شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

HANAA ALY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

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

HANAA ALY

Vaginal blood alpha-fetoprotein as a useful marker for detection of early pregnancy failure

Thesis

Submitted for Partial Fulfillment of Master Degree in Obstetrics & Gynecology

By

Amira Ali Mohammed Abd-Elmalek

M.B.B.Ch., Faculty of Medicine – 6 October University (2012)

Under Supervision of

Prof. Dr. Hassan Tawfik Khairy

Professor of Obstetrics and Gynecology

Faculty of Medicine – Ain Shams University

Dr. Heba Abd-Elbaset Allum

Assistant Professor of Obstetrics and Gynecology

Faculty of Medicine – Ain Shams University

Dr. Walid Abd Elhady Ahmed

Lecturer of Clinical Pathology

Faculty of Medicine – Ain Shams University

Faculty of Medicine

Ain Shams University

2020

بسم الله الرحمن الرحيم

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

Acknowledgments

First and *foremost*, I feel always indebted to **Allah,** the **Most Beneficent** and **Merciful** who gave me the strength to accomplish this work,

My deepest gratitude to my supervisor, **Prof. Dr. Hassan Tawfik Khairy,** *Professor of Obstetrics and Gynecology, Obstetrics & Gynaecology – Ain Shams University, for his valuable guidance and expert supervision, in addition to his great deal of support and encouragement. I really have the honor to complete this work under his supervision.*

I would like to express my great and deep appreciation and thanks to **Dr. Heba Abd-Elbaset Allum,** *Assistant Professor of Obstetrics and Gynecology, Obstetrics & Gynaecology – Ain Shams University, for her meticulous supervision, and her patience in reviewing and correcting this work.*

I must express my deepest thanks to **Dr. Walid Abdelhady Ahmed,** *Lecturer of Clinical Pathology, Faculty of Medicine – Ain Shams University, for guiding me throughout this work and for granting me much of his time. I greatly appreciate his efforts.*

Special thanks to my **Husband,** *my* **Parents** *and all my* **Family** *members for their continuous encouragement, enduring me and standing by me.*

Amira Ali Mohammed Abd-Elmalek

List of Contents

Subject	Page No.
List of Abbreviations	**i**
List of Tables	**iii**
List of Figures	**iv**
Introduction	**1**
Aim of the Work	**4**
Review of Literature	
Pregnancy loss (miscarriage)	5
Alpha-fetoprotein and early pregnancy failure	66
Patients and Methods	**83**
Results	**88**
Discussion	**97**
Summary	**101**
References	**105**

List of Abbreviations

Abbr.	Full-term

ACOG : American College of Obstetricians and Gynecologists

AFP : a-fetoprotein

CDC : Centers for Disease Control and Prevention

EPL : Early pregnancy loss

HCG : Human chorionic gonadotropin

IPV : Intimate partner violence

IUD : Intrauterine device

NICE : National Institute for Health and Care Excellence

SD : Standard deviation

SPSS : Statistical package for social science

WHO : World Health Organization

List of Tables

Table No.	Title	Page No.
Table (1):	Difference between Groups regarding Initial Characteristics	88
Table (2):	Difference between Groups regarding Serum and Vaginal AFP Levels	92
Table (3):	Difference between Serum and Vaginal AFP Levels in Both Groups	95

List of Figures

Figure No.	Title	Page No.
Figure (1):	Box-and-Whisker Plot Chart showing Difference between Groups regarding Age	89
Figure (2):	Box-and-Whisker Plot Chart showing Difference between Groups regarding Parity	89
Figure (3):	Box-and-Whisker Plot Chart showing Difference between Groups regarding No. of Previous Miscarriage(s)	90
Figure (4):	Box-and-Whisker Plot Chart showing Difference between Groups regarding Gestational Age	90
Figure (5):	Bar-Chart showing Difference between Groups regarding No. of Bleeding Episodes	91
Figure (6):	Bar-Chart showing Difference between Groups regarding Severity of Bleeding	91
Figure (7):	Box-and-Whisker Plot Chart showing Difference between Groups regarding Serum AFP Levels	93
Figure (8):	Box-and-Whisker Plot Chart showing Difference between Groups regarding Vaginal AFP Levels	93
Figure (9):	Box-and-Whisker Plot Chart showing Difference between Groups regarding Serum-to-Vaginal AFP Ratio	94

Figure (10): Box-and-Whisker Plot Chart showing Difference between Serum and Vaginal AFP Levels in Group I [Missed Miscarriage Group] 96

Figure (11): Box-and-Whisker Plot Chart showing Difference between Serum and Vaginal AFP Levels in Group II [Cerclage Group] 96

Introduction

Early pregnancy loss the pregnant clinical obstetric scenario is characterized by vaginal bleeding by recent research efforts statistically estimates that around 15% of all gestations end in miscarriage **(Pinor et al., 2018).**

In routine clinical practices transvaginal sonography in conjunction to HCG assay are performed to reassure the viability of gestation sac. However, those practices do not all permit the immediate diagnosis of all clinical scenarios of miscarriage. In other situations, repetitive of HCG assay is required for definite diagnosis of early pregnancy loss **(Mor et al., 2018).**

Previous observations conducted by investigators of clinical symptoms and history profile have revealed that bleeding within first trimester is basic findings statistically significant correlated to miscarriage events. Bearing in mind that vaginal bleeding laboratory investigations could be of great use in immediate diagnosis of miscarriage clinical outcome. Since it was revealed by trial research groups, the progesterone supplements and anticoagulants are of no longer benefit of clinical trials. On the other hand, patients should be reassured of medical observed **(Gracia et al., 2005).**

The current trend in research efforts is to elucidate useful biomarkers that reflect intrauterine pregnancy failure. AFP is raised in research interest by various investigators in which molecular produce from the yolk sac as early as 5^{th} gestational week and, fetal liver it was logically concluded that in cases of disruption of gestational sac and occurs vaginal bleeding. Assay of AFP is useful present with high specificity and sensitivity, characteristics when measure in the serum; however, it is measure form vaginal bleeding requires investigators efforts to compare with level with serum, for that AFP originates other source only of the gestation sac since it couldn't differentiate; the non-pregnancy source as cervical infection **(Mor et al., 2018).**

Vaginal AFP concentration could be non-invasive protocol for identification of non-uterine pregnancy failure before sonographic visualization of intrauterine pregnancy **(Mor et al., 2018).**

Aim of the Work

The aim of our study is to prove the role of vaginal blood alpha-fetoprotein as a marker for detection of early inter-uterine pregnancy failure.

Chapter 1
Pregnancy loss (miscarriage)

Spontaneous abortion, or miscarriage, is defined as a clinically recognized pregnancy loss before the 20th week of gestation. The World Health Organization (WHO) defines it as expulsion or extraction of an embryo or fetus weighing 500 g or less. The term "fetus" will be used throughout this discussion, although the term "embryo" is the correct term at ≤10 weeks of gestation ***(Goddijn and Leschot, 2000).***

Pregnancy loss, also referred to as miscarriage or spontaneous abortion, is generally defined as a nonviable intrauterine pregnancy up to 20 weeks gestation. Early pregnancy loss, which occurs in the first trimester, is the most common type. The nonspecific symptoms of vaginal bleeding and uterine cramping associated with pregnancy loss can occur in normal, ectopic, and molar pregnancies, which can be a source of frustration for patients and clinical confusion for care providers ***(NICE, 2019).***

A variety of terms are used to describe nonviable pregnancies, which can lead to confusion for clinicians and patients. We take the following approach: