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MALE INFERTILITY AND EFFECT OF ZINC SULPHATE THERAPY

THESIS

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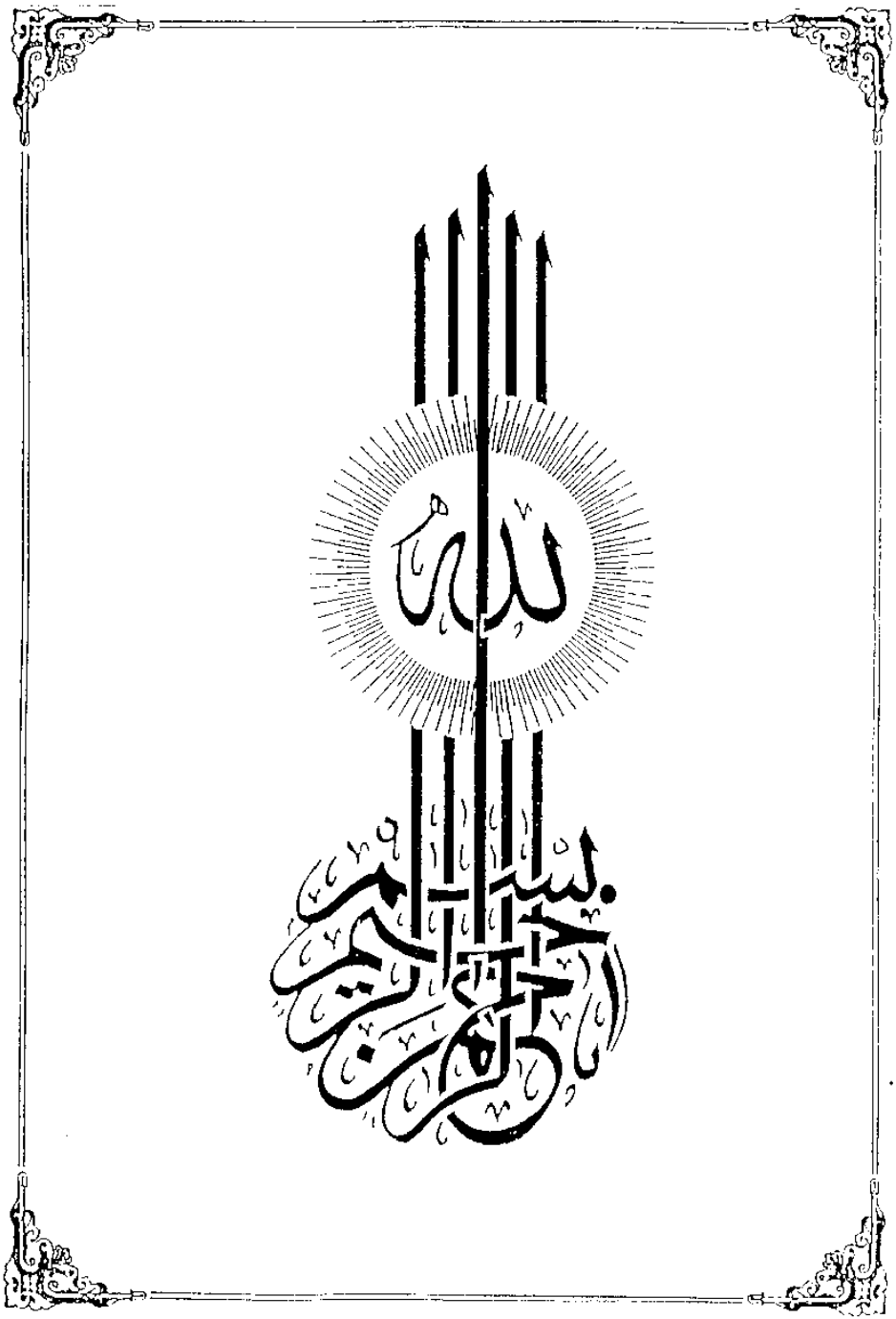

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بسم الله الرحمن الرحيم

لله ملك السموات والأرض يخلق ما يشاء
يهب لمن يشاء إناثا ويهب لمن
يشاء الذكور أو يزوجهم ذكرانا
وإناثا ويجعل من يشاء عقيما
إنه عليم قدير

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C O N T E N T S

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INTRODUCTION

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and may act directly on the pituitary gland.

