

ORIGINAL RESEARCH

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

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ABSTRACT

Background: Preeclampsia is a syndrome unique to pregnancy that is typified by proteinuria and hypertension with recent onset. The pathophysiology of preeclampsia remains unclear, while being a substantial contributor to maternal and neonatal morbidity and one of the leading causes of maternal death. This research had been carried out to evaluate serum LDH concentrations in normotensive as well as preeclamptic-eclamptic pregnant females. **Material and methods:** In order to conduct the study, 100 pregnant women were divided into two groups of 50. Fifty women with normotension made up group 1, and fifty with preeclamptic and eclamptic pregnancy made up group 2. After being informed about the surgery, the women were prompted to provide their agreement. Individuals who were willing and able to give consent were added to the study, whereas those who had no interest in taking part or providing consent were excluded. Serum LDH amounts among females in both groups had been tested. Statistical analysis was carried out using software known as SPSS. **Results:** In this research, there were 100 women who had been allocated into two groups of 50 each with group 1 comprising 50 normotensive pregnant females and group 2 comprising 50 preeclamptic-eclamptic pregnant females. Mean serum LDH levels in women of group 1 were 316.8 ± 110 IU/L and mean serum LDH levels in women of group 2 were 548.7 ± 428 IU/L. **Conclusion:** The levels of serum lipase in normotensive pregnant women were much lower than those in preeclamptic and eclamptic pregnant women.

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

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INTRODUCTION

Preeclampsia is a syndrome unique to pregnancy that is typified by proteinuria and hypertension with recent onset. The pathophysiology of preeclampsia remains unclear, while being a substantial contributor to maternal and neonatal morbidity and one of the leading causes of maternal death.¹⁻⁶ The development of preeclampsia-related hypertension throughout pregnancy and its subsequent remission following delivery point to the placenta as a key player in the pathogenic process. Reduced placental perfusion has been suggested as a preeclampsia beginning event, which results in extensive malfunction of the maternal vascular endothelium and hypertension through as-yet-undefined processes.¹⁻⁶

Preeclampsia and eclampsia cause difficulties for both the mother and the fetus in 6–8% of pregnancies. These illnesses affect multiple systems and cause a great deal of cellular death. These ladies have elevated

levels of the intracellular enzyme LDH as a result of cellular death. Therefore, in this group of women, serum LDH levels can be used to gauge the degree of cellular death and, consequently, the severity of the condition. This can also be used to assist in decision-making when it comes to management techniques that will enhance the outcomes for both the mother and the fetus.⁷

This research had been carried out to evaluate serum LDH concentrations in normotensive as well as preeclamptic-eclamptic pregnant females.

MATERIAL AND METHODS

In order to conduct the study, 100 pregnant women were divided into two groups of 50. Fifty women with normotension made up group 1, and fifty with preeclamptic and eclamptic pregnancy made up group 2. After being informed about the surgery, the women were prompted to provide their agreement. Individuals

who were willing and able to give consent were added to the study, whereas those who had no interest in taking part or providing consent were excluded.

Serum LDH amounts among females in both groups had been tested. Statistical analysis was carried out using software known as SPSS.

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 research, there were 100 women who had been allocated into two groups of 50 each with group 1 comprising 50 normotensive pregnant females and group 2 comprising 50 preeclamptic-eclamptic pregnant females.

Table 2: Serum LDH levels in women of both groups

Groups	Serum LDH levels (IU/L)	p-value
Group 1	316.8 ± 110	0.001 (Significant)
Group 2	548.7 ± 428	

Mean serum LDH levels in women of group 1 were 316.8 ± 110 IU/L and mean serum LDH levels in women of group 2 were 548.7 ± 428 IU/L.

DISCUSSION

Preeclampsia is a common pregnancy condition that is linked to high rates of morbidity and mortality in both mothers and perinatals, particularly in underdeveloped nations. While the aetiology and primary pathology are still unknown, there has been significant advancement in our understanding of the pathophysiology and management of illnesses. Many civilizations have had improved maternal and fetal outcomes as a result of the integration of current evidence into the clinical therapy of the condition. Variations in management, frequently not grounded on current knowledge, account for relatively increased morbidity and death in underdeveloped countries.⁸

Preeclampsia is a major cause of maternal and perinatal morbidity and mortality⁴. Preeclampsia virtually affects all maternal organ system including liver, kidneys, brain, clotting system and primarily the placenta.^{9,10}

This research had been carried out to evaluate serum LDH concentrations in normotensive as well as preeclamptic-eclamptic pregnant females.

In this research, there were 100 women who had been allocated into two groups of 50 each with group 1 comprising 50 normotensive pregnant females and group 2 comprising 50 preeclamptic-eclamptic pregnant females. Mean serum LDH levels in women of group 1 were 316.8 ± 110 IU/L and mean serum LDH levels in women of group 2 were 548.7 ± 428 IU/L. Makkonen M et al (1980)¹¹ investigated total serum lactic acid dehydrogenase activity (LDH) and the levels of LDH isoenzymes 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)¹² 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 levels of serum lipase in normotensive pregnant women were much lower than those in preeclamptic and eclamptic pregnant women.

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