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Patterns of body composition among HIV-infected, pregnant Malawians and the effects of famine season[1]

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Abstract

We describe change in weight, midupper arm circumference (MUAC), arm muscle area (AMA) and arm fat area (AFA) in 1130 pregnant HIV-infected women with CD4 counts > 200 as part of the BAN Study (www.thebanstudy.org), a randomized, controlled clinical trialto evaluate antiretroviral and nutrition interventions to reducemother-to-child transmission of HIV during breast feeding. In a longitudinal analysis, we found a linear increase in weight with a mean rate of weight gain of 0.27 kgs/wk, from baseline (12 to 30 wks gestation) until the last follow-up visit (32 to 38 wks). Analysis of weight gain showed that 17.1% of the intervals between visits resulted in a weight loss. In unadjusted models, MUAC and AMA increased and AFA declined during late pregnancy. Based on multivariable regression analysis, exposure to the famine season resulted in larger losses in AMA [−0.08, 95%CI: −0.14, −0.02; p=0.01] while AFA losses occurred irrespective of season [−0.55, 95%: −0.95, −0.14, p=0.01]. CD4 was associated with AFA [0.21, 95%CI: 0.01, 0.41, p=.04]. Age was positively associated with MUAC and AMA. Wealth index was positively associated with MUAC, AFA, and weight. While patterns of anthropometric measures among HIV-infected, pregnant women were found to be similar to those reported for uninfected women in sub-Saharan Africa, effects of the famine season among undernourished, Malawian women are of concern. Strategies to optimize nutrition during pregnancy for these women appear warranted.

INTRODUCTION

Maternal body composition and its changes during pregnancy have an impact on women's health and their birth outcomes. The interaction of HIV/AIDS disease progression and nutrition is well established and bi-directional (1,2). In sub-Saharan Africa, studies have established a link between HIV-infection and maternal wasting (mid-upper arm circumference <22cm) in pregnant women (3). However, patterns and predictors of maternal body composition throughout pregnancy among HIV-infected women remain poorly understood, despite the fact that the prevalence of HIV infection exceeds 25% in the worst afflicted countries in sub-Saharan Africa (4).

Among predominantly HIV-uninfected populations, maternal anthropometry is one of the strongest predictors of pregnancy outcome (5–12). In well-nourished pregnant women, subcutaneous fat, as measured by arm fat area, increases during the first part of pregnancy

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and declines in the last trimester as maternal fat stores are mobilized to increase energy supply to the growing fetus. Muscle mass, as measured by arm muscle area, increases during the third trimester and remains elevated through at least 8 weeks postpartum (13–16).

Few studies have examined maternal anthropometry and its predictors during pregnancy in sub-Saharan Africa in the context of HIV/AIDS. Among HIV-infected women in Tanzania, poor anthropometric status at the first prenatal visit and weight loss during pregnancy predicted adverse pregnancy outcomes, however the direction and magnitude of associations were similar to reports from comparable HIV-uninfected populations (17). Another study in Zimbabwe of HIV-infected and HIV-uninfected pregnant women reported no unadjusted differences in anthropometric measurements (18).

In resource-limited countries, exposure to inadequate dietary intake, frequent reproductive cycles, infectious disease, and demanding physical labor may alter women’s body composition dynamics during pregnancy compared to what is seen among women in countries where these stresses are mostly absent (4,19,20,21). The importance of seasonality to reproductive health is emphasized by several studies across Africa. Among predominantly HIV-uninfected populations in Africa, lower gestational weight gain and increased maternal morbidity have been associated with the rainy season which is often characterized by increased food shortage, physical labor, and malarial infection rates (22). Similarly, in The Gambia, a 200–300 g birth weight deficit was seen in the wet season (23).

Because loss of lean body mass has been shown to be a predictor of HIV survival, independent of CD4 count (Suttmann 1995, Ott 1995), it is important to describe the changes in body composition throughout pregnancy and to identify its key determinants in HIV-infected populations (24,25). We analyzed repeated anthropometrics from HIV-1 infected pregnant Malawian women to evaluate two primary objectives: 1) to describe patterns of change in maternal weight, arm muscle area, and arm fat area among HIV-infected pregnant women, and (2) to identify potential seasonal, clinical, and sociodemographic predictors of maternal anthropometrics in this population.

