

STUDY ON SAUDI WOMEN WITH GESTATIONAL DIABETES AND ITS EFFECTS ON THEIR HEMATOLOGICAL AND CLINICOCHEMICAL PROFILES

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Hematology
and
Clinical Chemistry

Introduction

Gestational diabetes mellitus (GDM) is the most common metabolic complication of pregnancy and that is characterized by glucose intolerance resulting in hyperglycemia of different severities (Reece 2010). Many studies have shown that GDM can alter the blood cell parameters (Sentrk et al., 2017) Also, may cause alterations in the biochemical profiles of the stressed body (Khan et al., 2012)

Materials and Methods

Criteria of participated pregnant females

Inclusion criteria:

For control group: Apparently healthy pregnant women (24-33years) without gestational diabetes in 3rd trimester

For GDM group : Pregnant women (24- 33years) with GDM in 3rd trimester included in this study and do not have any other complications

Exclusion criteria:

Pregnant with with corticosteroid therapy
Polycystic ovarian syndrome, Hypertension
Tobacco use within 5 years, Renal disease
Antioxidants or hormone replacement therapy, Hepatic hematological abnormalities

Study design

1. Control group:

30 Voluntary apparently healthy Saudi pregnant female (24-33) years in 3rd trimester

2. GDM group:

30 Voluntary apparently healthy Saudi pregnant female (24-33) years with GDM in 3rd trimester

Blood samples

1ST part of blood sample:

EDTA tube for CBC

RBCs count, Hb conc ,
PCV% , WBCs count,
DLC , platelets count,
and platelet indices

