



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MONA MAGHRABY



Role of Cerebro-Placental Ratio in Prediction of Perinatal Outcome in High-Risk Pregnancies with Intrauterine Growth Restriction

Thesis

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By

Esraa Hamdy Mohammed Mohammed

M.B.B.Ch – Ain Shams University – 2014

*Resident at Obstetrics and Gynecology Department, El Salam
Specialised Hospital, Cairo*

Under Supervision of

Prof. Mohamed Ahmed Hassan El-Kady

*Professor of Obstetrics and Gynecology
Faculty of Medicine – Ain Shams University*

Dr. Ebtihal Mohamed Eltaieb

*Lecturer in Obstetrics and Gynecology
Faculty of Medicine – Ain Shams University*

*Faculty of Medicine
Ain Shams University*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سُبْحَانَكَ لَا عِلْمَ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Abbreviations

Abb.	Full term
AC.....	<i>Abdominal Circumference</i>
ACOG	<i>American Collage of Obstetrics</i>
ARDEV.....	<i>Absent or Reversed End Diastolic Velocity</i>
BPD	<i>Biparietal Diameter</i>
BPP.....	<i>Biophysical Profile</i>
CMV.....	<i>Cytomegalovirus</i>
CPR.....	<i>Cerebro-placental Ratio</i>
CRL.....	<i>Crown Rump Length</i>
CS	<i>Cesarean section</i>
EDV	<i>End Diastolic Velocity</i>
EFW.....	<i>Expected Fetal Weight</i>
FGR	<i>Fetal Growth Restriction</i>
FHR	<i>Fetal Heart Rate</i>
FL	<i>Femur length</i>
GA.....	<i>Gestational Age</i>
HC.....	<i>Head Circumference</i>
HELLP	<i>Haemolysis, Elevated Liver Enzymes and Low Platelets</i>
IUGR	<i>Intra Uterine Growth Restriction</i>
LMP.....	<i>Last Menstrual Period</i>
MCA.....	<i>Middle Cerebral Artery</i>
NICU	<i>Neonatal Intensive care Unite</i>
NPV	<i>Negative Predictive Value</i>
PI	<i>Pulsatility Index</i>

List of Abbreviations cont...

Abb.	Full term
<i>PIH</i>	<i>Pregnancy Induced Hypertension</i>
<i>PPV</i>	<i>Positive Predictive Value</i>
<i>PW</i>	<i>Pulsed Waves Doppler</i>
<i>RI</i>	<i>Resistance Index</i>
<i>S/D</i>	<i>Systolic / Diastolic Ratio</i>
<i>SGA</i>	<i>Small for Gestational Age</i>
<i>TCD</i>	<i>Transverse cerebellar diameter</i>
<i>UA</i>	<i>Umbilical Artery</i>
<i>UAV</i>	<i>Umbilical Artery Velocimetry</i>
<i>US</i>	<i>Ultrasound</i>
<i>USG</i>	<i>Ultrasonography</i>
<i>VEGF</i>	<i>Vascular Endothelial Growth Factor</i>

INTRODUCTION

Intrauterine growth restriction (IUGR) is defined as sonographic estimated fetal weight below 10th percentile for gestational age (*Sharma et al., 2016*). According to the American College of Obstetricians and Gynecologists, IUGR is “one the most common and complex problems in modern obstetrics (*ACOG, 2012*).

This characterization is understandable considering the various published definitions, poor detection rate, limited preventive or treatment options, multiple associated morbidities, and increased likelihood of perinatal mortality associated with IUGR. Suboptimal growth at birth is linked with impaired intellectual performance and diseases such as hypertension and obesity in adulthood (*Devaskar and Chu, 2016*).

Current challenges in the clinical management of IUGR include accurate diagnosis of the truly growth-restricted fetus, selection of appropriate fetal surveillance, and optimizing the timing of delivery. Despite the potential for a complicated course, antenatal detection of IUGR and its antepartum surveillance can improve outcomes (*McCowan et al., 2018*).

It is important to synthesize and assess the strength of evidence of the current literature regarding the use of Doppler velocimetry of the umbilical artery and middle cerebral artery for non-anomalous fetuses with suspected IUGR, and to provide

recommendations regarding antepartum management of these pregnancies, in particular for singleton gestations (**Baschat, 2005**). It has been acknowledged that defining small for gestational age (birthweight below 10th percentile for gestational age) by general population charts vs customized charts is an important issue, but this is not the focus of this clinical opinion (**Gardosi and Francis, 2009; Schlaudecker et al., 2017**).

Intrauterine growth restriction (IUGR) is an indicator of the increased risk of perinatal and long-term mortality and morbidity when compared to those born with normal growth. There is a considerable difference in the incidence of IUGR across different populations. In babies born with a birth weight less than 2500 gms, its prevalence is almost 33%. The incidence of IUGR shows a dependence on economic growth too, with a relatively lower incidence in developed countries (4-8%) as compared to that in developing countries (6%-30%) (**Cosmi et al., 2011**).

The average incidence of IUGR is nearly 8% in the general population. In nearly 35%-40% of the cases, IUGR is the consequence of an abnormal condition. Factors like placental insufficiency, maternal hypertension, cardiovascular disease, diabetes, infections, low socioeconomic status, previous history and preeclampsia are some of the known risk factors for IUGR (**Albu et al., 2014**).

Poor pregnancy outcome has shown a strong link with IUGR; more than half the stillbirths are associated with IUGR