METHODS

Study design and population

The current study included women who consented and met pre-delivery screening criteria between April 2004 and August 2006 for the Breastfeeding, Antiretrovirals, and Nutrition (BAN) Study, a postnatal clinical trial () (26). Briefly, study participants were recruited from four sites with outreach to all pregnant women in Lilongwe, Malawi (27). By August 2006, 1745 women met initial antenatal screening criteria: ≥ 14 years of age, no prior antiretroviral medication use, ≤ 30 weeks gestation, and no serious complications of pregnancy. Of these, 1336 women returned for the second antenatal screening visit approximately one week later and met eligibility criteria based on blood test results: CD4 count ≥ 200 cells/μL, hemoglobin ≥ 7 g/dL, and normal liver function tests (≤ 2.5 times the upper limit of normal). At the second antenatal visit (here to forth referred to as the baseline visit), eligible women completed a baseline interview and physical exam. Of the 1336 eligible women at the baseline visit, 168 were missing a height measurement and 38 were missing another key baseline factor. Therefore, there were 1130 women available for this analysis. We conducted a sensitivity analysis comparing women with complete data to those without (n=206) and found no significant differences in the key study variables at baseline (data not shown). The sample size of 1130 was determined to be sufficient to detect a 1 unit difference in the main outcomes with 90% power (alpha=0.01) (17). The BAN Study protocol was approved by the Malawi National Health Sciences Research Committee and the institutional review boards at the University of North Carolina at Chapel Hill and the U.S. Centers for Disease Control and Prevention (ClinicalTrials.gov identifier NCT00164762).

Key factors

Gestational Age—Gestational ages at baseline and subsequent prenatal visits were derived from the date of last menstrual period (LMP) or, if LMP was unknown, the first available fundal height (FH). Depending upon the estimated gestational age at baseline (range: 12 to 30 weeks), women were asked to return for follow-up prenatal care at approximately 28, 32, and 36 weeks gestation. The average gestational age at each follow-up visit was 29, 33, and 36 weeks, and the number of participants at these visits was 694, 868, and 703, respectively. More than 90% of the sample had at least 2 visits. The average time between visits was 4.5 (Standard Deviation (SD) = 2.8) weeks; the average total time between the baseline and last follow-up visits was 10.4 (SD = 5.1) weeks. The time between the last antenatal visit and delivery ranged from 10 to 0 weeks because in a few cases, the last visit coincided with the delivery date. Our analyses therefore reflect changes during the later stages of pregnancy.

Anthropometrics—Weight, height, mid-upper arm circumference (MUAC) and triceps skinfold thickness were measured at each visit by trained BAN nutrition staff. Weight was measured to the nearest 100g at each visit using a Tanita Digital Scale. MUAC was measured to the nearest 0.1 cm using a nonstretchable insertion tape around the midpoint between the olecranon and acromion process while the arm hung freely at the side. Triceps skinfold thickness was measured in triplicate using Lange Calipers and was derived from the mean of the three measurements. MUAC and triceps skinfold thickness were used to derive arm muscle area (AMA), an indicator of muscle mass, and arm fat area (AFA), an indicator of fat mass: $\mathrm{AMA}=[\mathrm{MUAC} - (\text{triceps skinfold} \times \pi)]^2/4\pi$; $\mathrm{AFA} = (\mathrm{MUAC}^2/4\pi - \mathrm{AMA})$.

Clinical infectious disease—CD4 count was measured cross-sectionally during the first screening visit. None of the women took antenatal antiretrovirals during this or prior pregnancies. In accordance with national guidelines from Malawi’s Ministry of Health on initiation of antiretroviral treatment, these women did not qualify for treatment due to their high CD4 count levels. Additionally, at the time Malawi’s national guidelines on prevention of mother to child transmission of HIV did not include antiretroviral prophylaxis during pregnancy. Data were collected on interim malarial infections but were not available for all participants. Certain clinical factors, such as anemia, were not evaluated as potential predictors because of little variation due to study design. All women received iron and folate supplements, screening for anemia, malaria prophylaxis, and mosquito nets.

Seasonality—Malawi has a subtropical climate characterized by four seasons: cool (May to mid-August), hot (mid-August to November), rainy (November to April), and post-rainy (April to May). Food availability, malnutrition, and infectious disease morbidity vary substantially by season due to cycles of rainfall and agricultural production (28). The famine season, locally referred to as the “Green Famine”, extends from August to March and includes the rainy season prior to the harvest. This time period is marked by limited food availability as stores of the previous year’s crops are depleted and incidence of infectious diseases peaks (29). Exposure to the famine season was measured as the number of days during the month prior to each measurement that were spent in the famine season.

