

## S U M M A R Y

Circulating serum ferritin concentrations were measured in women during pregnancy, in labour and the puerperium in Jamaica. Ferritin was assayed by an Enzyme Linked Immunoabsorbent Assay supplied by New England Immunology Associates. This proved a reliable method. It was able to quantify low concentrations of ferritin found in some of these women.

Three groups of women were studied. 1) A control group of 135 iron supplemented women who were studied longitudinally throughout pregnancy, in labour and 24 - 48 hours post partum. 2) A group of 72 women who were from the lower socioeconomic strata and were not on iron supplementation and received no ante-natal care prior to 32 weeks of gestation. 3) A group of 55 women who had unfavourable outcomes of pregnancies, necessitating admission of their babies to the Nursery.

The trend in ferritin levels seen from the 12<sup>th</sup> week of gestation to term was similar to that seen in other studies, with the lowest ferritin value at term. From pregnancy through to 48 hours post partum, a similar trend was shown in all the women irrespective of the gestational age of the infant.

The unique finding in this study was a three fold increase in ferritin levels from 13  $\mu\text{g/l}$  at term to 39  $\mu\text{g/l}$  at 24 - 48 hours post partum (  $p < 0.001$  ). This increase was evident during labour where a ferritin value of 21  $\mu\text{g/l}$  was obtained.

The ferritin values of the unsupplemented women were compared with the supplemented group during the last trimester of pregnancy. The unsupplemented women had slightly lower values than the supplemented women, but the difference was not significant. In the unsupplemented group 38% of the women had ferritin values of less than 10  $\mu\text{g/l}$ , compared with 18% in the control group. Iron supplementation appears to reduce the fall in ferritin levels.

For the mothers who had abnormal births, the median ferritin value was 48  $\mu\text{g/l}$  in comparison to the control group's median of 43  $\mu\text{g/l}$  ( 24 - 48 hours post partum ). This suggests that ferritin levels were the same irrespective of the outcome of pregnancy. However, the mean maternal ferritin value of the term infants was 52.8  $\mu\text{g/l}$ , whereas the maternal ferritin value of the preterm infants was 32.0  $\mu\text{g/l}$ . This was statistically significant (  $p < 0.05$  ).

The mean ferritin value of the non-pregnant women

was  $27 \mu\text{g}/\text{l}$ , and compared favourably with other studies.

The values ranged from 0 -  $174 \mu\text{g}/\text{l}$ :

Serum ferritin is a useful diagnostic tool to determine iron status in pregnancy. Values of less than  $10 \mu\text{g}/\text{l}$  probably indicate that maternal iron stores are depleted, and that the mother would benefit from iron supplementation. About 45% of the poor Jamaican gravidae who have not had any iron supplementation fulfil this criterion for iron deficiency. Optimum obstetric care and universal iron supplementation could be expected to reduce this prevalence of iron deficiency to about 20%.