

**Correlation Between Hemoglobin A1c and Umbilical Artery
Doppler As Predictors for Perinatal Outcome In Diabetic
Pregnancy and Diabetic Pregnancy complicated by
Preeclampsia In Third Trimester**

Thesis

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By

Mai Tawfek Sobhi

Maadi Military Hospital

Cairo University – 2010

Under Supervision of

Prof. Dr. Ahmed Hisham Mohamed

Professor of Obstetrics and Gynecology

Faculty of Medicine – Cairo University

Prof. Dr. Nahla Ali Fawzy

Assistant Professor of Clinical & Chemical Pathology

Faculty of Medicine – Cairo University

Dr. Hisham Mamdouh Haggag

Lecturer of Obstetrics and Gynecology

Faculty of Medicine – Cairo University

Faculty of Medicine

Cairo University

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DEDICATION

*To my **Parents** who taught me the principles and patience.*

*To my **brothers** who gave me the smile during hard times.*

*To my **friends** , who gave me the care and support.*

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ABSTRACT

It is unquestioned that diabetes mellitus has a significant impact on pregnancy outcome. Both the fetus, and the mother commonly experience serious complications directly attributable to diabetes. The likelihood of successful outcomes with diabetes is related somewhat to the degree of glycemic control & Hemoglobin A1C .

Pregnancies complicated by diabetes mellitus have a high prevalence of pregnancy-induced hypertension, intrauterine growth restriction and fetal distress. This could be attributed to placental insufficiency. Hyperglycemia may cause changes in maternal-placental blood flow during the pregnancy that may lead to preeclampsia and intrauterine growth restriction (IUGR). The role of umbilical artery Doppler in prediction of adverse outcome in pregnancies complicated by preeclampsia & IUGR is well established while the usefulness of umbilical artery Doppler velocimetry for the monitoring of diabetic pregnancies is controversial. The aim of the present study was to assess usefulness of using both Hemoglobin A1C and umbilical artery Doppler velocity waveform analysis in predicting adverse perinatal outcomes for pregnancies complicated by diabetes mellitus per se and pregnancies complicated by both diabetes mellitus and preeclampsia .

Key words : Diabetes Mellitus – Hemoglobin A1C – Umbilical Artery Doppler – Preeclampsia .

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ABBREVIATIONS

NDDG: National Diabetes Data Group

2hsPPS : 2 Hours Post Prandial

AC: Abdominal Circumference

ACOG: American College of Obstetricians and Gynecologists

ADA : American Diabetes Association

AEDV : Absent End Diastolic Volume

AF: Amniotic Fluid

AFI: Amniotic Fluid Index

ATP :Adenosin Try Phosphatase.

BMI: Body Mass Index

BP: Blood pressure

BPD: Biparietal Diameter

BPP: Biophysical Profile

BPPS : Biophysical Profile Score

CHT: Chronic Hypertension

CPR: Cerebro-Placental Ratio

CS: Cesarean Section

CST: Contraction Stress Test

CT:	Computed Tomography
CTG	Computerized Cardiotocography
CVS:	Cardio-Vascular System
CW:	Continuous Wave
DI :	Doppler Index
DM:	Diabetes Melleitus
EDD:	Expected Date of Delivery
EDF:	End Diastolic Flow
FAST :	fetal acoustic stimulation test
FBS :	Fasting Blood Sugar
FGR:	Fetal Growth Restriction
FHR :	Fetal Heart Rate
FL:	Femur Length
FM :	Fetal Movement
FVWs:	Flow Velocimetry Waves
GDM:	gesitional diabetes melleitus
GH:	Gestational Hypertension
HBA1C:	Glycated Hemoglobin
IADPSG :	International Association Diabetes & Pregnancy Study Group
IFCC :	International Federation of Clinical Chemistry

IFG:	Impaired fasting glucose
IGT:	Impaired glucose tolerance
IUGR:	Intra uterine growth restriction
LBW:	low birth weight
LGA :	Large for gestational age
LMP :	Last Menstrual Period
MODY :	Maturity onset of diabetes young
NHBPEP :	National High Blood Pressure Education Program
NIH :	National Institute of Health
NPV :	Negative Predictive value
NST :	Non stress test
OGTT :	Oral Glucose Tolerance Test
PEE :	Preeclampsia
PGD:	Pregestitional Diabetes
PI :	Pulsatility index
PIH :	Pregnancy Induced Hypertension
PPV :	Positive Predictive Value
RDS :	Respiratory Distress Syndrome
REDV :	Resistant End Diastolic Volume
RI :	Resistant index

S/D Ratio : Systolic / Diastolic Ratio

TNF : Tumour necrosis Factor.

UA : Umbilical Artery

UAPI : Umbilical Artery Pulsatility Index

UARI : Umbilical Artery Resistant Index

VAS : Vibroacoustic stimulation

WHO : World Health Organization

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