Original Article

Evaluation of Serum Lipid Profile in Preeclampsia and Healthy Pregnant Women, Mirpur AJK

Lipid Profile in Preeclampsia and Pregnant Women

Aurooj Fatima[1], Aisha Yousaf[2], Shakila Khadim[3] and Asnad[4]

ABSTRACT

Objective: To evaluate Serum Lipid Profile in preeclampsia Patients and normal 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 and Biochemistry, Mohtarma Benazir Bhutto Shaheed Medical College Mirpur AJK from January 2018 to July 2019.
Materials and Methods: We take for study 200 Preeclampsia patients and 100 health pregnant women. We take blood samples from both groups women and analyzed the samples on Microlab 300 for serum lipid profile. (Cholestol, HDL, LDL, VLDL and Triglyceride). For the study we use kits made of Merck Pvt. We also did other biochemistry test and hematological test.
Results: The result indicate that all the lipid profile (LDL, Triglyceride) is higher except HDL in women with as compare to normal pregnant women. Total cholesterol (254.5 ± 12.8) mg/dl, LDL (128.9 ± 21.5) mg/dl, and Triglyceride (199.2 ± 32.5) mg/dl, in Preeclampsia are higher as compare to normal pregnant women. While HDL (40.77± 8.5) mg/dl, is decreased in Preeclampsia as compare to normal pregnant women.
Conclusion: The result of this study it is conclude that pregnant women should adopt balanced diet and reduced the lipid profile and reduced their weight and change their life style and adopt healthy life style.
Key Words: Preeclampsia, Lipid profile, normal pregnant

Citation of article: Fatima A, Yousaf A, Khadim S and Asnad. Evaluation of Serum Lipid Profile in Preeclampsia and Healthy Pregnant Women, Mirpur AJK. Med Forum 2020;31(7):68-70.

INTRODUCTION

In pregnancy, Preeclampsia mostly causing complication and also relate with morbidity and mortality of perinatal and maternal.[1] the worldwide percentage of Preeclampsia compilation is 7-10% of pregnancies.[2] The percentage of raised blood pressure is different among the pregnant women 20-25% is exist in chronic hypertension previous history of pregnant women, 10% of primi parous women and 5% of entire pregnancies.[3] pregnancy-induced hypertension (PIH) risk is increasing with increasing age of women.[4] Dyslipidemia is also developing with pregnancy-induced hypertension .[5] For cardiovascular disease, independent risk factors, are endothelial dysfunction and Insulin resistance .[6]

[1.] Department of Obstet and Gynae /Biochemistry[2], Mohtarma Benazir Bhutto Shaheed Medical College, Mirpur, AJK.
[3.] Department of Obstet and Gynae / Pathology[4], Mohd ud din Medical College, Mirpur, AJK.

Correspondence: Dr. Asnad, Associate Professor of Biochemistry, Mohtarma Benazir Bhutto Shaheed Medical College, Mirpur, AJK.
Contact No: 0332-3698204
Email: drasnadkhan@gmail.com

Received: January, 2020
Accepted: April, 2020
Printed: July, 2020

In preeclampsia, it is observed that abnormal lipid profile produced vascular dysfunction and also oxidative stress which caused preeclampsia.[7] There is evidence is present t that increasing the lipid profile which ultimately caused preeclampsia. Especially when triglycerides and LDL (low-density lipoproteins) are increased in oxidized form in women.[8] It is suggested that in pregnancy the estrogen synthesis is higher which increased the synthesis of triglyceride in liver and by hyperinsulinism it is modulated and this process is occurred in pregnancy which ultimately caused endothelial cell damage.[9]In uterine spiral arties, triglyceride and dense LDL particles are accumulate due to more or three to four time more triglycerisdes are synthesis and this caused endothelial cell damage.[10] In this study we evaluate lipid profile preeclampsia patients and compared to normal pregnant women in Mirpur AJK.

MATERIALS AND METHODS

We take for study 200 Preeclampsia patients and 100 health pregnant women. The study was conducted in the department of Obstetrics and gynaecology and Biochemistry Department of Mohtarma Benazir Bhutto Shaheed Medical College Mirpur AJk. We take blood samples from both groups women and analyzed the samples on Microlab 300 for serum lipid profile. (Cholestol, HDL, LDL, VLDL and Triglyceride). For

the study we use kits made of Merck Pvt. We also done other biochemistry test and hematological test.