Sociodemographic factors—Basic sociodemographic information was collected during the baseline interview: age, parity, marital status, household characteristics, and the educational level and occupation of both the mother and her partner. A wealth index was derived from household characteristics: house construction (type of walls, floors, and roof), number of rooms and residents, electricity, refrigeration, sanitation, water source and cooking fuel source (30). The different levels of wealth were represented by index quintiles.

Statistical analysis

Since repeated measures were available for most women during pregnancy, we fitted random effects multiple linear regression models for each anthropometric outcome (MUAC, AMA, AFA and maternal weight) using XTREG in STATA version 9.0 (31). The XTREG function fits cross-sectional time-series regression models that account for the correlation among repeated measures on the same individual.

Model specification was guided by studies on nutritional outcomes among pregnant and non-pregnant HIV-infected women. Time-independent factors included maternal height, age, parity, marital status, education, wealth, working status, and CD4 count. Time-varying factors included gestational age and number of days in prior month spent in the famine season. We tested for linearity in the association of each exposure to each anthropometric outcome. Variables with linear associations were introduced into the model as continuous variables, while those with nonlinear associations were categorized. Interaction terms with the main predictors were tested and were retained in the model if significant at $p<0.15$ (32,33).

RESULTS

Baseline characteristics of study population

Most women in this sample were young with low parity (Table 1). The median baseline CD4 count was 439 (Interquartile range: 319 – 592) per 100 cells/μL. Average maternal weight, MUAC, AMA, and AFA at baseline was 58.7 (SD = 8.2) Kg, 26.5 (SD = 2.7) cm, 36.7 (SD = 6.5) cm^2, and 19.7 (SD = 8.1) cm^2, respectively (Table 1).

Crude patterns of anthropometric changes during pregnancy

A crude analysis of weight change over the 2338 intervals between consecutive prenatal visits indicated that 17.3% of intervals showed weight loss. About half of intervals also had a loss in AMA (48.7%) and AFA (53.1%). Of those intervals in which muscle stores were lost, 34.3% lost both muscle and fat stores. The prevalence of wasting (MUAC<22cm) was 1.9%, 3% of women gained no weight, 8.4% showed weight loss, and 59% had low fat stores (AFA < 20 cm^2).

In bivariate linear analysis, maternal weight increased at a rate of 0.24 kg per week. There was no evidence of change in MUAC, while an increase was noted for AMA (0.03 cm^2, 95% CI 0.001, 0.055) and a decline was noted for AFA (−0.05 cm^2, 95% CI: −0.08, −0.03).

Adjusted patterns and predictors for anthropometric changes during pregnancy

In multivariate analysis, weight increased at a rate of 0.27 (95% CI: 0.26, 0.28) kg per week and AFA decreased at a rate of 0.06 (0.09-0.04) cm^2 per week (Table 2). The rate of change in MUAC and AMA during pregnancy was modified by exposure to the famine season. Women with no exposure to famine during the previous month experienced a subtle increase in MUAC (0.004 cm per week) and a significant increase in AMA (0.06 cm^2 per week) (Figures 1–2). In contrast, women who spent the entire preceding month in a famine period had a significant decrease in MUAC (−0.02 cm) and AMA (−0.03 cm^2) per week of gestation. Exposure to the famine season was also associated with decreased weight gain (−0.67 kg, 95% CI: −0.85, −0.49) and loss of AFA (−0.55 cm^2, 95% CI: −0.95, −0.14) per week of pregnancy (Table 2), however there was no significant modification of the pattern for weight or AFA change throughout pregnancy (Figures 3–4). There was no evidence that annual differences had any effect on anthropometric indicators.

CD4 count, as a continuous variable, was directly associated with MUAC, AFA, and weight. Each 100 cells/μL increase in CD4 count was associated with an increase of 0.08 (95% CI: 0.01, 0.15) cm in MUAC, 0.15 (95% CI: −0.01, 0.30) cm^2 in AMA, 0.21 (0.01, 0.41) cm^2 in AFA, and 0.24 (0.03, 0.45) kg in weight.

Key sociodemographic factors were associated with anthropometric changes during pregnancy. Women with a higher wealth index score or who worked for income had increased MUAC and AFA; working, but not wealth among women, had a significant direct positive association with AMA. Women who completed primary education had higher MUAC due to increased AMA than those who completed secondary or higher level education. Age and parity were positively associated with MUAC and AMA, but only age was associated with weight. AFA was unrelated to age and parity.

DISCUSSION

In this relatively healthy, HIV-infected population with high CD4 counts, we observed similar patterns of increased weight and AMA with decreased AFA during late pregnancy as seen in comparable HIV-uninfected populations. However, lower CD4 counts negatively impacted the rate of change for MUAC, AFA, and weight. Furthermore, exposure to periods of famine modified the association between gestational week and MUAC and AMA, so that opposite trends in AMA change were observed in times of famine and non-famine.

