



Applicant Information

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Abstract Details

Title:

MATERNAL PERIPHERAL AND CORD BLOOD CYTOKINES CONCENTRATIONS IN PREDICITING ADVERSE BIRTH OUTCOMES

Category:

Maternal and child health

Authors:

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Objectives:

Malaria during pregnancy may result in the accumulation of infected red blood cells on placenta surfaces, which induces the influx of immune cells, leading to pathological changes and skews cytokine expression to Th1 and Th2 cytokines. How this leads to poor pregnancy outcomes is still uncertain

Method:

This study examined whether PM can influence the cytokine profile of the neonate and impact infant's birth weight. Cytokines investigated included pro-inflammatory (IFN- γ , IL-1 β and IL-17A), anti-inflammatory (IL-10) and those cytokines with dual properties (IL-6 and IL-21). Peripheral and cord blood samples were taken immediately after delivery from 221 women from the Hohoe Municipal Hospital. Malaria parasitaemia was determined microscopically and by molecular tools (PCR). Haemoglobin (Hb) levels were determined using Sysmex XN330 haematology analyser and plasma cytokine levels were measured by using ELISA.

Results:

Placental malaria parasites detected by PCR were negatively associated with maternal haemoglobin level ($P = 0.002$) and new-born's weight ($P = 0.011$). Cord IFN- γ and IL-1 β concentrations were elevated in infants recording birth weight above the mean (3.2 kg) ($R_c = 0.10$; $P = 0.012$). Also, an increase in cord blood IL10 correlated significantly ($R_c = -0.09$; $p = 0.002$) with a decrease in infant weight and high IL-6 concentrations in maternal samples correlated with Placental and peripheral parasitaemias ($R_c = 0.16$, $P = 0.04$). Increase in maternal IL-21 concentration was associated with higher birth weight ($R_c = 0.28$, $P = 0.002$).

Conclusion:

Maternal IL-21 correlates positively with infant birth weight therefore could be used to monitor high risk pregnancies for proper interventions, and improvement in pregnancy outcomes.

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