RESULTS

The result indicates that all the lipid profile (LDL, Triglyceride) is higher except HDL in women with as compare to normal pregnant women. Total cholesterol (254.5 ± 12.8) mg\dl, LDL (128.9 ± 21.5) mg\dl, and Triglyceride (199.2 ± 32.5) mg\dl, in Preeclampsia are higher as compare to normal pregnant women. While HDL (40.77± 8.5) mg\dl, is decreased in Preeclampsia as compare to normal pregnant women. Table 1.

Table No.1: Biochemical profile of Preeclampsia patients and Normal pregnant women

Preeclampsia Patients (n=200)	Normal pregnant women (n=100)
Fasting Blood Glucose(mg/dl)	
97.8 ± 4.3	99.4 ± 4.6
Total Cholesterol (mg/dl)	
254.5 ± 12.8	192.6 ± 31.5
LDL (mg\dl)	
128.9 ± 21.5	114.5± 18.3
HDL (mg\dl)	
40.77± 8.5	57.3 ± 9.1
Triglycerides (mg\dl)	
199.2 ± 32.5	133.3 ± 31.2

DISCUSSION

In the study of Anjum there is high lipid profile in pregnant women as compare to normotensive women and it also observed that HDL is significantly low in pregnant women as compare to normotensive women.[11] We take for study 200 Preeclampsia patients and 100 health pregnant women. The study was conducted in the department of Obstetrics and gynaecology and Biochemistry Department of Mohtarma Benazir Bhutto Shaheed Medical College Mirpur AJk. We take blood samples from both groups women and analyzed the samples on Microlab 300 for serum lipid profile. (Cholestol, HDL, LDL, VLDL and Triglyceride). For the study we use kits made of Merck Pvt. We also done other biochemistry test and hematological test.

In pregnancy, endothelial dysfunction occurred it is due increased synthesis of triglyceride in liver it is conclude by Mikhail et al.[12] In the study of Gohil et al., it is described that HDL is significantly decreases in preeclampsia as compared to non-pregnant while the other profile of lipid (Triglycerides, VLDL and LDL) is increased .[13] In pregnancy, Preeclampsia mostly causing complication and also relate with morbidity and mortality of perinatal and maternal. the worldwide percentage of Preeclampsia compilation is 7-10% of pregnancies.

The percentage of raised blood pressure is differ among the pregnant women 20-25% is exist in chronic hypertension previous history of pregnant women, 10% of primi parous women and 5% of entire pregnancies.

pregnancy-induced hypertension (PIH) risk is increasing with increasing age of women. Dyslipidemia is also developing with pregnancy-induced hypertension. For cardiovascular disease, independent risk factors, are endothelial dysfunction and Insulin resistance. In preeclampsia, it is observed that abnormal lipid profile produced vascular dysfunction and also oxidative stress which caused preeclampsia.[7] There is evidence is present that increasing the lipid profile which ultimately caused preeclampsia. Especially when triglycerides and LDL (low-density lipoproteins) are increased in oxidized form in women. It is suggested that in pregnancy the estrogen synthesis is higher which increased the synthesis of triglyceride in liver and by hyperinsulinism it is modulated and this process is occurred in pregnancy which ultimately caused endothelial cell damage. In uterine spiral arties , triglyceride and dense LDL particles are accumulate due to more or three to four time more triglycerisdes are synthesis and this caused endothelial cell damage. The result indicate that all the lipid profile (LDL, Triglyceride) is higher except HDL in women with as compare to normal pregnant women. Total cholesterol (254.5 ± 12.8) mg\dl, LDL (128.9 ± 21.5) mg\dl, and Triglyceride (199.2 ± 32.5) mg\dl, in Preeclampsia are higher as compare to normal pregnant women. While HDL (40.77± 8.5) mg\dl, is decreased in Preeclampsia as compare to normal pregnant women. In the study of Enquobahrie et al he observed that triglyceride is significantly higher in women with pre-eclampsia.[14] Deshpande H et al during his study he found that from Mild PIH to Severe PIH the lipid profile(cholesterol, LDL, VLDL and triglyceride) is increased and also Severe PIH to Eclampsia lipid profile(cholesterol, LDL, VLDL and triglyceride) is increased and HDL Levels are decreased.[15] The result of this study it is conclude that pregnant women should adopt balanced diet and reduced the lipid profile and reduced their weight and change their life style and adopt healthy life style.

