

University of Alexandria

In Partial fulfillment of the requirements of the degree of

Master of Pathology

By

BASSMA MOHAMED ALY EL SABAA

M.B.B.Ch. Alex.

**Faculty of Medicine
Alexandria University**

2001

B
1-cvo

SUPERVISORS

Prof. Dr. Nadya Aly Hebaishy

*Professor of Pathology
Faculty of Medicine
University of Alexandria*

Prof. Dr. Mostafa Hassan Fathy

*Professor of Neurosurgery
Faculty of Medicine
University of Alexandria*

Prof. Dr. Omayma Mohamed El Sakka

*Assistant Professor of Pathology
Faculty of Medicine
University of Alexandria*

CO-WORKER

Dr. Shweekar Mahmoud Abdel Salam

*Lecturer of Microbiology
Faculty of Medicine
University of Alexandria*

Acknowledgment

I am forever grateful to **Prof. Dr. Soheir M. Hamam**, Head of the Pathology department, Faculty of Medicine, Alexandria University for making this work possible by founding the Tissue Culture Unit, for kindly providing the immunohistochemical stains and for offering immediate and practical solutions whenever a problem should arise.

I also wish to express my deepest thanks to **Prof. Dr. Nadia A. Hebaishy**, Professor of Pathology, Faculty of Medicine, Alexandria University for her hearty support and continuous encouragement. She spared neither time nor effort during supervising this work. Her masterly remarks during the formulation of the thesis were truly valuable.

I am grateful to **Prof. Dr. Mostafa H. Fathy**, Professor of Neurosurgery, Faculty of Medicine, Alexandria University for his support and expert remarks with the tissue culture work.

I am endlessly indebted to **Prof. Dr. Omayma M. El Sakka**, Professor of Pathology, Faculty of Medicine, Alexandria University for her patient

and meticulous guidance. Her continuous support and expert assistance during the formulation of this thesis cannot be expressed in words.

I am grateful to **Dr. Shweekar M. Abdel Salam**, Lecturer of Microbiology, Faculty of Medicine, Alexandria University for her instructive advice and expert supervision through the completion of the molecular biological part of this work.

Thanks are also due to all the **staff members of the Pathology Department** for their sincere co-operation. Finally, I am truly thankful to the **staff members of the Neurosurgery Department**, Faculty of Medicine, Alexandria University for their help in provision of the tumour samples as well as the clinical and operative data of the cases.

Contents

Chapter	Page
Chapter I: Introduction	1
Review of the literature	
Histogenesis of meningioma	3
Incidence and Etiology	3
Morphologic features of meningioma	7
Recurrence of meningioma	16
Therapy of meningioma	20
Hydroxyurea	22
Apoptosis	25
Tissue culture	31
Chapter II: Aim of the work	34
Chapter III: Material	35
Chapter IV: Methods	36
Chapter V: Results	60
Clinical studies	61
Pathological study	61
Tissue culture	75
Effects of hydroxyurea	87
Apoptosis in hydroxyurea-treated cultures	96
Chapter VI: Discussion	106
Chapter VII: Summary	123
Chapter VIII: Conclusions and Recommendations	126
Chapter IX: References	128
Appendix	152
Protocol	
Arabic Summary	

List Of Abbreviations

Ab: Antibody

CNS: Central nervous system

dUTP: deoxy-Uridine triphosphate

EM: Electron microscope

GM: Growth medium

HIV: Human immunodeficiency virus

IHC: Immunohistochemistry

ISEL: In-situ end labeling

Mab: Monoclonal antibody

PBS: Phosphate buffered saline

Rpm: Rotations per minute

rs: Spearman coefficient factor

TEM: Transmission electron microscope

TUNEL: Terminal deoxynucleotidyl transferase-mediated dUTP-biotin
nick end labeling

WHO: World health organization

CHAPTER I

INTRODUCTION

INTRODUCTION

Meningiomas are common neoplasms that are mostly, histologically benign, slowly growing ⁽¹⁾, and in the majority of cases surgically resectable ⁽²⁾.

However, recurrences are apt to occur despite the best neurosurgical efforts.⁽³⁾ For such recurrent or irresectable tumour remnants, the standard treatment is radiotherapy ⁽⁴⁾, yet, the results have been generally disappointing ⁽²⁾ with no reduction in recurrence rate.⁽⁵⁾

In pursuit of other possible adjuvant therapeutic modalities, research has recently focused on pharmacotherapeutic agents including cytotoxic drugs.⁽⁴⁾ Hydroxyurea is such a drug with acceptable and reversible side effects. ⁽⁴⁾

Nowadays, there is an increasing interest in ascribing the cytotoxic effects of chemotherapeutic agents to the induction of apoptosis.⁽⁶⁾ Being an internally programmed phenomenon ⁽⁷⁾, apoptosis is subject to control mechanisms that serve as possible points of intervention. ⁽⁸⁾

The present work will be carried out to evaluate the effects of hydroxyurea on meningioma cells in culture and to determine whether such effects had any relation to apoptosis.

CHAPTER II

REVIEW OF THE LITERATURE