(Steinberger et al., 1976) suggested that inhibin hormone produced by the semineferous tubules is involved in the negative feed back on FSH.

The gonadotropins may exert a negative feed back on the hypothalamus decreasing the production of GnRH (David et al., 1966).

Estrogens appear to block the synthesis of both gonadctropins.

HORMONAL CONTROL OF SPERMATOGENESIS

FSH is the key hormone responsible for normal progression of spermatogenesis (Greep et al., 1936)

Testosterone is required for maintenance of spermatogenesis and the production of mature fertile sperm (Steinberger, 1974).

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(Steinberger, 1975) proposes the following chain o of molecular events:-

1- FSH is bound to Sertoli cell membrane receptors, and there it activates adenyl cyclase.

2- Adenyl cyclase stimulates synthesis of cyclic AMP which promotes DNA dependant RNA synthesis resulting in formation of a number of proteins including a testicular androgen binding protein (ABP).

3- ABP is secreted by Sertoli cells and enters the intercellular spaces of semineferous epithelium where it binds to androgens which have diffused into the semineferous epithelium.

4- The ABP androgen complex comes in contact with the germ cell membrane where it facilitates the transfer of the androgen to a cytoplasmic androgen receptor. The receptor-androgen complex is transported into the germ cell nucleus. The subsequent steps of androgen action on the germ cell are unknown.

Spermatogenesis can be divided into three phases:

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The First Phase:

Most of the spermatogonia proliferate to give rise to spermatocytes, while the remainder maintain their own number by renewing themselves (Clermont and Anter, 1973).

The Second Phase:

Involve the primary and secondary spermatocytes that go through a process of reductional division leading to the formation of spermatides (Ohno, 1970).

The Third Phase:

The spermatide goes through a complex metamorphosis leading to the production of a highly differentiated motile cell (Spermatozoon) (Fawcett et al., 1969).

In humans, it takes an average of 74 days to form

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a mature sperm from primitive germ cell (Ganong, 1983) Hoskins et al., (1975) have proposed that seminal plasma contain a factor (s) which promotes progressive motility of ejaculated spermatozoa.

Other agents such as light, O_2, Hco_3 and electrolyte composition can stimulate both sperm respiration and progressive motility.

Endocrine Function of the Testis

Testosterone is the principle hormone of the testis it is a C_{19} steroid with an oH-group in the 17 position Testosterone is also formed via progesterone but this pathway is less prominent in human (Ganong, 1983).

The secretion of testosterone is under the control of LH and the mechanism by which LH stimulates the leydi cells involves increased formation of Cyclic AMP.

Testosterone is also formed in the adrenal cortex

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Although the main secretory product of the leydig cells is testosterone; some of the precursors also enter the circulation.

The main catabolites of testicular testosterone are 17 Ketosteroids which are exereted in urine, bile and faces. They account for about 30% of urinary 17 Ketosteroids.

The normal level of circulating testosterone is 0.64 mcg in males and 0.034 mcg per 100 ml in females In females, it rises during Ovulation and luteal phase (Ghalioungui and Ghareeb, 1978).

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AIM OF WORK

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REVIEW OF LITERATURE

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REVIEW OF LITERATURE

Male Infertility

Nearly 85 percent of women conceive within 2 years of uncontracepted intercourse. thereafter 7.5 percent conceive before the end of the reproductive 1 life and 7.5 percent remain permenantly infertile (Ian Ramsay, 1980). It is practical, therefore, to consider marriages as infertile only after 2 years of regular uncontracepted intercourse and to defer investigations until such time has elapsed (Ian Ramsay, 1980).

The presence of a long standing abnormality such as oligomenorrhoea or amenorrhoea, or time factors such as the age of the couple; call for earlier investigations.

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