VAGINAL BROMOCRIPTINE CLINICAL AND BIOCHEMICAL EFFECTS

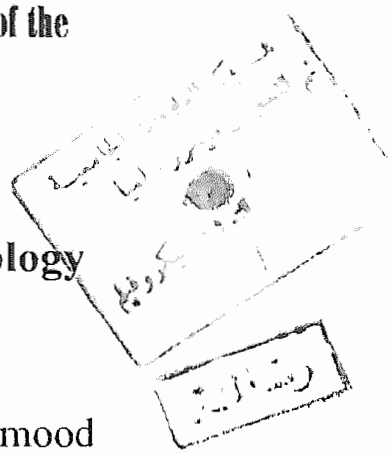
Thesis

Submitted in partial fulfilment of the

Master Degree

In

Obstetrics and Gynecology



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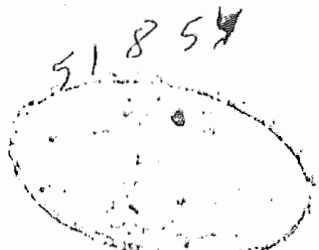

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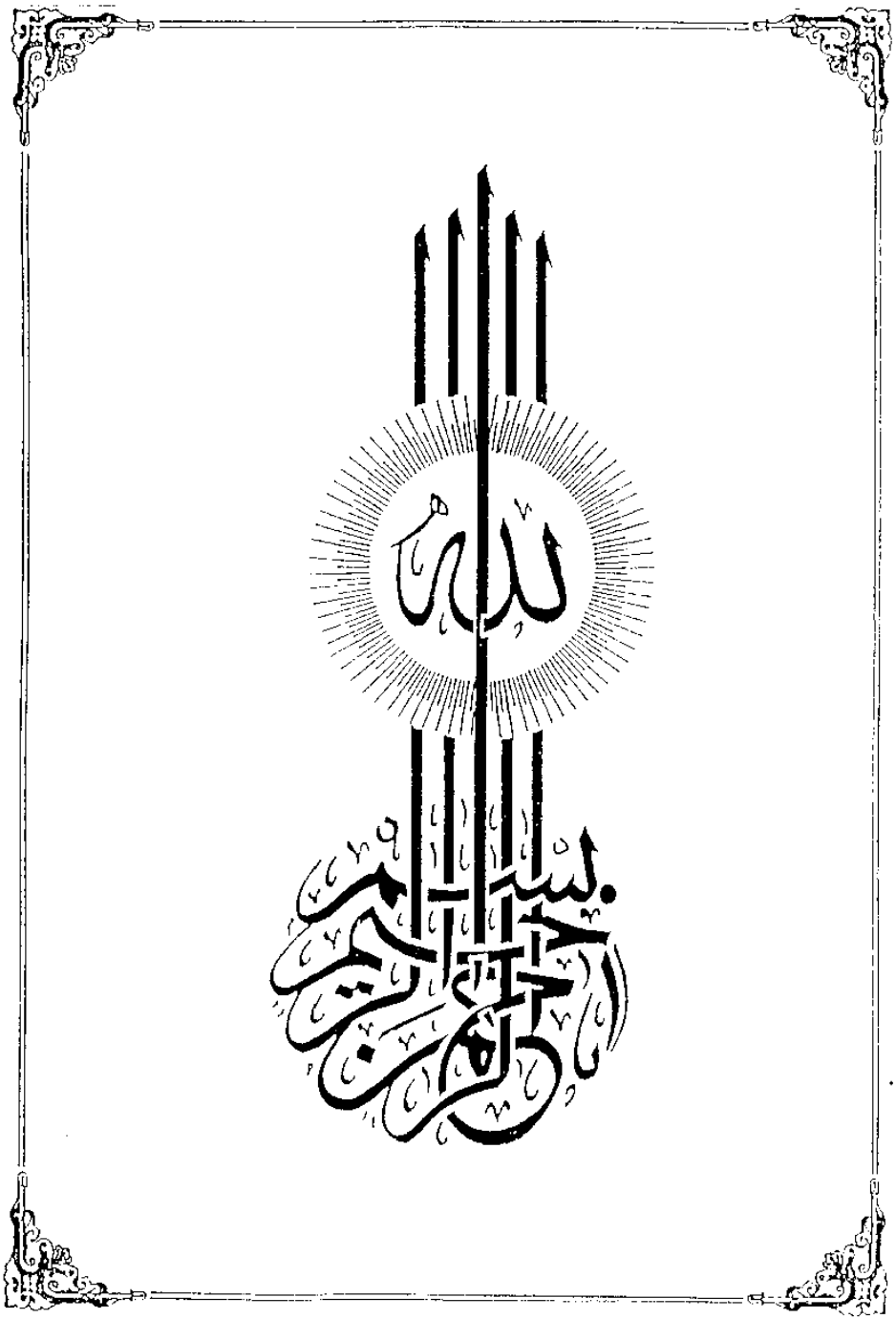
Randa Fakhr El Din



List Of Contents

List of abbreviations

AII	: Angiotensin II .
ACTH	: Adrenocorticotropine hormone .
B-LPH	: B-lipotropin .
Ca	: Calcium .
cAMP	: Cyclic adenosine monophosphate .
CSH	: Aminothol cysteamine .
DA	: Dopamine .
DAG	: Diacylglycerol .
ELISA	: Enzyme linked immunosorbant assay .
FSH	: Follicular stimulation hormone .
GABA	:Gamma-aminobutyric acid .
Gn RH	: Gonadotrophin releasing hormone .
G-PRL	: Glycosylated prolactin .
IP3	: Inositol triphosphate .
LH	: Luteinizing hormone .
ME	: Median eminence .
m-RNA	: Messenger ribonucleic acid .
OD	: Optical density .
PIF	: Prolactin inhibiting factor .
PIP	: Phosphatidyl inositol biphosphate .
PK-C	: Protein kinase C.
PLC	: Phospholipase .
PRF	: Prolactin releasing factor .
PRL	: Prolactin .
TIDA	: Tubero-infandibular DA .
TMB	: Tetramethylbenzidine .
TRH	: Thyrotropin releasing hormone .
TSH	: Thyroid stimulating hormone .
VIP	: Vasoactive intestinal peptide .

