Original Article

Evaluation of Biochemical Profile in Pregnant and Non-Pregnant Women, Mirpur AJK

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ABSTRACT

Objective: To evaluate biochemical profile in pregnant women in Mirpur, AJK.
Study Design: Cross-sectional study
Place and Duration of Study: This study was conducted at the Department of Obstetrics and Gynaecology, Mohtarma Benazir Bhutto Shaheed Medical College, Mirpur, AJK from January 2019 to May 2019.
Materials and Methods: We selected 100 women for our study and we divide into two groups in which 80 pregnant women and 20 non-pregnant women from one hospital of Mirurajk . We take blood sample for biochemical study. We measure glucose level in both groups in pregnant women and non -pregnant women. We also measured Total cholesterol, low density lipoprotein, High density lipoprotein, IDL and triglyceride in both groups in pregnant women and non-pregnant women. We measured all samples by Microlab 300 equipment. For measuring we used Merk kits of glucose and lipid profile.
Results: We observed in our study that glucose level in serum is high in pregnant women as compare to non-pregnant women. We found that fasting glucose mg/dl level is (110.8 ± 10.2) in pregnant women while in non-pregnant women fasting glucose levelmg/dl is (97.4 ± 9.4). Lipid profile is also high in pregnant women as compare to non-pregnant women. Total cholesterol level in pregnant women is higher compare to non-pregnant women. Total cholesterol in pregnant women is (241. ± 13.8)mg/dl and in non- pregnant women is (193.6 ± 31.5)mg/dl. LDL value in pregnant women is (126.8 ± 23.5)mg/dl and in non-pregnant women is (117.5± 19.5)mg/dl. HDL value in the pregnant women is (58. ± 9.5)mg/dl and in non-pregnant women is (43.5 ± 10.2)mg/dl. Total glyceride value in pregnant women is (171.2 ± 36.5)mg/dl.
Conclusion: Itisconcluding that with passage of pregnancy the lipid level is high in pregnant women .In non-pregnant women the level remains constant. There is some variation occurred in our study to other study in biochemical profile and it is due to environmental, factor, age, race and socio-economic factors.

Key Words: Pregnant women,Biochemical profile, non-pregnant women.

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INTRODUCTION

In woman's uterus, from fertilization to development ofa fetus or embryo, time or period is Pregnancy.[1] Pregnancy is also accompanied with alteration of metabolic and hormonal changes; all these philological changes are link with pregnancy .[2]

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It is also said that changes in lipid metabolism and lipoprotein is also accompanied with pregnancy and it demands for metabolic process in fetus.[3] Body is not balance with biochemical changes and significantly affected the profile in pregnancy.[4-6] Hypothalamic axis is suppress during pregnancy and it is due to increase estrogen release.[7] In pregnancy there are certain metabolic disorder and also biochemical, most common is gestational diabetes mellitus (GDM).[8] The them percentage of GDM is very and it is complicated which is 2-10% during pregnancy.[9] In pregnant women with diabetic show complication and some disorder in fetus and also for women such as fetal obesity, postpartum hemorrhage, preterm births, infections, congenital anomalies, death in worst case scenarios, stillbirths, intrauterine growth retardation, birth injuries and miscarriage.[10,11] Pre-eclampsia and eclampsia are common complication in pregnant women and we found in pregnancy ,with the help of biochemical profile changes we can easily diagnosed the complication of these disorders.[12] Biochemical profile changes occurred in pregnancy and these changes and alteration are used as diagnostic marker in pregnancy

for adverse out come and in these changes are mostly lipid metabolic disorders ,glucose level alteration with DM and also with gestational hypertension.[13] The objective of this study to evaluate biochemical profile in pregnant women in Mirpur AJK.

MATERIALS AND METHODS

We selected 100 women for our study and we divide into two groups in which 80 pregnant women and 20 non-pregnant women from one hospital of Mirur AJK. We take blood sample for biochemical study. We measure glucose level in both groups in pregnant women and non -pregnant women. We also measured Total cholesterol, low density lipoprotein, High density lipoprotein, IDL and triglyceride in both groups in pregnant women and non-pregnant women. We measured all samples by Microlab 300 equipment. For measuring we used Merk kits of glucose and lipid profile.

RESULTS

We observed in our study that glucose level in serum is high in pregnant women as compare to non-pregnant women. We found that fasting glucose mg/dl level is (110.8 ± 10.2) in pregnant women while in non-pregnant women fasting glucose level mg/dl is (97.4 ± 9.4). Lipid profile is also high in pregnant women as compare to non-pregnant women.