CONCLUSION

The result of this study it is conclude that pregnant women should adopt balanced diet and reduced the lipid profile and reduced their weight and change their life style and adopt healthy life style**.**

Author's Contribution:

Concept & Design of Study:	Aurooj Fatima
Drafting:	Aisha Yousaf
Data Analysis:	Shakila Khadim, Asnad
Revisiting Critically:	Aurooj Fatima, Aisha Yousaf
Final Approval of version:	Aurooj Fatima

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Vanderjagt DJ. HDL and homocysteine levels correlate inversely in preeclamptics women in North Nigeria. Acta Obstet Gynecol Scand 2004;83:536-42.
2. Mutlu-Turkoglu U, Ademoglu E. Imbalance between lipid peroxidation, antioxidant status in preeclampsia. Gynecol Obstet Invest 1998;46: 37-40.
3. Ghosh MK. Maternal mortality: a global perspective. J Reprod Med 2001;46(5):427-33.
4. Zhang J. Partner change, birth interval and risk of pre-eclampsia: a paradoxical triangle. Paediatr Perinat Epidemiol 2007;21:31-5.
5. Belo L, Caslake M, Gaffney D, Santos-Silva A, Pereira-Leite L, Quintanilha A, et al. Changes in LDL size and HDL concentration in normal and preeclamptic pregnancies. Atherosclerosis 2002; 162(2):425-32.
6. Seely EW, Solomon CG. Insulin resistance and its potential role in pregnancy-induced hypertension. J Clin Endocrinol Metab 2003;88(6):2393-8.
7. Kshinakunti SV, Sunitha H, Gurupaddappa K, Manjula R. Lipid Profile in Preeclampsia-Case Control Study. J Clin Diagnostic Res 2010;4: 2748-51.
8. Qiu C, Phung TT, Vadachkoria T. Oxidised low densitylipoprotein and the risk of Preeclampsia. Physiol Res 2005.
9. Isomaa B, Almgren P, Tuomi T, Forsen B, Lahti K, Nissen M, et al. Cardiovascular morbidity and mortality associated with the metabolic syndrome. Diabetes Care 2001;24(4):683-9.
10. Girman CJ, Rhodes T, Mercuri M, Pyorala K, Kjekshus J, Pedersen TR, et al. The metabolic syndrome and risk of major coronary events in the
1. scandinavian simvastatin survival study (4S) and the Air Force/Texas Coronary Atherosclerosis Prevention Study (AFCAPS/TexCAPS). Am J Cardiol 2004;93(2):136-41.
11. Anjum R, Zahra N, Rehman K, Alam R, Parveen A, et al. Comparative analysis of serum lipid profile between normotensive and hypertensive Pakistani pregnant women. J Mol Genet Med 2013;7:64.
12. Mikhail MS, Basu J, Palan PR, Furgiuele J, Romney SL, Anyaegbunam A. Lipid profile in women with preeclampsia: relationship between plasma triglyceride levels and severity of preeclampsia. J Assoc for Academic Minority Physicians: the official publication of the Association for Academic Minority Physicians. 1995;6(1):43-5.
13. Gohil JT, Patel PK, Priyanka G. Lipid profile in patients of preeclampsia. J Obstet Gynecol Ind 2011;61(4):399-403.
14. Enquobahrie DA, Williams MA, Butler CL, Frederick IO, Miller RS, et al. Maternal plasma lipid concentrations in early pregnancy and risk of preeclampsia. Am J Hypertens 2004;17:574-81.
15. De J, Mukhopadhyay A, Saha PK. Study of serum lipid profile in pregnancy induced hypertension. Ind J Clin Biochem 2006;21(2):165.