

بسم الله الرحمن الرحيم



SALWA AKL



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم



SALWA AKL

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



SALWA AKL



بعض الوثائق الأصلية تالفة



SALWA AKL



بالرسالة صفحات

لم ترد بالأصل



SALWA AKL

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

B17350

**RELATION BETWEEN MATERNAL SERUM
DEHYDROEPIANDROSTERONE SULPHATE
LEVEL AND SUCCESSFUL LABOUR
INDUCTION USING PROSTAGLANDINS E₁
(MISOPROSTOL)**

Thesis

Submitted to the
Faculty of Medicine
University of Alexandria
in Partial Fulfillment
of the requirements for the Degree of

**Master of
Obstetrics and Gynaecology**

By

**Azza Loutfy Abd El Wadoud Rizk
MBCh.**

Faculty of Medicine
Alexandria University

2001

SUPERVISORS

Prof. Dr. Said Shaala

Professor of Obstetrics & Gynaecology

Faculty of Medicine

Alexandria University

Prof. Dr. Ahmed Abd El Aziz Ismail

Professor of Obstetrics & Gynaecology

Faculty of Medicine

Alexandria University

Acknowledgement

First of all I have to thank GGD for the impetus He gave me to start and continue this work.

Words cannot adequately express the feelings of gratitude I have for all those who helped me to complete this work.

I would like to express my heartfelt gratitude and deep appreciation to **Professor Dr. Said Shaala**, Professor of Obstetrics & Gynaecology, Faculty of Medicine, University of Alexandria for his close supervision, encouragement, helpful criticism and valuable advice throughout this work.

I am deeply obliged and grateful to Professor. Dr. **Ahmed Abd El Aziz Ismail**, Professor of Obstetrics & Gynaecology for his kind supervision and patience, continuous encouragement, unlimited effort and guidance without which the accomplishment of this work was not possible.

Many thanks to Professor **Dr. Salah Marzok**, professor of Clinical Pathology, Faculty of Medicine, University of Alexandria, for his vast help and unlimited effort.

Finally, I wish to express my deepest gratitude and appreciation to my **Mother** and my **Husband** for their moral support.

CONTENTS

Chapter	Page
1. Introduction	1
2. Aim of the work	36
3. Material	37
4. Methods	38
5. Results	42
6. Discussion	59
7. Conclusion	66
8. Summary	67
9. References	69
Protocol	
Arabic summary	

INTRODUCTION

INTRODUCTION

Labour is an inevitable consequence of pregnancy. Only two events can prevent the onset of labour once pregnancy has become established – the death of undelivered mother or surgical removal of fetus. The time of onset of labour may vary widely, but it will happen sooner or later. ⁽¹⁾

Hormonal control of labour:

The best example of enterplay among fetus, placenta and the mother is the initiation and maintenance of parturition.

Hormonal changes in the uteroplacental environment are the principal governing factors accounting for the eventual development of uterine contractions. ⁽²⁻³⁾

Extensive experimental work on the sheep has implicated the fetal pituitary-adrenal axis in normal parturition. Near the end of pregnancy, a signal arises in the brain of the fetal sheep promotes the beginning of a coordinated sequence of endocrine phenomena that culminates in progesterone withdrawal. ⁽⁴⁾

The fetal brain parturition signal, presumably corticotropin-releasing hormone (CRH) is transmitted to fetal pituitary gland via the hypophyseal portal vessels leading to adrenocorticotropin hormone (ACTH) release from the anterior pituitary gland. ⁽⁵⁾

An increase in ACTH secretion, together with augmented responsiveness of fetal adrenal cortices that is acquired with maturation causes increase in fetal adrenal secretion of cortisol. ⁽⁵⁾

In response to increased fetal adrenal cortisol secretion, the expression of the cytochrome P_{450} 17α hydroxylase/ $17,20$ lyase (P_{450} 17α ; CYP 17) in sheep placenta is increased at the end of pregnancy. The enzyme catalyzes the 17α hydroxylation of pregnenolone. The same protein also catalyzes the removal of the C- $17,20$ side chain of 17α hydroxypregnenolone to give dehydroepiandrosterone sulphate (Figure 1).

