Protein C Levels in HIV Infected Women with Pre-Eclampsia in South Africa

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Abstract

Objective: Coagulation system plays a critical role during pregnancy development. Imbalances in the coagulation may lead to adverse effects in maternal and fetal health by leading to a condition such as pre-eclampsia (PE). Additionally, previous research has indicated that HIV-infected women are at a higher risk for developing PE. This study investigated plasma concentration levels of protein C, an anticoagulant in pre-eclamptic women with HIV infection compared to normotensive.

Methods: A total of 54 normotensive and 29 pre-eclamptic women participated in the study, categorized by their HIV status. Demographic information included maternal age, weight, heigh, BMI, gestational age, systolic blood and diastolic blood pressure, and haemoglobin levels. Plasma samples were collected and analyzed using an ELISA kit to quantify Protein C levels. Differences in outcomes were analyzed using the Mann–Whitney U and Kruskal– Wallis test together with Dunn's multiple-comparison post hoc test. The non-parametric data were presented as medians and interquartile ranges.

Results: There was statistically significant difference in the systolic and diastolic blood pressures across the study groups $p < 0.0001$. Protein C levels were slightly elevated in the pre-eclamptic group, no statistically significant differences were found across the study groups $p = 0.2295$.

Conclusion: The findings suggest that although there may be trends in Protein C levels, further research is needed to explore the relationship between coagulation factors, pregnancy complications, and HIV status. This study contributes to the understanding of maternal health, particularly in the context of pre-eclampsia and HIV, highlighting the need for larger sample sizes and additional variables in future investigations to enhance our understanding of the pathophysiology of PE.

Keywords

Anti-coagulation, Human Immune Deficiency Virus, Pre-eclampsia, Protein C.