

Correlations of Complete Blood Count, Liver Enzyme and Serum Uric Acid in Sudanese Pre-Eclamptic Cases

Hind M Beheiry^{1*}, Ibrahim A Ali², Mazin S Abdalla³, Ahmed M Sharif⁴ and Amal M Saeed⁴

¹International University of Africa, Khartoum, Sudan

²The National Ribat University, Khartoum, Sudan

³Napata College, Khartoum, Sudan

⁴University of Khartoum, Khartoum, Sudan.

Published February 05, 2021

ABSTRACT

Background: Pre-eclampsia is a serious disorder of pregnancy with unknown ethological factors that may occur at any stage of second or third trimester of pregnancy. The objectives of this study were to assess changes in complete blood counts including platelets, liver enzymes and serum uric acid in pre-eclamptic cases compared to second-half normal pregnant and non-pregnant Sudanese women and their correlations to other biomarkers.

Methods: A cross-sectional, case-control study performed (December 2008-December 2010); in Omdurman Maternity Hospital, in concomitance with other studies in pre-eclampsia. The participants (231): 72 pre-eclamptic cases, 96 normal pregnant (second-half pregnancy) and 63 non-pregnant (control) women. Questionnaire interviews and clinical examination were done. Laboratory investigations for complete blood picture, liver enzymes and uric acid were performed.

Results: Mean Hb concentration of pre-eclamptic ($11.3 \text{ g/dl} \pm 1.7$) was statistically significantly lower than of non-pregnant ($12.1 \text{ g/dl} \pm 0.2$) ($P=0.01$) but not to normal pregnant ($11.4 \text{ g/dl} \pm 0.1$) ($P = 0.882$). No statistical significant difference was neither between mean WBC count of pre-eclamptic ($7.4 \times 10^3/\text{mm}^3 \pm 0.3$) and non-pregnant ($7.3 \times 10^3/\text{mm}^3 \pm 0.3$) ($P=0.797$) nor between pre-eclamptic and normal pregnant ($7.7 \times 10^3/\text{mm}^3 \pm 0.2$) ($P=0.270$). A considerable statistical significant decrease was between mean platelets count of pre-eclamptic ($236.4/\text{mm}^3 \pm 8.3$) compared to non-pregnant ($322.0/\text{mm}^3 \pm 10.4$) ($P=0.0001$) and to normal pregnant ($275.0/\text{mm}^3 \pm 8.9$) ($P=0.003$). In pre-eclamptic cases, serum ALT correlated significantly with TWCC ($r=0.26$, $P=0.03$) and serum AST ($r=0.65$, $P=0.000$). In pre-eclamptic cases, serum AST correlated significantly with Hb ($r=0.26$, $P=0.03$), serum ALT and serum uric acid ($r=0.36$, $P=0.01$).

Conclusions: A considerable statistical significant decrease in mean platelets count of pre-eclamptic compared to non-pregnant and to normal pregnant may be explained by hemodilution; whereas further decrease was due to pre-eclampsia. ALT and AST are strong prognostic indicators of pre-eclampsia.

Keywords: ALT, AST, CBC, Liver enzymes, Uric acid, Pre-eclampsia

Corresponding author: Hind M Beheiry, Department of Physiology, Faculty of Medicine, International University of Africa, Khartoum, Sudan, E-mail: hindbeheiry@hotmail.com

Citation: Beheiry HM, Ali IA, Abdalla MS, Sharif AM & Saeed AM. (2021) Correlations of Complete Blood Count, Liver Enzyme and Serum Uric Acid in Sudanese Pre-Eclamptic Cases. J Womens Health Safety Res, 5(S1): 05.

Copyright: ©2021 Beheiry HM, Ali IA, Abdalla MS, Sharif AM & Saeed AM. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.