With an increase of $P_{450}17\alpha$ activity in the trophoblast, the pregnenolone synthesized in the placenta is diverted away from pathway to progesterone.

An increase of the specific activity of this enzyme in the syncytiotrophoblast causes progesterone withdrawal and increase estrogen synthesis (Figure 1, 2).

The increase in estrogen formation is due primarily to increased availability of steroid substrate for placental P_{450} aromatase (Figure 1).

Compared with pregnenolone, progesterone is a poor substrate for the steroid -17α hydroxylase/ $17, 20$ desmolase enzyme in the sheep placenta, therefore, androstendione the immediate precursor of estrone, is synthesized in sheep placenta primarily from 17α hydroxypregnenolone via dehydroepiandrosterone to androstendione and not from 17α hydroxyprogesterone. ⁽⁶⁾

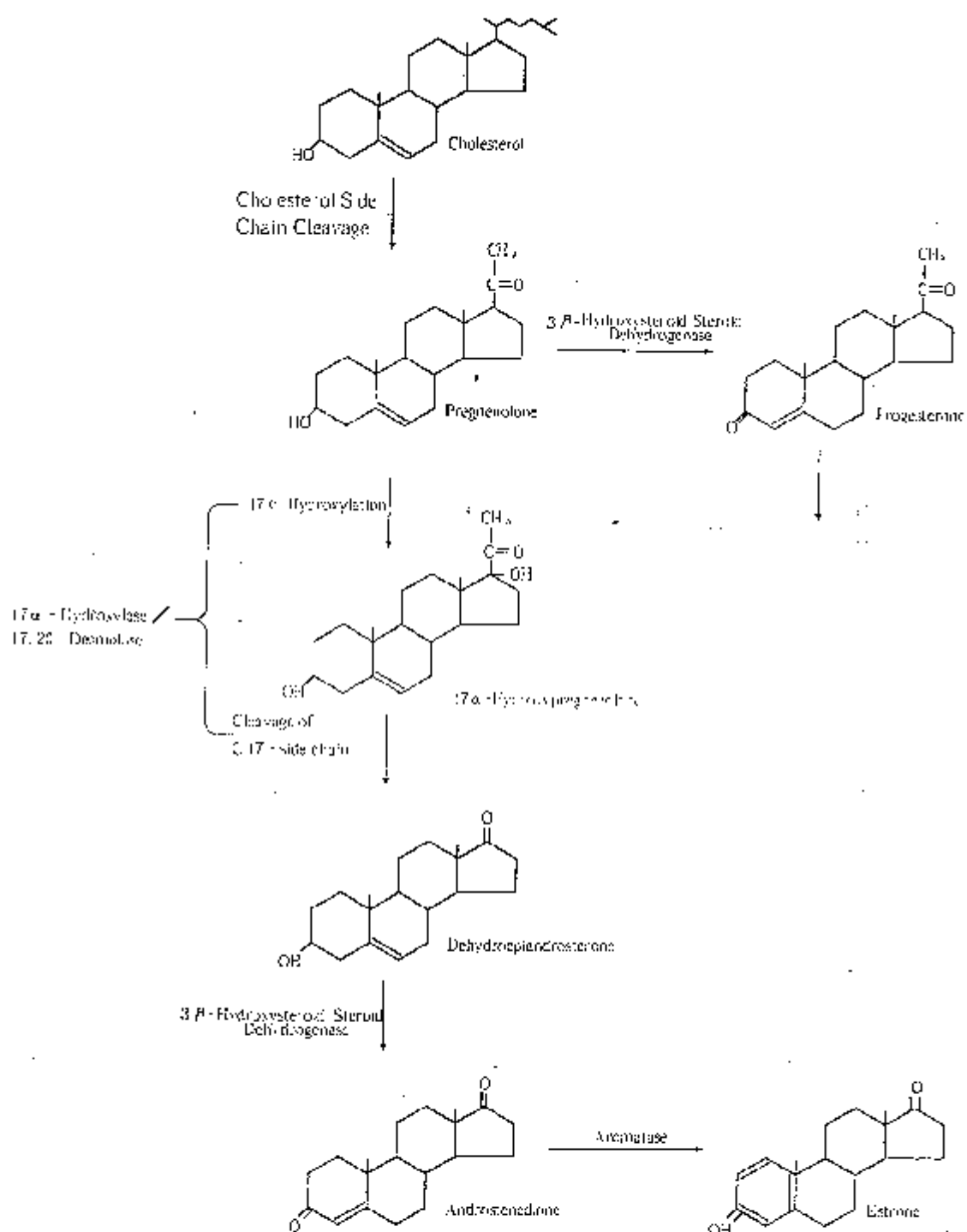


Figure-1. Fetal cortisol action to increase the expression of placental steroid 17 α -hydroxylase / 17,20-lyase to modify progesterone and estrogen biosynthesis prior to the initiation of parturition in the sheep. Quoted from Trunbull's obstetrics 1995, page 276.

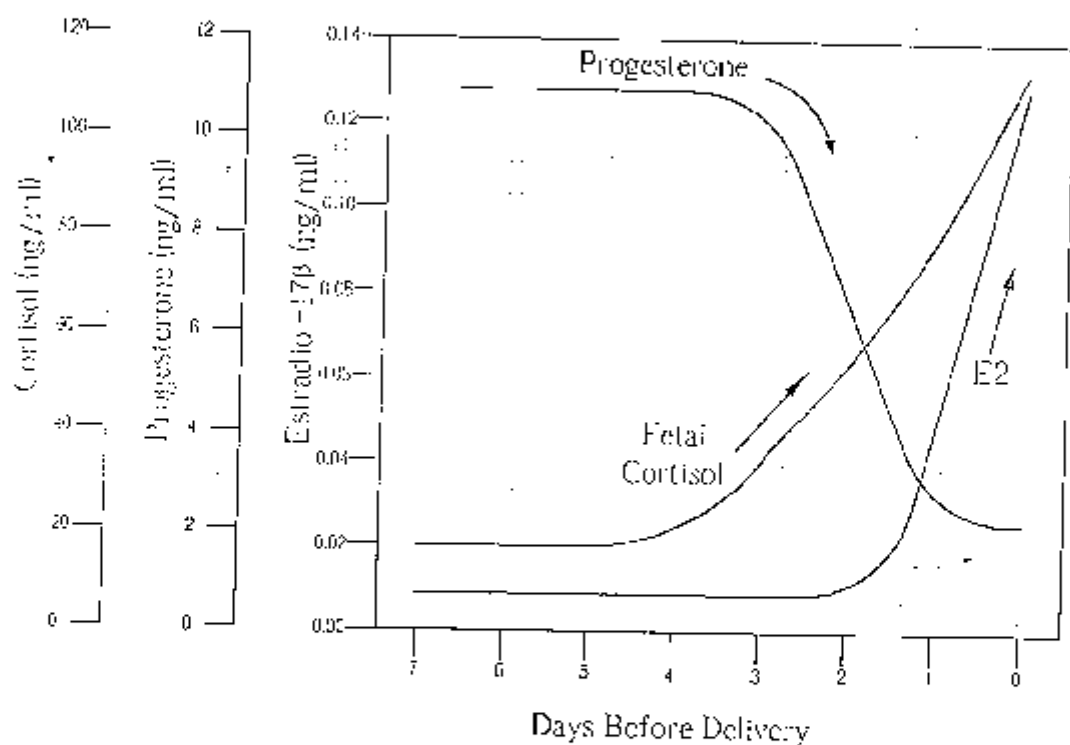


Figure 2 Endocrinal antecedents of parturition in the sheep. As the levels of fetal plasma cortisol increase, the levels of maternal plasma progesterone decline. Thereafter, there is an increase in estrogen synthesis in placenta.

Quoted from Trunbull's obstetrics 1996, page 276.