The mean rate of weight gain in our population (0.27 kg/wk) was lower than the WHO recommended weight gain during the 4th month of pregnancy (.34 –.46 kg per week) and that reported in studies among presumably HIV-uninfected adult women from the United States and Europe (34). However, the rate of weight gain in our population was similar to or higher than that of presumably mostly HIV-uninfected women from African settings: 0.20 and 0.22 kg/wk in rural Kenyan women (11), 0.20 kg/wk between weeks 14 and 40 in women from rural Tanzania (35), and 0.13 kg/wk between weeks 24 and 33 among rural Malawian women (36). Furthermore, weight gain in our population was comparable to that among a cohort of 957 HIV-infected, pregnant women in Tanzania: 0.25 kg/wk (37). Both the Tanzania study and our study found that low baseline CD4 count impaired the rate of pregnancy weight gain. In our population, each 100 cells/uL increase in CD4 count was associated with a 0.24 kg/week increase in rate of weight gain; in the Tanzania study, the adjusted rate difference between women with CD4 counts ≥500 cells/uL and those with counts <200 cells/uL was 118 g/wk at 18 weeks gestation and 93 g/wk at 37 weeks. Differences in pregnancy weight gain across African settings may be due to differences in study populations or anthropometric assessment over different gestational periods. Over two-thirds of the women in our study had some exposure to the famine season in the month prior to an anthropometric assessment. Exposure to the famine season negatively impacted weight gain in our study which is consistent with a report of highest pregnancy weight gain among Malawian women who deliver in July–September (mean gain 0.25–0.30 kg per week) and lowest gain among those who deliver in January–May (mean gain 0.10–0.20 kg/week) (28).

In our study, participants showed evidence of arm fat loss 0.6 cm^2 over a 10 week period. In contrast, low income, predominantly black U.S. pregnant women, experienced arm fat area loss of 1.26 cm^2 from 28 weeks to the postpartum period (4–6 weeks) (38). While mobilization of fat stores may be beneficial to the fetus, it has detrimental consequences to the mother's health (Hartikainen 2005) if protein and fat stores were insufficient prior to conception or fat stores are overly depleted during pregnancy. In a similar sub-Saharan population, women with low AFA (<20 cm^2) at baseline (22–35 weeks gestation) had higher risk for poor birth outcomes compared to women with higher AFA (4). Over half the women in our study had low AFA and could be at increased risk for poor birth outcomes, irrespective of rate of arm fat loss. Additional burdens, such as low CD4 count and exposure to famine periods, could accentuate the impact of rate of arm fat loss on maternal and fetal outcomes among women with low initial fat sources. As CD4 count declines, HIV-infected individuals begin to lose fat due to an increased metabolic rate to combat the worsening infection, and the release of cytokines (e.g. tumor necrosis factor) increase fat loss, malabsorption and susceptibility to opportunistic infections (39).

The rates of change in MUAC and AMA were modified by exposure to the famine season. Among women not exposed to a famine period, there was a subtle, non-significant increase in MUAC, and a notable, significant increase in AMA, during pregnancy. However, for women who were exposed to a famine period, both MUAC and AMA declined significantly during pregnancy. In well-nourished women, muscle mass, as measured by arm muscle area, increases during the third trimester and remains elevated through at least 8 weeks postpartum (13,14). In a US-based sample of an HIV-uninfected, well nourished, low income, predominantly black population, pregnant women experienced an increase in arm muscle area of 2.00 cm^2 from 28 weeks to the postpartum period (4–6 weeks) (38). A similar trend was seen in marginally nourished, HIV-uninfected, women in The Gambia, where pregnant women showed an increase in lean body mass, although less than a comparison well-nourished European population (40).

For women exposed to the famine season, the declining trend in MUAC is consistent with that among HIV-infected women in Tanzania who lost an average 1 cm (95% CI: 0.8, 1.1) MUAC between 12 and 38 weeks of gestation. AMA loss in HIV-infected women has been associated with greater risk for opportunistic infections, indirectly increasing HIV disease progression and risk of death, as well as potentially increasing risk of perinatal or postpartum HIV transmission (3,41).

Limitations and strengths

With no uninfected comparison group in the BAN Study, we could not do a relative comparison to HIV-uninfected pregnant women. Several studies have already reported the increased risk of poor nutritional status in HIV-infected women compared to uninfected women in U.S. and African populations (1,42–44).

