

ABSTRACT

Placental composition: Its relationship to maternal and neonatal indices in a sample of Jamaican women.

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The aim of this study is to investigate the placental weight, total placental DNA, protein, glycogen, number of nuclei and fluid content and their relationship to maternal and fetal indices.

Placentas of 118 pregnant women with no systemic or genetic diseases and who delivered live infants were collected. After freezing and homogenization of the placentas, the DNA, protein, glycogen content were determined. Obstetric and fetal antropometric data were recorded.

The mean placental weight for this sample was 532.3g. There was no significant variation in percentage fluid content which was 83%. Total placental DNA, protein, glycogen and number of nuclei content increased with placental weight. There was an association between placental weight and birth weight. Placental weight, placental DNA, protein, glycogen, and number of nuclei were predictors of fetal birth weight. Mother's lowest haemoglobin level was negatively associated with birth weight and placental protein. Weight gain in pregnancy was

shown to be associated with the placental indices measured and with birth weight. This suggests that maternal nutritional status as reflected by the haemoglobin levels and weight gain during pregnancy influences placental composition and fetal outcome.