CA-125 IN THREATENED ABORTION, MISSED ABORTION AND NORMAL PREGNANCY

Thesis

Submitted for partial fulfilment of master degree

in Obstetrics and Gynaecology

BY

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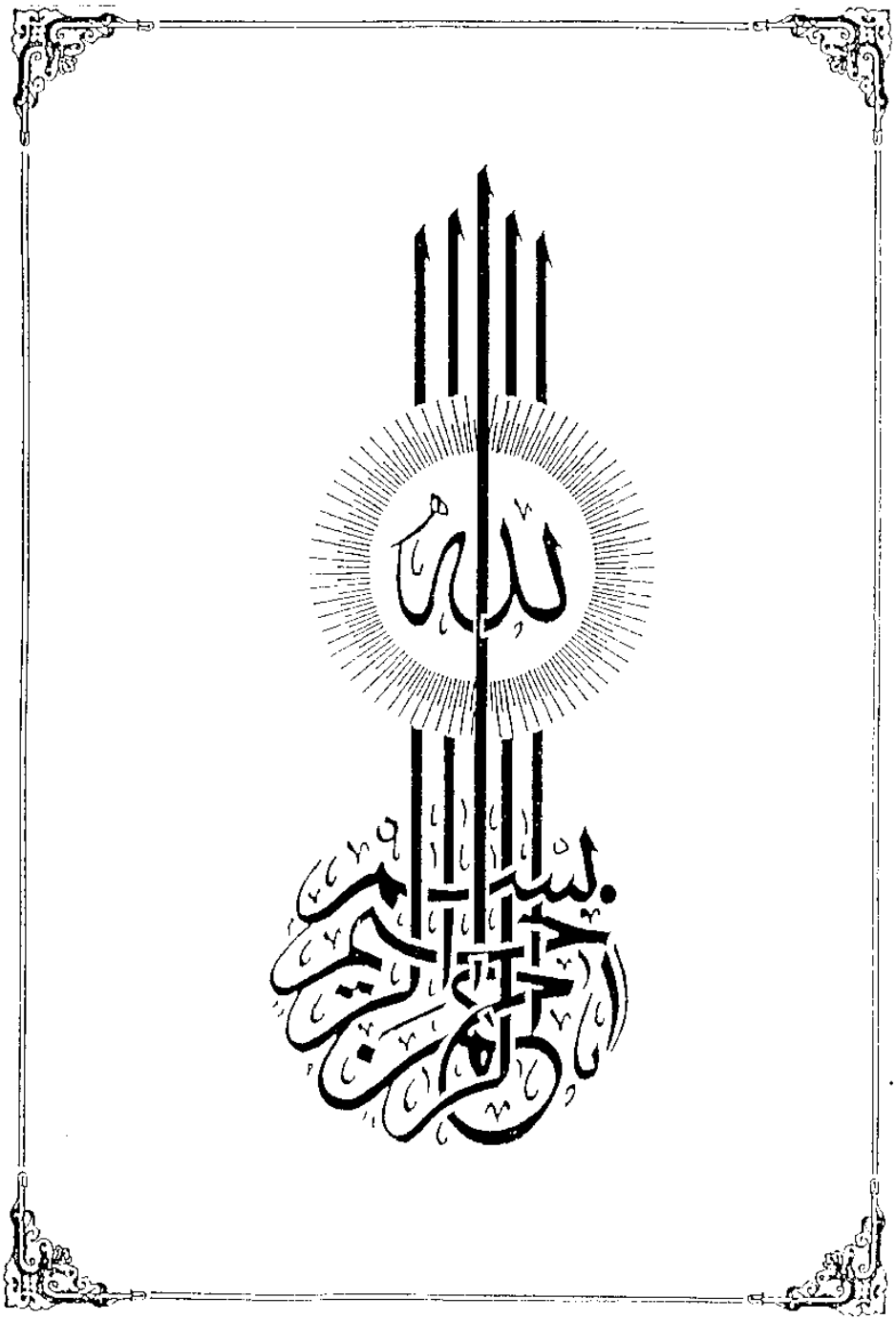

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Errata

W	R	page	Line
involving	is involving	8	7
folds	fold	15	11
erythematosis	erythematosus	26	10
erythematosis	erythematosus	34	16
, form	or form	46	4
100,000 IU/ml	100,000miu/ml	51	18
defnd	defind	53	17
concnetration of	concentration of	57	9
prdiction	prediction	63	5
hithertio	hitherto	69	13
	repeated	69	1
cardiae	cardiac	76	11
delivary	delivery	76	17
wemen	women	90	2
U/mg	U/100mg	90	9
Cbas	Cobas	100	12
form	from	110	13
log-CA125	log-mean CA 125	118	1
log-CA125	log-mean CA 125	119	1
in compare	in comparison	124	6
log-CA125	log-mean CA 125	130	11

Contents

Introduction

INTRODUCTION

Uterine bleeding is a common complication in early pregnancy. It may be a symptom of threatened abortion which is the most frequently encountered complication with an incidence of 25% ***(Hertz, 1984)***. The likelihood of spontaneous abortion under these circumstances appears to be about 50% ***(Sande et al ., 1980)*** . The early and accurate prediction of unsuccessful pregnancy in this situation should lead to appropriate treatment without unnecessary delay , thereby avoiding inconvenience and psychological stress to the patient and reducing the costs of prolonged hospitalization . Clinical examination alone (the amount of bleeding, , uterine size) proved to be correct only in 62.3% of cases in predicting the outcome of threatened abortion ***(Duff et al ., 1980)***.

