INTERFERON IN NEUROLOGICAL PRACTICE

ESSAY SUBMITTED
IN PARTIAL FULFILMENT OF
MASTER DEGREE IN
NEUROPSYCHATRY

Presented by
Dina Abulela Elshamaa
(M.B., B.Ch.)

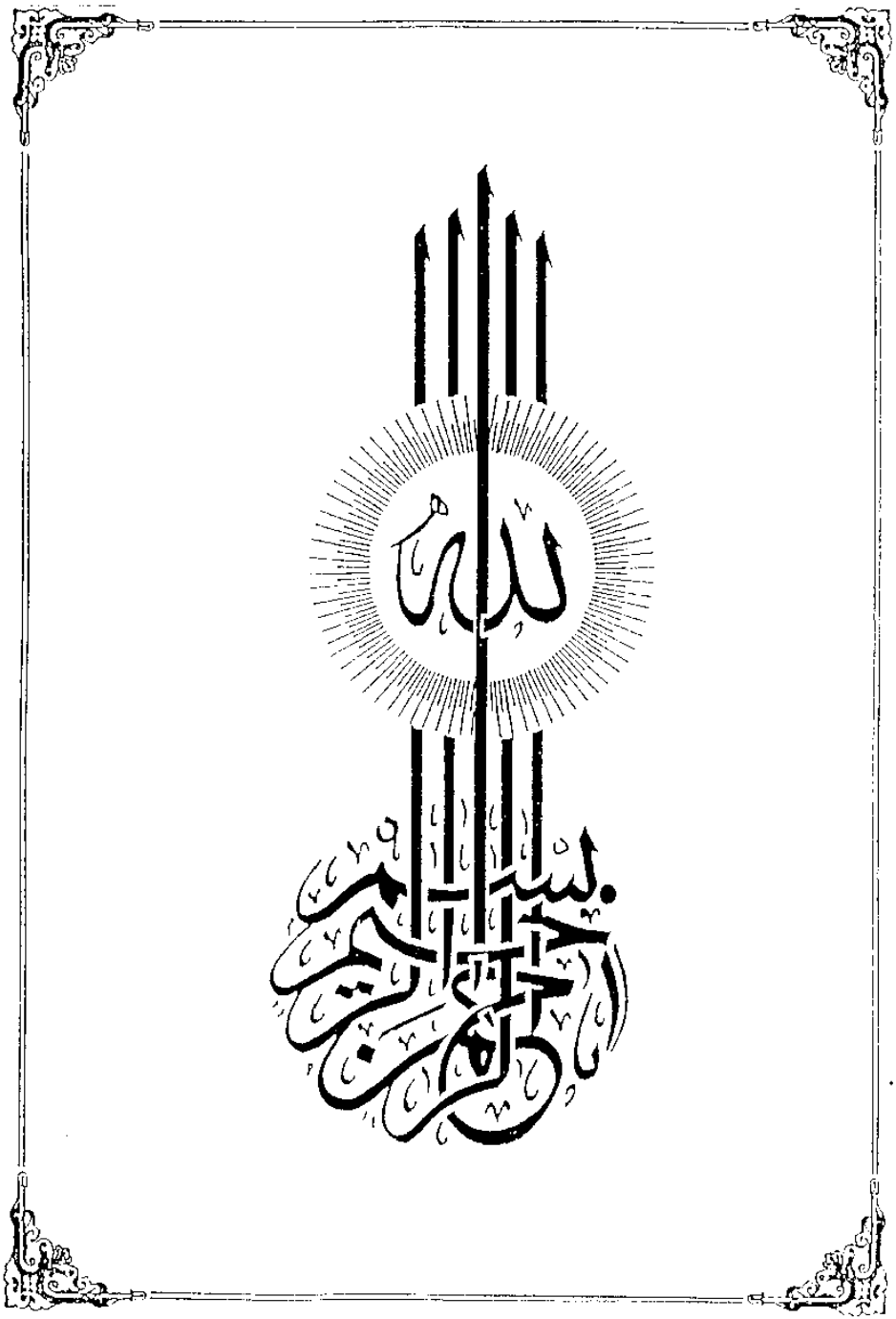
Supervised by:

Prof.Dr. Mohamed Anwar El-Etribi
Professor of Neuropsychiatry
Faculty of Medicine
Ain Shams University

Dr. Saffia Efat
Ass. Professor of Neuropsychiatry
Faculty of Medicine
Ain Shams University

Dr. Mohamed Mahmoud Mostafa
Lecturer of Neuropsychiatry
Faculty of Medicine
Ain Shams University

FACULTY OF MEDICINE
AIN-SHAMS UNIVERSITY
1996



بسم الله الرحمن الرحيم

ACKNOWLEDGMENTS

I thank GOD who helped me alot during the performance of this work and forever.

I would like to express my deep thanks and sincere gratitude to Prof. Dr. Mohamed Anwar El-Etribi, Professor of Neuropsychiatry, Faculty of Medicine, Ain Shams University, who gave me the chance to study this subject, and for his help, guidance and patience throughout this work.

I am deeply grateful to Dr. Saffia Efat, Ass. Prof. of Neuropsychiatry, Faculty of Medicine, Ain Shams University, for her continuing encouragement and wise counsel throughout this work.

Also, I am deeply grateful to Dr. Mohamed Mahmoud Mostafa, Lecturer of Neuropsychiatry, Faculty of Medicine, Ain Shams University, for his continuing encouragement and great help during the preparation of this work.

Dina Abulela Elshamaa

To my mother who helps me through life

To my husband who helps me in every possible way

To my dearest of all, my daughter Farah

CONTENTS

INTRODUCTION

INTRODUCTION

Interferon (IFN) is one of the body's natural defenses. Interferon production is a cellular response to the foreign constituents of microbes, tumors and antigens. Interferon was discovered over 30 years ago by Issacs and Lindenmann, we now know that Interferon is really a family of molecules that can be divided into three species: Interferon alpha, Interferon beta, Interferon gamma.

These Interferons differs in agents inducing them and in cell types that produce them, *(Samuel, 1988)*.

The spectra of interferon activities in the body include antiviral, antiproliferative, antitumour, immunodilatory and hormonal actions.

Food and drug administration (FDA) in the United States approved clinical use of Interferon. The first U.S. FDA approved clinical use for Interferon alpha was in 1986 for hairy cell leukemia, genital warts, kaposi's sarcoma in patients with acquired immuno deficiency syndrome (AIDS). Recently Interferon (A) is used for non A, non B (type C) hepatitis, and chronic granulematous diseases. Favorable clinical results in other diseases such as basal cell carcinoma, squamous cell carcinoma, laryngeal papillomatosis, multiple myeloma, low grade lymphoma was reported, *(Sameul, 1988)*.

The incidence of SSPE varies from country to country. It occurs 3-4 times more frequently in boys than in girls, in younger children in a family, in the country rather than in towns, and in lower socio-economic groups. All racial groups are affected, and it seems that Arabs and people around the Mediterranean have a higher incidence. In those countries where there is an effective immunization program, the incidence of SSPE is dropping off, there is little evidence for a genetic predisposition,*(Modlin et al., 1979)*.

Interferon alpha was reported effective in the treatment of Subacute sclerosing panencephalities (SSPE). This is very interesting because SSPE is a fatal disease with no known treatment, (*Yalaz-K et al., 1992)*.

The etiology of Multiple sclerosis is thought to involve an interplay between genetic and environmental factors, resulting in an immunologically mediated inflammatory response within the central nervous system. The evidence for genetic susceptibility to Multiple Sclerosis is direct and convincing; the findings with respect to environmental initiators or triggers are suggestive but less compelling, *(Compston, 1990)*.

Interferon has been extensively tested in multiple sclerosis. Multiple sclerosis is considered a systemic autoimmune disease. Very little is known about the incidence or prevalence of Multiple Sclerosis or SSPE in Egypt. Interferon gamma potentates exacerbations of multiple sclerosis,