SERUM PROLACTIN LEVEL IN MENOPAUSAL SYNDROME SPECIFICALLY HOT FLUSHES

THESIS

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The Master Degree In Obstetrics And Gynaecology

By

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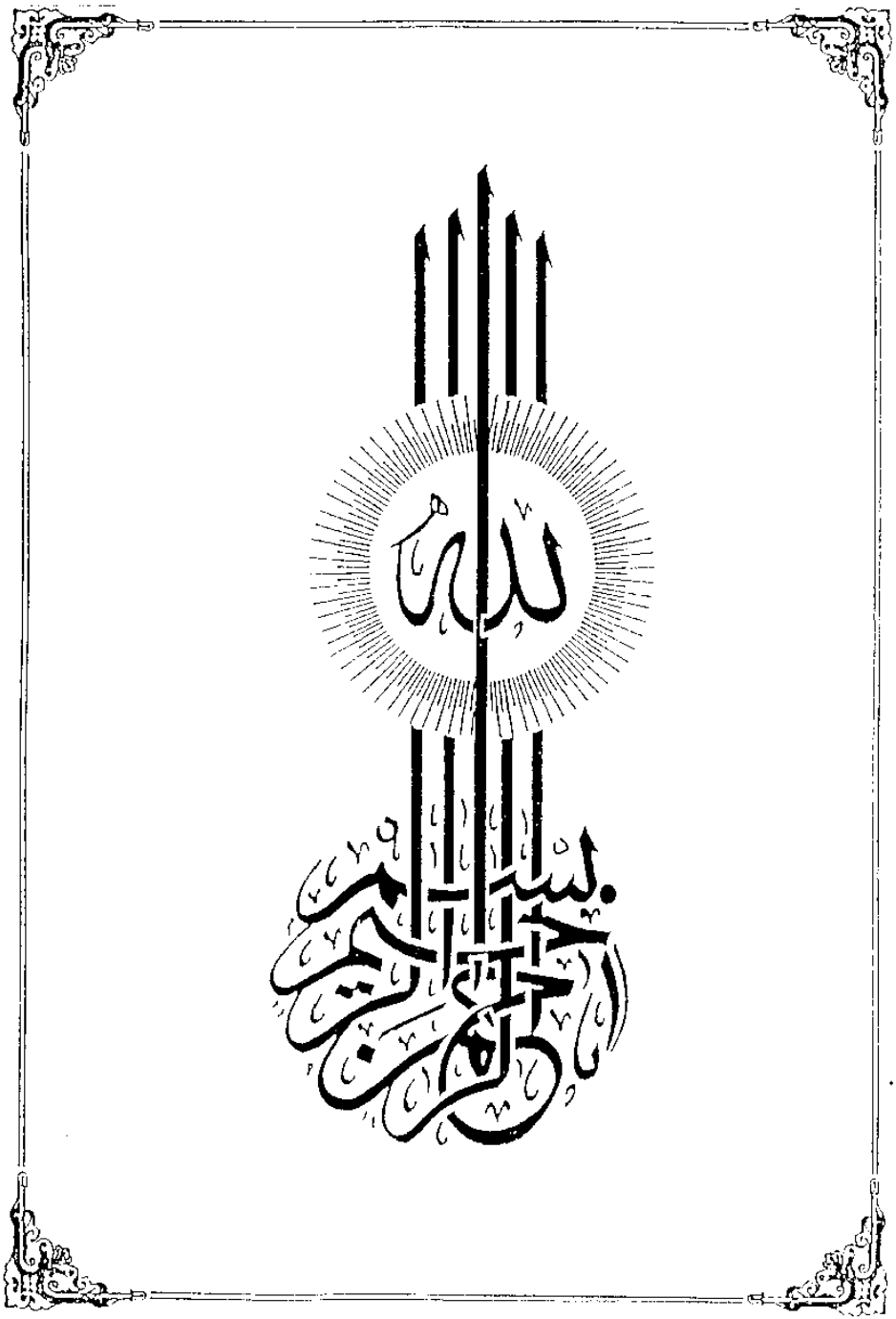

CONTENTS

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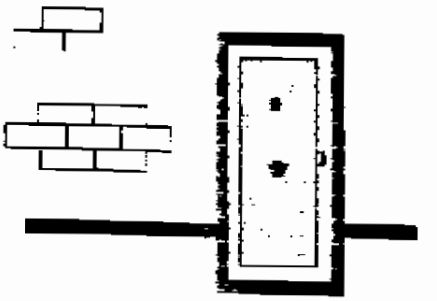

INTRODUCTION

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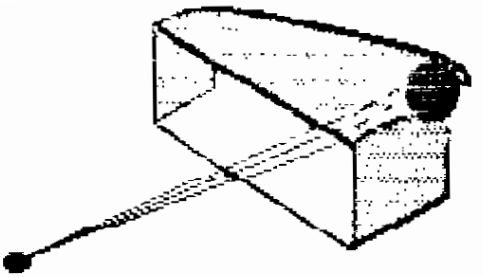
Menopause is defined according to the WHO definitions, as the permanent cessation of menstruation resulting from loss of ovarian activity (Diczfalusy, 1986).

Diczfalusy (1986), reported that between the year 1980 and the year 2000, the population of women approaching or reaching the menopause in the developed countries will increase by less than 50 million and during the same period, the corresponding number of women in developing countries will increase by almost 200 million, and in the year 2000, 12% of the world population will consist of women 45 years or over and almost half a billion of them will live in developing countries.

Prolactin and its relation to the menopause was investigated by Reyes et al. (1977), they found that there was a significant correlation between prolactin and oestradiol levels during postmenopausal period, so the decline in the mean serum prolactin after the menopause is a direct effect of marked and persistent hypoestrogenism.

Also, Chang (1978), confirmed that as a woman ages there was a progressive decline in prolactin concentration, this decrease is associated with the menopause and the resultant decline in circulating estrogen.

In a study made by Meldrum et al. (1984), they concluded that there was no significant fluctuations of prolactin level in postmenopausal women with severe hot flushes.



AIM OF THE WORK

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The aim of this work is to estimate the level of serum prolactin hormone in menopausal syndrome (specifically in women suffering from menopausal hot flushes) in a trial to find a link between the level of that hormone and the occurrence of the menopausal hot flushes.

As this symptom is usually annoying for this group of patients, every trial is done to solve this problem and a specific line of management is essential for releif of this syndrome.

REVIEW OF LITERATURE

CHAPTER (I)

MENOPAUSE

Definitions:

According to the WHO definitions, menopause is the permanent cassation of menstruation resulting from loss of ovarian activity. While, climacteric is the period immediately prior to the menopause and at least the first year after it, and post menopause is the period dating from the menopause (Diczfalusy, 1986).

The Age of Menopause:

Gambrell (1982), stated that the average age of menopause is between 50 and 51 years. A similar estimation for the age of menopause was made by Krailo and Pike (1983), who recorded that menopause occurs in American women between the ages 48 and 55 years with the median age being approximately 50 years. But, more explanation was made by Wentz (1988), who stating that about one-fourth of women experience spontanous menopause before age 45 years, about one-half experience it between 45 and 50 years and the remaining one-fourth experience it after age 50 years.

By reviewing both modern and historical data, it becomes apparent that the age at which cessation of menses occurs has not changed in the last several hundred years (Haney, 1986).

The age of menopause is affected by many factors the most important is cigarette smoking. Jick et al., (1977) stated that cigarette smoking has been demonstrated to shorten menstrual life by approximately two years. The effect of smoking was confirmed by Haney (1986), who reported that the most gametotoxic materials within the 3.000 compounds in cigarette smoke are the polycyclic aromatic hydrocarbons and carbon monoxide. Benzopyren, a polycyclic aromatic hydrocarbone, has been demonstrated to be gametotoxic in mice, representing a classic example of an environmental agent inducing premature ovarian failure.

Gamete physiology and Ovarian Function:

Chang and Judd (1981), explained the mechanism of occurrence of menopause by the depletion of gonadotropin -responsive ovarian follicles and the resultant significant cessation of ovarian estradiol secretion.

Haney (1986), stated that five to seven million oocytes are present in the ovary at 20 week's gestation as primordial follicles. By the time of birth, there has been a reduction in oocyte number, to 1-2 million follicles. At puberty the oocytes number declines further, and only 300,000-400,000 primordial follicles are present. The total number of primordial follicles gradually declines to less than 10,000 at the age 45 years. The human ovary contains three major compartments, more than the oocytes the granulosa cells, the theca cells and the ovarian interstitium or stroma. Ovarian steroidogenesis is a complex biosynthetic process involving all the three compartments. As regard the thecal compartment, it possesses all the steroidogenic enzymes necessary for the synthesis of the three major gonadal steroids (Progestogens, androgens and estrogens) so the theca produces primarily androgens and some estrogen under the control of leutinizing hormone [LH]. As regard the granulosa cells (Haney, 1986) also concluded that although these cells have most of the same steroidogenic enzymes as the theca but lack significant amounts of 17, 20 desmolase enzyme required to convert C-21 progestogens to C-19 androgens and the granulosa cells have an FSH inducible aromataze enzyme system

capable of converting large quantities of androgen to estrogen (Haney, 1986).

Lastly, the ovarian stroma has the capability to produce all the three sex steroids but, the produced amount is less than that produced by other follicular compartments (McNatty et al., 1979).

During the reproductive years, the dominant cyclic structures i.e. the preovulatory follicle and corpus luteum produce by far the largest amount of sex steroids, the predominant estrogen is estradiol (E_2) and there are smaller amounts of estrone (E_1) (Haney, 1986).

Inhibin hormone:

It is one of the more important substances synthesized by the granulosa cells in response to FSH and is secreted into the follicular fluid (Rivier et al., 1986 and Bicsak et al., 1986).

Inhibin hormone has selective FSH suppressing properties and it appears that FSH production is more sensitive to the presence of inhibin than the general negative feed back effects of steroids (Haney, 1986).