Hormonal parameters in plasma and ultrasound examination have been explored as prognostic indicators of threatened abortion with varying degree of success . However, most of these studies deal with single measurements of few parameters and only some have investigated the value of serial measurements or the combination of different parameters ***(Moustafa et al ., 1988).***

The use of vaginal route for ultrasound scanning has improved accuracy in the diagnosis of early pregnancy complications . The

magnification and image resolution of an intrauterine pregnancy earlier and more precisely than with the abdominal transducer (***Bernascheck et al., 1988; Nyberg et al., 1988; Timor-Tritsch et al., 1988 and Cacciatore et al., 1989***) .

The ideal maternal serum parameter assay would predict pregnancy outcome from a single serum sample both patients with threatening symptoms as well as those without. To this end , reports have appeared evaluating the classic parameters of human chorionic gonadotrophins, progesterone, estradiol and human placental lactogen (***Ylikorkala et al ., 1973)*** . More recent attention has turned to pregnancy specific B_1 - glycoprotein (Schwangershaft protein), placental protein 5 and 14, relaxin and CA-125 (***Yamaney et al., 1986).***

CA-125 is an antigen determinant associated with ovarian carcinoma. It is a glycoprotein with high molecular weight (> 200,000 dalton) that is expressed on some derivatives of coelomic epithelium (***Kabawat et al., 1983).*** The normal physiologic function of CA-125 is unknown, but it shed from the cell surface and has been detected in amniotic fluid , cervical mucus, the lumina of endometrial , seminal fluid and sera of apparently healthy individuals (*Niloff et al., 1983).* It was found to be elevated in early pregnancy but returned to nomal levels by the second and third trimesters. The source of this marker in

pregnancy has been ascribed to both the developing fetus as well as the maternal decidua (***Witt et al., 1990***).

Earlier CA -125 studies have suggested acute elevations in pregnancies terminating in spontaneous abortions among threatened abortion patients whereas those who continued to viability has a uniform decrease after 7 weeks (***Yamaney et al., 1986***). Others have documented serum elevations immediately after delivery of the placenta at term as well as after second trimester abortion (***Kobayashi et al., 1989***).

Aim of the work :

The present study aims to compare the maternal levels of CA-125 in cases of threatened abortion, missed abortion and in normal pregnancy to evaluate its predictive value in detecting early pregnancy outcome.

Review of Literature

CHAPTER I :

THE DECIDUAL AND TROPHOBLASTIC PRODUCTS

For the fetus, one of the crucial aspects of intrauterine life is its dependancy on the effective exchange of nutritive and metabolic products with the mother. It is not surprising that, mechanisms exist by which a growing fetus can influence or control the exchange process, and hence its environment. The methods by which a fetus can influence its own growth and development involve a variety of messages transmitted, in many cases by hormones . Hormonal messengers from the conceptus can affect the metabolic processes, uteroplacental blood flow, and cellular differentiation (***Speroff et al., 1989)***

Steroid hormones of pregnancy:

The sex steroid hormones are divided into 3 main groups according to the number of carbon atoms they possess. Estrogens are derived from estrane, contian 18 carbon atoms, and are referred to as C-18 steroids. Androgens are derived from androstane, contain 19 carbon atoms, and are referred to as C-19 steroids. Progestins are derived from pregnane, contain 21 carbon atoms and are referred to as C-21 steroids (***Witt and thorneycroft, 1990)*** .

Progesterone

Progesterone is a C-21 steroid secreted by the corpus luteum and placenta . It is an important intermediate compartment in steroid hormones biosynthesis, and small amounts apparently enter the circulation from the adrenal cortex. 17 hydroxyprogesterons is apparently secrected along with estrogens from the ovarian follicle , and its secretion parallels that of 17 ß - estradiaol. The 20 and 20 ß - hydroxy derivatives of progesterone are formed in the corpus luteum . Secreted progestorone is probably bound to protein, although little is known about the details of binding .It has a short half life and is converted in the liver to pregnandiol , which is conjugated with glucuronic acid and excreted in urine (***Ganong , 1989)*** .

The role of progesterone in human pregnancy is thought to be preparation of the endometrium for implantation , maintenance of its secretory function and maintenance of pregnancy by increasing the resting membrane potential of uterine musculature and hence reducing myometrial activity (***Stitch , 1986)*** .

Progesterone contributes to the development of the conceptus even prior to implantation , for it specifically increases the secretion of fallopin tubes and uterus to provide appropriate nutritive matter for the developing morula and blastocyst (***Guyton , 1991)*** .

It has been suggested that, the progesterone may be important in suppressing the maternal immunological response to fetal origin , preventing maternal rejection of the trophoblast (***Rothchild, 1983).*** Perhaps the most important role for progesterone is to serve as the principal substrate pool for fetal adrenal gland production of gluco and mineralocorticoids (***Siiteri et al ., 1976).***

During pregnancy , progesterone is largely produced by the corpus luteum until about the 10th week of gestation . Indeed , until approximately the 7th week , the pregnancy is dependent upon the presence of the corpus luteum . After a transient period of shared function between the 7th week to the 10th week , the placenta emerges as the major source of progesterone (***Csapo et al ., 1973)*** . Survival of the corpus luteum is prolonged by emergency of a new stimulant of rapidly increasing intensity namly, human chorionic gonadotrophin (HCG) . This new stimulus first appears at 9 to 13 days after ovulation, just in time to prevent luteal regression. Human chorionic gonadotrophin serves to maintain the vital steroidogenisis of the crorpus luteum until approximately the 10th week of gestation , by which time placental steroidogenisis is well established (***Catt 1975)*** .

The biosynthesis of progesterone in the contrary to estrogen production by the placenta is largely independent of the quantity of precursor available, the uteroplacental perfusion, fetal wellbeing or even the presence of live fetus. This is because the fetus contributes