Corrections

Page	*Line*	*Wrong word*	*Correct word*
13	2	System	system
21	13	Myometrium	myometrium
37	6	There for	Therefore
40	1	cytinosis	cystinosis
54	17	Avery	A very
61	5	is	has
63	3	gynaecological	gynecological
85	11	drowziness	drowsiness
87	13	of	during
89	4	drowziness	drowsiness
90	7	sawing	saving

INTRODUCTION

INTRODUCTION

The pituitary gland is composed of anterior, intermediate and posterior lobes, which are actually 3 more or less separate endocrine organs that, at least in some species contain 14 or more hormonally active substances *(Ganong, 1991).*

Prolactin is secreted in both women and men from the anterior pituitary, its secretion is controlled by an inhibitory dopaminergic pathway, thus dopamine agonists e.g bromocriptine, reduce prolactin secretion *(Laurence and Bennett, 1992).*

Intensive interest has been focused on prolactin with respect to its effects on reproduction.This is particularly the case in Gynecology because of the association of one or more of the following, amenorrhae, galactorrhae and infertility with hyperprolactinemia. *Archer (1988)* stated that causes of hyperprolactinemia can be classified into physiological and non physiological causes.

Dopamine agonist such as bromocriptine are widely used in treatment of hyperprolactinemia because they are very effective in decrease serum prolactin level *(Weingrill et al., 1992).*

Treatment of hyperprolactinemia with oral bromocriptine has been associated with high incidence of unwanted side effects such as nausea, vomiting, dizziness, headache, postural hypotension and drowsiness in half or more of patients *(Ginsburg et al., 1992).*

Recently there have been many reports on the efficacy of bromocriptine, and avoidness of side effects when administered per vaginum *(Ginsburg et al.,1992, Jasonni et al.,1991, and Kletzky and Vermesh, 1989).*

AIM OF THE WORK

AIM OF WORK

To assess the efficacy of bromocriptine when used per vagina and to evaluate the side effects associated with its use by such route, compared with oral administration.

REVIEW OF LITERATURE

PITUITARY GLAND

Anatomy and physiology

Many peripheral hormone systems are controlled by hypothalamus and pituitary. The hypothalamus is sited at the base of the brain around the 3rd ventricle and above the pituitary stalk, which leads down to the pituitary itself. The optic chiasm is just above the pituitary fossa, any expanding lesion from the pituitary or hypothalamus can produce visual field defects by pressure on the chiasm. The pituitary is itself encased in a bony box, any lateral, anterior or posterior expansion must cause bony erosion.

Upward expansion of the gland through the diaphragma selae is termed suprasellar extension. The normal fossa is of very variable size but a true lateral X-ray should show a well-defined outline with a single floor. The commonest cause of apparent abnormality is a poorly aligned film. Embryologically, the anterior pituitary is formed

from Rathke's pouch which meets an out pouching of third ventricular floor to become the posterior pituitary *(Kumar and Clark, 1991).*

The 6 established hormones that are secreted by the anterior pituitary are thyroid stimulating hormone (TSH), thyrotropin, adrenocorticotropic hormone (ACTH), luteinizing hormone (LH), follicle-stimulating hormone (FSH), prolactin (PRL) and growth hormone. ACTH, PRL and growth hormone are simple polypeptides or proteins, where as TSH, LH and FSH are glycoprotein, in addition the anterior lobe of the pituitary secretes B-lipotropin (B-LPH). By immunocytochemistry and electron microscopy, it is possible to distinguish 5 types of secretory cells in the human anterior pituitary:

1- Somatotropes: Secrete growth hormone.

2- Lactotropes (Mammotropes) : Secrete PRL.

3- Thyrotropes : Secrete TSH.

4- Gonadotropes : Secrete both LH and FSH.

5- Corticotropes : Secrete both ACTH and B-LPH.

The hormones secreted by the posterior pituitary in mammals are oxytocin and vasopressine.While the hormones secreted by the intermediate lobe of the pituitary are melanocyte-stimulating hormones *(Ganong, 1991).*

The pituitary lactotrope:

The lactotrope of the adenohypophysis is the cell that synthesizes and secretes prolactin (PRL). The human pituitaries' lactotropes constitute 40-50% of the total pituitary cell population and are aggregated mainly in the posterior lateral wing of the adenohypophysis *(Lioyd et al.,1988).*

The number of lactotropes does not change with age. However, the pituitary of late pregnancy enlarges to twice its normal size, principally because of an increase in the size and number of lactotropes.These so-called "pregnancy cells" previously labeled chromophobes, are now clearly identified as hypertrophic and hyperplastic lactotropes with high secretory activity *(Goluboff and Ezrin, 1969).*