

## Maternal serum cytokines and pregnancy specific beta-1 glycoprotein in normal pregnancies and those complicated by eclampsia in Kaduna state

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**Statement of Problem:** Eclampsia (EC) is the life-threatening occurrence of convulsion(s) in association with hypertension and proteinuria in human pregnancy. It has remained a significant public health threat, contributing to significant maternal and perinatal morbidity and mortality in Nigeria, though the mechanism of the disease is not fully understood and there is no cure, it is widely held that an immunological mechanism is involved. Disturbance of the cytokines equilibrium has been accused for many pathological disorders including EC.

**Subject & Method:** Enzyme linked immunoassay (ELSA) was used to measure levels of pro-inflammatory cytokines (TNF- $\alpha$ , IL -2), anti-inflammatory cytokines (IL-4, IL-10) and PSG-1 in the peripheral blood of patients with eclampsia (EC; n=38), normal healthy pregnant women (PC; n=25) and compared with healthy non pregnant controls (NPC; n=25).

**Findings:** The overall result of TNF- $\alpha$  (2.34  $\pm$  0.13 pg/ml) in EC was significantly higher than the mean values (2.25 $\pm$ 0.07 pg/ml and 2.24 $\pm$ 0.10 pg/ml) in PC and NPC respectively. Furthermore, EC had higher TNF- $\alpha$  mean value compared with NPC (P<0.05). There was no statistical difference in mean IL-2 value between EC (1.69 $\pm$ 0.17 pg/ml), PC (1.71 $\pm$ 0.09 pg/ml) and NPC (1.72 $\pm$ 0.13 pg/ml) (P>0.05). The mean value of IL-10 was lower in EC (1.28 $\pm$ 0.54 pg/ml) compared with PC (1.58 $\pm$ 0.61 pg/ml) and NPC (2.06 $\pm$ 0.08 pg/ml). No significant difference in IL-4 mean value exist between EC (2.45 $\pm$ 0.10 pg/ml) and NPC (2.45 pg/ml) (P>0.05) but significant difference exist between EC and NPC (2.40 $\pm$ 0.06 pg/ml) (P<0.05). The serum PSG-1 levels in EC (2.53 $\pm$ 0.11 pg/ml) and PC (2.56 $\pm$ 0.03 pg/ml) were similar and significantly higher than in NPC (0.06 $\pm$ 0.020 pg/ml) P<0.05.

**Conclusion:** While a pro-inflammatory cytokine environment was demonstrated in EC, and decreased anti-inflammatory reactivity, EC was not as associated with low levels of PSG-1. Further research is advocated to discover how anti-inflammatory cytokines could be exploited as a therapeutic agent for women at high risk of eclampsia.

### Biography

Banda J M has his expertise in Medical Laboratory Science with PhD in Immunology. He believes that quality laboratory results is achievable and can be a veritable tool in improving health and wellbeing of Nigerians. He leads a team (quality team) of Medical Laboratory Scientists and together they have been able to achieve an in-country CDC/Afro Accreditation through the Strengthening of Laboratory Management toward Accreditation (SLMTA) curriculum and WHO Stepwise Laboratory Improvement Process towards Accreditation (SLIPTA) checklist. He has achieved this after years of experience in research, teaching and administration both in hospital and education institutions. He has developed special interest in Maternal Health and believes that through research the high maternal morbidity and mortality rate in Nigeria could be reduced to the barest minimum, especially in the Northern part of Nigeria where there is high level of poverty and poor health-seeking behavior.

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