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ORIGINAL ARTICLE

Serum LDH (Lactate Dehydrogenase) Levels in Normotensive and Preeclamptic-Eclamptic Pregnant Women

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ABSTRACT:

Background: The study was conducted to assess serum LDH levels in normotensive and preeclamptic-eclamptic pregnant women. **Material and methods**: The study involved the division of 100 pregnant women into two groups of 50 each. Group 1 consisted of 50 women with normotension, and group 2 was composed of 50 women with preeclamptic and eclamptic pregnancy. The women were asked for their consent after being told about the surgery. People who were prepared to provide consent and were willing to participate in the study were included, whereas those who were not interested in participating or giving consent were left out. Serum LDH levels in females in both groups were tested. Software called SPSS was used to perform statistical analysis. **Results**: In this study, there were 100 females who had been divided into two groups of 50 each with group 1 involving 50 normotensive pregnant women and group 2 involving 50 preeclamptic-eclamptic pregnant females. Mean serum LDH levels in women of group 1 were301.7 ± 129 IU/L and mean serum LDH levels in women of group 2 were 694.1 ± 348 IU/L. **Conclusion**: The serum LDH concentrations among normotensive pregnant females were far too less in comparison to the serum LDH concentrations of preeclamptic-eclamptic pregnant females.

Keywords: LDH, pre-eclampsia, females, pregnancy.

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INTRODUCTION

Preeclampsia is a pregnancy specific syndrome characterized by new onset hypertension and proteinuria. Despite being one of the leading causes of maternal death and a major contributor of maternal and perinatal morbidity, the mechanisms responsible for the pathogenesis of preeclampsia have not been fully elucidated.[1-6]

Hypertension associated with preeclampsia develops during pregnancy and remits after delivery, implicating the placenta as a central culprit in the pathogenic process. An initiating event in preeclampsia has been postulated to be reduced placental perfusion that leads to widespread dysfunction of the maternal vascular endothelium and hypertension by mechanisms that remain to be defined.[1-6]

Preeclampsia and eclampsia complicate 6–8% of all pregnancies and lead to various maternal and fetal complications. These are multisystem disorders and lead to a lot of cellular death. LDH is an intracellular enzyme and its level is increased in these women due to cellular death. So, serum LDH levels can be used to assess the extent of cellular death and thereby the severity of disease in this group of women. This can be further used as help in making decision, regarding the management strategies to improve the maternal and fetal outcome.[7]

This study was conducted to assess serum LDH levels in normotensive and preeclamptic-eclamptic pregnant women.

MATERIAL AND METHODS

The study involved the division of 100 pregnant women into two groups of 50 each. Group 1 consisted of 50 women with normotension, and group 2 was composed of 50 women with preeclamptic and eclamptic pregnancy. The women were asked for their consent after being told about the surgery. People who were prepared to provide consent and were willing to participate in the study were included, whereas those who were not interested in participating or giving consent were left out. Serum LDH levels in females in both groups were tested. Software called SPSS was used to perform statistical analysis.

RESULTS

Table 1: Group-wise distribution of subjects

Group	Number of women	Percentage
Group 1 (Normotensive pregnant women)	50	50%
Group 2 (Preeclamptic- eclamptic pregnant women)	50	50%
Total	100	100%

In this study, there were 100 females who had been divided into two groups of 50 each with group 1 involving 50 normotensive pregnant women and group 2 involving 50 preeclamptic-eclamptic pregnant females.

Table 2: Serum LDH levels in women of both groups

Groups	Serum LDH levels (IU/L)
Group 1	301.7 ± 129
Group 2	694.1 ± 348

Mean serum LDH levels in women of group 1 were301.7 ± 129 IU/L and mean serum LDH levels in women of group 2 were 694.1 ± 348 IU/L.

DISCUSSION

Preeclampsia is a common complication of pregnancy associated with high maternal and perinatal morbidity and mortality especially in developing countries. There is considerable progress in the understanding of the pathophysiology and the management of the diseases, although the aetiology and primary pathology remained elusive. Integration of current evidence in the clinical management of the condition has witnessed improved maternal and fetal outcomes in many societies. In developing countries variations in management often not based on current evidence accounts for comparatively higher morbidity and mortality.[8]

This study was conducted to assess serum LDH levels in normotensive and preeclamptic-eclamptic pregnant women.

In this study, there were 100 females who had been divided into two groups of 50 each with group 1 involving 50 normotensive pregnant women and group 2 involving 50 preeclamptic-eclamptic pregnant females. Mean serum LDH levels in women of group 1 were301.7 ± 129 IU/L and mean serum LDH levels in women of group 2 were 694.1 ± 348 IU/L.Makkonen M et al (1980).[9] Total serum lactic acid dehydrogenase activity (LDH) and the levels of LDH isoenzymes were investigated in 14 women during early pregnancy (8--16th week), in 28 women during late pregnancy (29--37th week), in 73 at term (38--42nd week) and in 27 during labor (38--42nd week). LDH activity was found to be elevated in severe pre-eclampsia and in chronic hypertensive women during pregnancy as well as during normal and dysfunctional labor. No change was established in total serum LDH during normal pregnancy. LDH 1 was increased during late pregnancy and at term. In severe pre-eclampsia and during normal labor it was decreased. LDH 2 was also decreased in severe pre-eclampsia and during dysfunctional labor. LDH 3 was decreased during late pregnancy but increased in severe pre-eclampsia. No change was observed in LDH 4 during pregnancy, or in labor. LDH 5 was increased in normal and dysfunctional labor.Jaiswar SP et al (2011)[7] correlated the severity of the disease, maternal and perinatal outcome with Lactic Dehydrogenase (LDH) levels in serum in patients of preeclampsia and eclampsia. A prospective comparative study was conducted in the department of Obstetrics and Gynecology in the collaboration with department of Pathology, CSM Medical University, Lucknow. Out of 146 women studied, 39 were normal pregnant women, 35 were of mild preeclampsia, 36 of severe preeclampsia and 36 of eclampsia. The statistical analysis was done by Chi-square test (for proportional data) analysis of variance and sample "t" test (for parametric data). LDH levels were significantly elevated in women with preeclampsia and eclampsia (<0.001). Higher LDH levels had significant correlation with high blood pressure (P < 0.10) as well as poor maternal and perinatal outcome. High serum LDH levels correlate well with the severity of the disease and poor outcomes in patients of preeclampsia and eclampsia.

CONCLUSION

The serum LDH concentrations among normotensive pregnant females were far too less in comparison to the serum LDH concentrations of preeclamptic-eclamptic pregnant females.

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