

# Cord blood haemoglobin and ferritin concentrations in newborns of anaemic and non-anaemic mothers in Lagos, Nigeria

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## ABSTRACT

**Background:** Pre-delivery haemoglobin and serum ferritin concentrations of anaemic and non-anaemic mothers were determined, and cord blood haemoglobin and serum ferritin concentrations of their newborns were compared. This is to establish the mean values for pre-delivery haemoglobin and serum ferritin concentrations of anaemic and non-anaemic mothers and the cord blood haemoglobin and serum ferritin concentrations of their newborns at term. **Materials and Methods:** A case-control study was done involving 142 pregnant women and their newborns. They were divided into two groups – the anaemic group ( $n = 65$ ) and the non-anaemic ( $n = 77$ ) group. Five millilitres of blood was collected from each woman and 2 ml was collected from the cord of their newborns into ethylenediaminetetraacetic acid (EDTA) bottle and plain bottle for full blood count analysis and ferritin assay, respectively. **Results:** The mean pre-delivery haemoglobin concentrations of the women in anaemic group and non-anaemic group were  $9.5 \pm 1.01$  g/dl and  $12.15 \pm 1.07$  g/dl, respectively, and their mean serum ferritin concentrations were  $64.45 \pm 138.76$  µg/l and  $32.83 \pm 35.36$  µg/l, respectively. The mean cord blood haemoglobin concentrations for anaemic and for non-anaemic groups were  $12.54 \pm 2.54$  g/dl and  $13.44 \pm 2.23$  g/dl ( $P = 0.02$ ), respectively, and the mean cord blood serum ferritin concentrations (non-anaemic,  $69.38 \pm 78.88$  µg/l; anaemic,  $7.26 \pm 115.60$  µg/l) ( $P = 0.00$ ) were higher in the newborns of non-anaemic than of anaemic mothers. Significant association was found between maternal anaemia and cord blood ferritin concentrations ( $P = 0.025$ ). **Conclusion:** Maternal anaemia has significant effects on cord blood haemoglobin and serum ferritin concentrations.

**Key words:** Anaemia, haemoglobin, newborn babies, pregnant women, serum ferritin

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