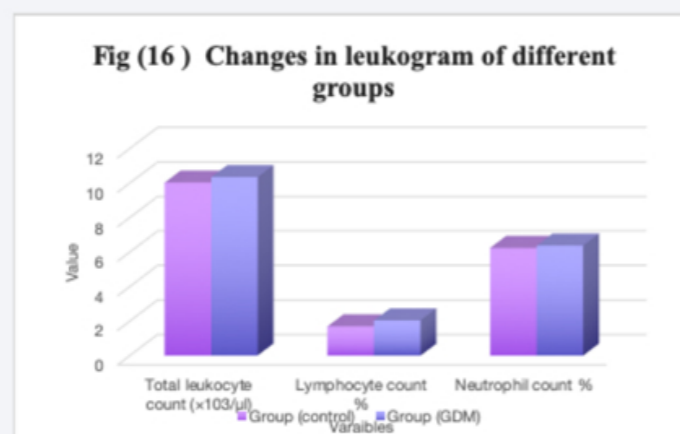
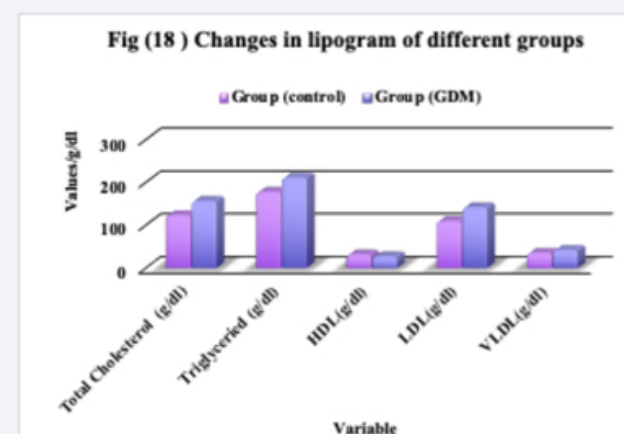
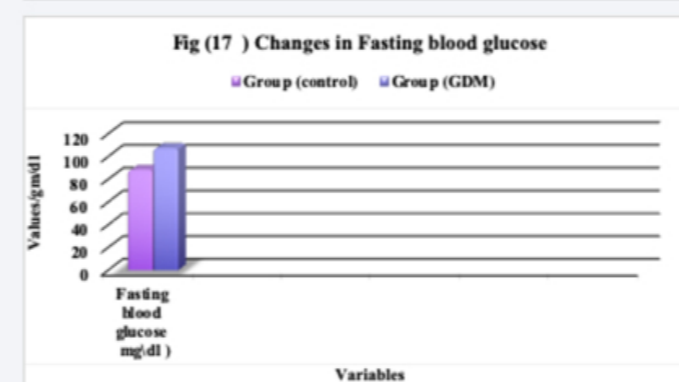
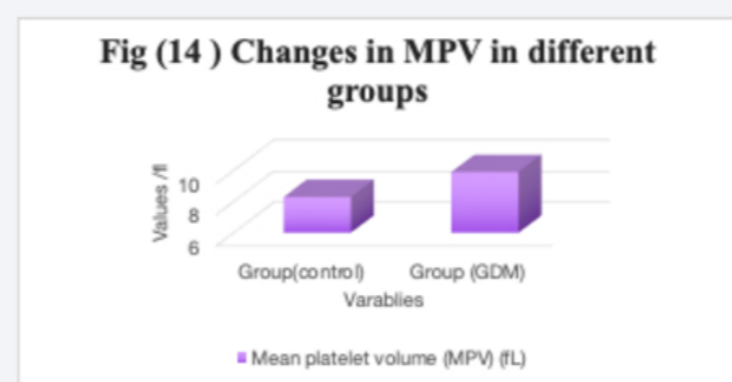
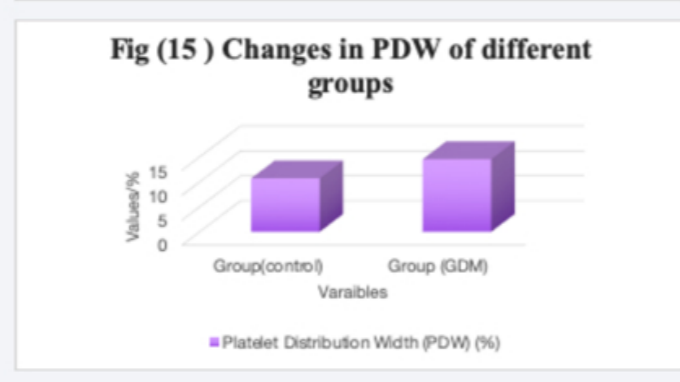
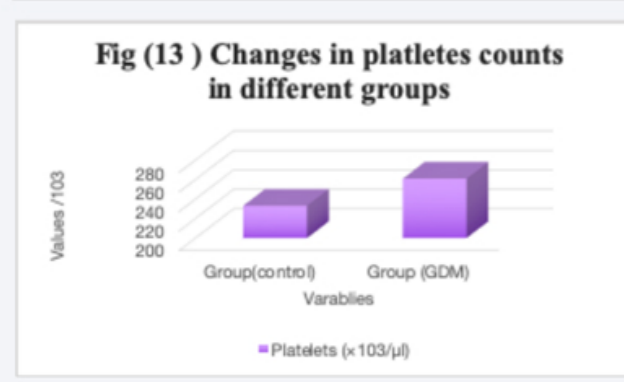
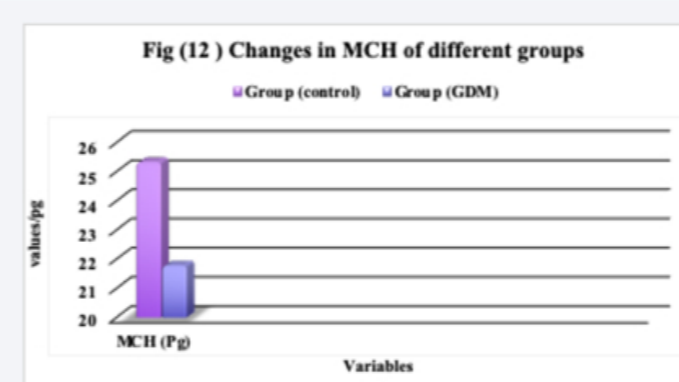
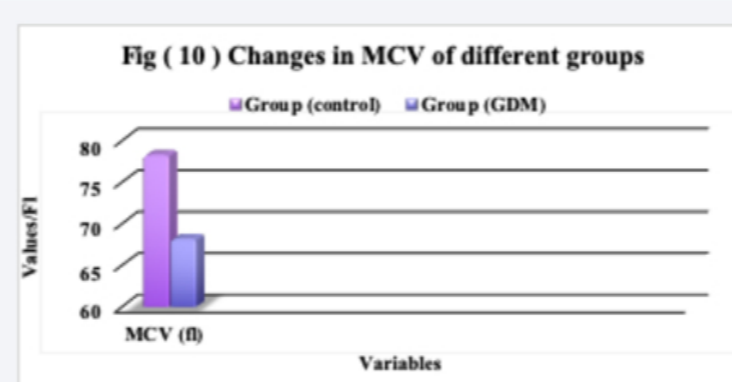
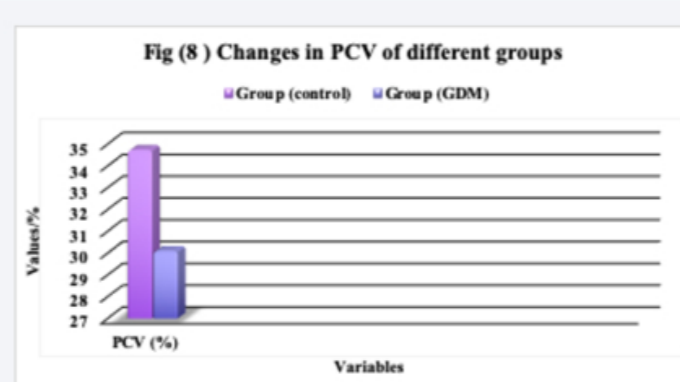
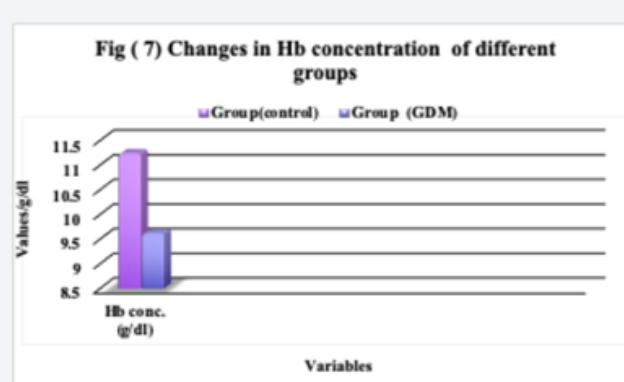
2ND part of blood sample:

Plain tube for biochemical parameters

A. Fasting blood glucose

B. Lipogram profiles
Total lipoproteins ,Total
Cholesterol ,Triglyceride
HDL ,LDL ,VLDL

Results



Parameter	Group (control)	Group (GDM)	Level of significance
Hb conc. (g/dl)	11.24 ± 0.09	9.62 ± 0.07 *	0.001
PCV (%)	34.74 ± 0.16	30.10 ± 0.11 *	0.001
MCV (fl)	78.28 ± 1.12	68.18 ± 0.97 *	0.001
MCH (Pg)	25.33 ± 0.41	21.78 ± 0.32 *	0.001
Platelets (×103/μl)	233.18 ± 1.71	260.93 ± 1.43*	.001
Mean platelet volume (MPV) (fL)	8.30 ± 0.66	9.90 ± 0.86*	.001
Platelet Distribution Width (PDW) (%)	10.72 ± 0.13	14.55 ± 0.27*	.001
Lymphocyte count %	1.69 ± 0.022	2.04 ± 0.04*	0.001
Fasting blood glucose (mg/dl)	88.41 ± 1.083	107.53 ± 1.29*	0.001
Total Cholesterol (g/dl)	123.6 ± 8.33	156.67 ± 10.47*	0.016
Triglyceride (g/dl)	177.81 ± 1.26	211.18 ± 1.25*	0.001
HDL (g/dl)	31.52 ± 1.07	27.13 ± .26*	0.001
VLDL(g/dl)	35.56 ± .24	42.24 ± .25*	0.001
LDL (g/dl)	109.97 ± 1.17	141.80 ± .96*	0.001

Table1: Changes of hematological and clinicochemical parameters of different groups (Means ± SE)

Conclusion

We conclude that GDM is one of the biggest problems facing pregnant female in KSA. The GDM induced many alterations in hematological parameters as leukogram (total leukocyte count, lymphocyte count and platelets count and indices), and biochemical parameters as elevation in serum glucose concentration and induces remarkable changes in different lipogram parameters

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