STUDY OF TESTOSTERONE AND LEUTINIZING HORMONE LEVELS IN EGYPTIAN OPIATE ADDICTS

Thesis

Submitted for the Partial Fulfilment of the Master Degree in Clinical Pathology

By

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Under Supervision of

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CLINICAL PATHOLOGY DEPARTMENT

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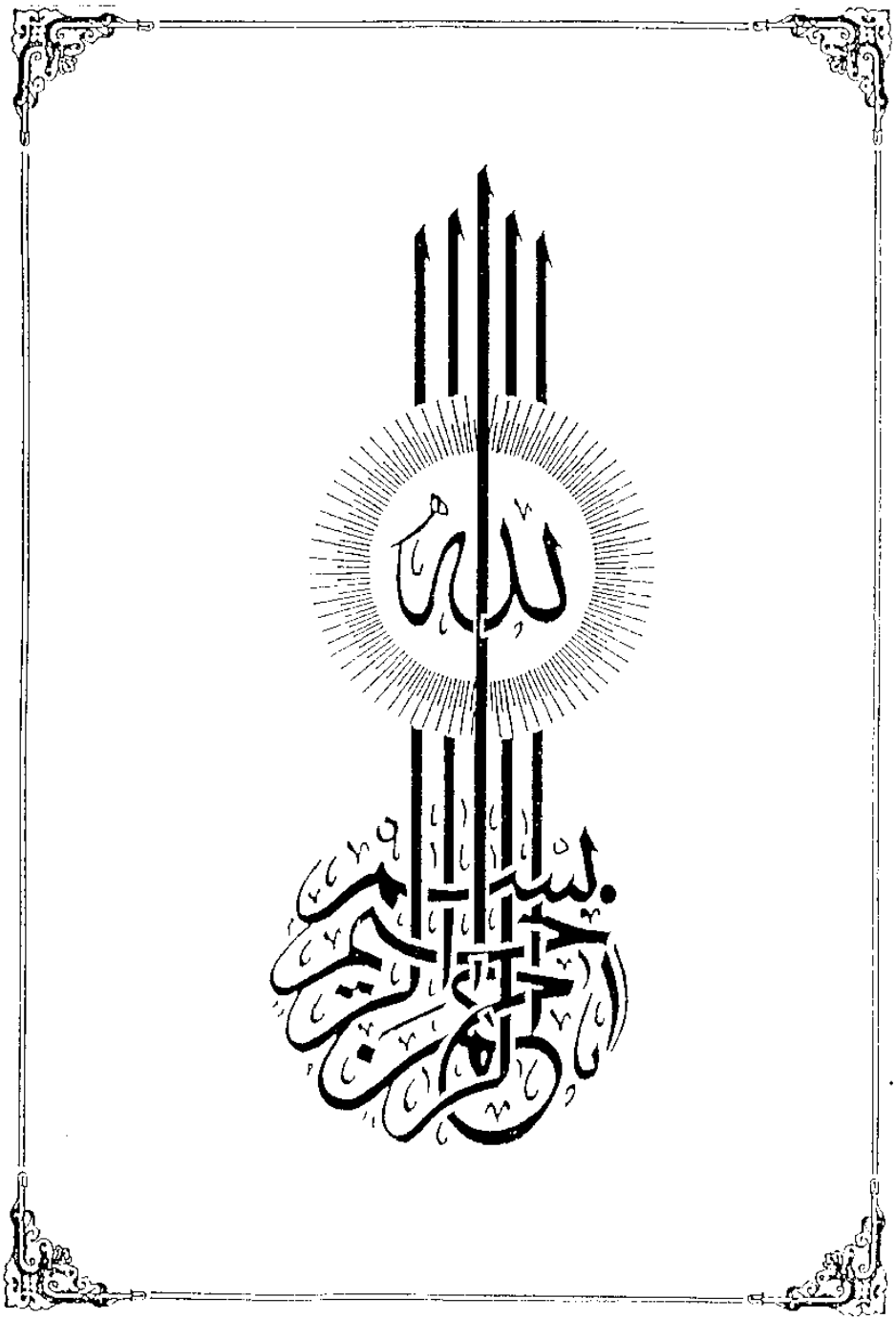

"بسم الله الرحمن الرحيم"

TO MY FAMILY

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INTRODUCTION AND AIM OF THE WORK

INTRODUCTION

Narcotic addiction is one of the worst and most dangerous problems at modern time. In Egypt, the phenomenon of narcotic abuse has become one of the important complex national problems facing the Egyptian society and laying extra burden on the Egyptian economy. The number of addicts increases day by day due to unexpected high income realized by sections of some classes of the society (Wahdan, 1986).

Moreover, the danger of addiction has reached young adults and even secondary school students who are Egypt's hope in a better future. This is obviously due to family disorganization, absence of family control, absence of the example at home, at school, in the society and finally due to lack of confidence in major social institutions (Wahdan, 1986).

Narcotics exert various effects on the different body systems, for example the respiratory system, the cardiovascular system, the central nervous system and the gastro-intestinal system. Recently,

scientists are attracted to study the effect of narcotics on the different body hormones particularly testosterone and luteinizing hormones.

Testosterone hormone is the most active and potent androgen in human males. There are considerable data indicating that androgens significantly modulate the libidinal function and may influence certain aspects of aggressive behavior in man (Kreuz and Rose, 1972).

Luteinizing hormone (LH) is one of the gonadotropins secreted by the anterior pituitary. It has a direct effect on the rate of testosterone synthesis and secretion by Leydig cells (Morgan et al., 1976).

Chronic narcotic administration affects serum testosterone and luteinizing hormone levels and disrupts the function of the secondary sex organs in man (Mendelson and Mello, 1982).

AIM OF WORK:

The aim of this work is to assess the effect of opiate addiction on the hypothalamic-pituitary-gonadal axis by studying the levels of testosterone hormone and luteinizing hormone in adult male Egyptian opiate addicts and comparing them to that of normal adult healthy males. Moreover, the effect of opiate addiction on the sexual function of young adult males will be assessed.

REVIEW OF LITERATURE

PHYSIOLOGY OF THE LUTEINIZING HORMONE

The luteinizing hormone is one of two gonadotropins secreted by the gonadotropic cells of the anterior pituitary. The pituitary gland, also called the hypophysis, is a small gland -less than 1 cm in diameter and about 0.5 to 1 gram in weight - that lies in the sella turcica at the base of the brain and is connected with the hypothalamus by the pituitary (or hypophysial) stalk. Physiologically, the pituitary gland is divisible into two distinct portions: the anterior pituitary (adenohypophysis), and the posterior pituitary (Neurohypophysis) (Morgan et al., 1976). Blood reaches the pituitary from two sources: arterial blood from a branch of the internal carotid, and venous blood carrying neurosecretory material from the hypothalamus reaches the pituitary through a venous portal system (Arimura, 1977).

The human anterior pituitary cells were categorized on the basis of their histologic staining reactions, as acidophils (about 40% of the cells), basophils (about 10% of the cells), and chromophobes (the remaining 50% of the cells). The anterior pituitary contains five types of cells: somat tropes, which secrete growth hormone (GH); mammotropes, which secrete prolactin (PRL); thyrotropes, which secrete thyroid stimulating