بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MONA MAGHRABY

Insulin versus metformin (with or without supplementary insulin) in the control of gestational diabetes mellitus, A randomized control study.

Thesis

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By

Fatma Taha Ali

M.BBCh, Faculty of Medicine, AlAzhar University for Girls (201٠)

Supervised by

Prof. Dr. Khaled Ibrahim Ali Abdallah

Professor of Obstetrics and Gynecology

Faculty of Medicine – Ain Shams University

Prof. Dr. Sherif Ahmed Ashoush

Professor of Obstetrics and Gynecology

Faculty of Medicine – Ain Shams University

Dr. Ahmed Mohamed Abbas

Lecturer of Obstetrics and Gynecology

Faculty of Medicine – Ain Shams University

Faculty of Medicine

Ain Shams University

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List of Abbreviations

Abb.	Full term
ACOG	*American College of Obstetrics and Gynecology*
ADA	*American Diabetes Association*
ASD	*Atrial Septal Defect*
BMI	*Body mass index*
CDC	*Centers for Disease Control and Prevention*
CNS	*Central nervous system*
COA	*Coarctation of Aorta*
HCM	*Hypertrophic cardiomyopathy*
IDF	*International Diabetes Federation*
MiG	*Metformin in Gestational Diabetes*
PDA	*Patent Ductus Arteriosus*
RCTs	*Randomized controlled trial*
RDS	*Respiratory distress syndrome*
RR	*Relative risk*
SD	*Standard deviation*
SPSS	*Statistical package for social science*
TGA	*Transposition of Great Vessels*
TTNB	*Transient tachyopnea of newborn*
VSD	*Ventricular septal defect*

INTRODUCTION

Gestational diabetes mellitus (GDM) is among the most frequent and most serious complications following pregnancy ***(American Diabetes Association, 2018).*** In Egypt, there are approximately 2 million deliveries per year, therefore assuming a GDM incidence of at least 5% and a 50% rate of GDM women ending up on insulin, the rate of Egyptian GDM women needing insulin would be approximately 50 000 per year, causing a huge medical and economic burden ***(Abouzeid et al., 2014).***

Fetal and neonatal complication of GDM including intrauterine fetal demise, congenital anomaly, fetal macrosomia, birth traumas, hypoglycemia, hyperbilirubinemia, respiratory distress, cardiomyopathy, hypocalcemia, prematurity, and pulmonary hyaline membrane disease. Further complications that may arise from GDM in later stages of childhood include metabolic syndrome and metabolic disorders, such as obesity, hypertension, dyslipidemia, and glucose intolerance ***(Rastogi & Jain, 2016).***

Maternal short- term complications of GDM include increased chance of cesarean section, hyperglycemia crisis, urinary tract infections, and preeclampsia. Moreover, long- term complications include predisposition to developing type 2 diabetes as well as cardiovascular disorders such as hyperlipidemia and hypertension ***(Saleh et al., 2016).***

Metformin is a biguanide hypoglycemic agent that reduces hepatic gluconeogenesis and increases peripheral insulin sensitivity is a rational option for women with GDM ***(Rowan et al., 2008)***. Evidence from the Metformin in Gestational Diabetes (MiG) trial showed that, compared with insulin, metformin was not associated with increased prenatal complications although there was an increase in spontaneous preterm births. When asked to choose, metformin was preferred to insulin by GDM women ***(Hatem El Gamal et al., 2018)***.

Metformin, being cheap, safe and orally administered, has recently gained wide interest and acceptance for use in GDM, and is currently classified by the FDA among category B drugs for use in pregnancy ***(Pridjian et al., 2010).*** It is also included in the National Institute for Health and Care Excellence (NICE) guidelines and the American College of Obstetricians and Gynecologists (ACOG) practice bulletin as a treatment option for GDM ***(The American College of Obstetricians and Gynecologists, 2013)***. It seems to be an attractive option, especially for patients in developing countries, where cost and lack of medical insurance are major determinants of any drug's success ***(Ashoush et al., 2016).***

AIM OF THE WORK

The aim of the study is to assess the efficacy of metformin in controlling maternal blood glucose level compared to insulin in women with GDM.