Table No.1: Participant characteristics

	(n=80) Pregnant women	non- pregnant women(n=20)
Age (years)	30.2± 7.2	30.5 ± 8.6
Female (%)	80	20
Body weight (Kg)	68.2± 11.5	77.4± 11.4
BMI (kg/m2)	26.3± 2.7	26.4± 2.6
SBP sitting (mmHg)	138.9 ± 8.2	135.4 ± 8.3
DBP sitting (mmHg)	86.6 ± 5.9	85. 9 ± 6.5

Table No.2: Ambulatory blood pressure monitoring. Mean values of blood pressure

Pregnant women (n=80)	Non-pregnant women (n=20)
Systolic BP - 24 hours (mmHg)	
138.9 ± 8.2	135.4 ± 8.3
Diastolic BP - 24 hours (mmHg)	
86.6 ± 5.9	85. 9 ± 6.5

Total cholesterol level in pregnant women is higher compare to non-pregnant women. Total cholesterol in pregnant women is (241. ± 13.8)mg/dl and in non-pregnant women is (193.6 ± 31.5)mg/dl. LDL value in pregnant women is (126.8± 23.5)mg/dl and in non-pregnant women is (117.5± 19.5)mg/dl. HDL value in the pregnant women is (58. ± 9.5)mg/dl and in non-pregnant women is (43.5 ± 10.2)mg/dl. Total glyceride value in pregnant women is (171.2 ± 36.5)mg/dl.

Table No.3: Biochemical profile of pregnant women and non-pregnant women

(n=80) Pregnant women	Non- pregnant women (n=20)
Fasting Blood Glucose(mg/dl)	
110.8 ± 10.2	97.4 ± 9.4
Total Cholesterol (mg/dl)	
241. ± 13.8	193.6 ± 31.5
LDL (mg\dl)	
126.8 ± 23.5	117.5± 19.5
HDL (mg\dl)	
58. ± 9.5	43.5 ± 10.2
Triglycerides (mg\dl)	
171.2 ± 36.5	145.3 ± 33.2

DISCUSSION

The result showed the glues level is high in pregnant women as compare to not pregnant women. This result is close with Benin City, Nigeria study of pregnant women.[13] We selected 100 women for our study and we divide into two groups in which 80 pregnant women and 20 non-pregnant women from one hospital of Mirur AJK. We take blood sample for biochemical study. We measure glucose level in both groups in pregnant women and non -pregnant women. We also measured Total cholesterol, low density lipoprotein, High density lipoprotein, IDL and triglyceride in both groups in pregnant women and non-pregnant women. We measured all samples by Microlab 300 equipment. For measuring we used Merk kits of glucose and lipid profile. In early pregnancy hormone are released high such as estrogen and progesterone and change carbohydrate metabolism. Secretion of some hormone is high in pregnancy which causes metabolic disorders. In these hormone lactogen, estrogen, progesterone cortisol and prolactin. These hormone induce resistance in insulin.[14-16] In some other study showed that total cholesterol and triglyceride level is same in pregnant women and non- pregnant women.[16] We observed in our study that glucose level in serum is high in pregnant women as compare to non-pregnant women. We found that fasting glucose mg/dl level is (110.8 ± 10.2) in pregnant women while in non-pregnant women fasting glucose level mg/dl is (97.4 ± 9.4). Lipid profile is also high in pregnant women as compare to non-pregnant women. Total cholesterol level in pregnant women is higher compare to non-pregnant women. Total cholesterol in pregnant women is (241. ± 13.8)mg/dl

and in non- pregnant women is (193.6 ± 31.5)mg/dl. LDL value in pregnant women is (126.8 ± 23.5)mg/dl and in non-pregnant women is (117.5± 19.5)mg/dl. HDL value in the pregnant women is (58. ± 9.5)mg/dl and in non-pregnant women is (43.5 ± 10.2)mg/dl. Total glyceride value in pregnant women is (171.2 ± 36.5)mg/dl. The study showed that total cholesterol, triglyceride ,low density protein are high in pregnant women as compare to non-pregnant women.[17,18] In some other study showed that lipid profile is high in pregnant women as compare to non-pregnant women .[19] Result showed that metabolic changes specially lipid metabolism caused to increase hepatic lipase activity.[20,21] Our study result is also supported by one another study that there is correlation is exist in adipose tissue LPL activity and plasma high density lipoprotein level.[22] It is said that lipid changes are due to zygote formation. It is occurred in in first trimester of pregnancy as result cycle shift from carbohydrate to lipid.[23] Same result is observed in our study that BMI is correlated with triglyceride level and this result is also exist with some other study.[24,25] So its mean that with passage of pregnancy the lipid level is high in pregnant women .In non-pregnant women the level remains constant. There is some variation occurred in our study to other study in biochemical profile and it is due to environmental, factor, age, race and socio-economic factors.

CONCLUSION

It is concluded that with passage of pregnancy the lipid level is high in pregnant women .In non-pregnant women the level remains constant. There is some variation occurred in our study to other study in biochemical profile and it is due to environmental, factor, age, race and socio-economic factors.

Author's Contribution:

Concept & Design of Study:	Aurooj Fatima
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Revisiting Critically:	Aurooj Fatima, Bushra Kant
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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