Our sample consists of those who consented, tested positive for HIV/AIDS, and met the primary eligibility criteria. Hence, the focus of this analysis was determinants of nutritional status within HIV-infected pregnant women with high CD4 counts, who received prenatal care. We do not have follow-up data on women with low CD4 or hemoglobin below 7 g/dL since they were considered ineligible for the BAN Study and referred to care; however, in an analysis done on 300 women who did not participate, the descriptive characteristics were similar to our sample (unpublished). A major strength is access to and availability of such a large cohort of HIV-infected women with serial anthropometric measurements during pregnancy. Anthropometric measurements, which assess body composition change rather than only weight gain, were analyzed, and can be used to develop more detailed nutritional requirements for HIV-infected pregnant women. Secondly, this study was conducted on women who received no antiretroviral regimen prior to delivery. Such associations between CD4 count and nutrition will be less likely to be reproduced as antiretroviral medications for pregnant women become more available.

Lastly, we have focused on overall patterns of anthropometric change during pregnancy, ignoring some of the more proximate determinants of nutrition status. For example, we have no direct measure of physical activity which could affect women's nutritional needs, and thus energy balance and body composition through specific physical tasks. We have also not included measures of dietary intake or subsequent birth outcomes. However, we found wealthier women had higher fat mass reflecting their sedentary lifestyle or improved dietary intake. In addition, women with primary education had higher MUAC and AMA than those with secondary education, most likely due to increased physical activity. The association between AMA and maternal work status may reflect ability to work for pay or may be a consequence of weight bearing activities associated with subsistence farming, heavy manual labor and child rearing tasks. In Tanzania, among non-pregnant women, HIV and wasting, as measured by MUAC<22 cm, were strongly modified by socioeconomic status and education. HIV infection and wasting were higher in women with low levels of education and among HIV-infected women who were not able to contribute to the household income (45). In a linear regression model, Villamor et al reported MUAC in women with a secondary level of education was lower than among women with less education, which is consistent with the pattern we found (45). Future studies need to explore and assess the relationship of factors such as wealth, physical activity and dietary intake with maternal nutritional status during pregnancy.

In conclusion, our findings among HIV-infected, pregnant women are similar to those reported for uninfected women in sub-Saharan Africa; however, effects of the famine season among undernourished, HIV-infected Malawian women are of concern. Strategies to optimize nutrition during pregnancy for these women appear warranted.

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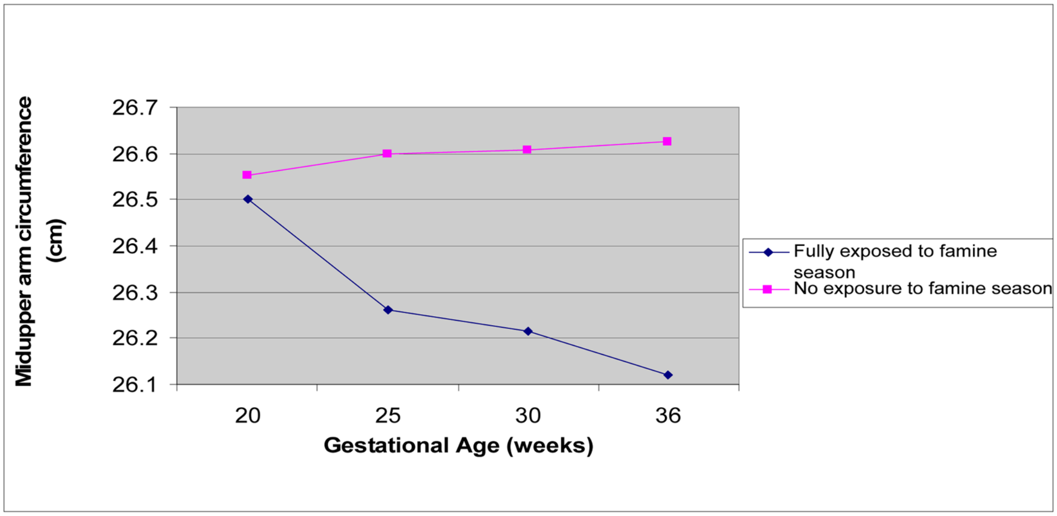

Figure 1. Predicted values of midupper arm circumference in HIV-infected pregnant Malawian women[1]

1 Women who spent entire past 30.5 days in famine season (n=484) are defined as “fully exposed to famine season”; Women who spent no time in the past 30.5 days (n=424) have “no exposure to famine season”

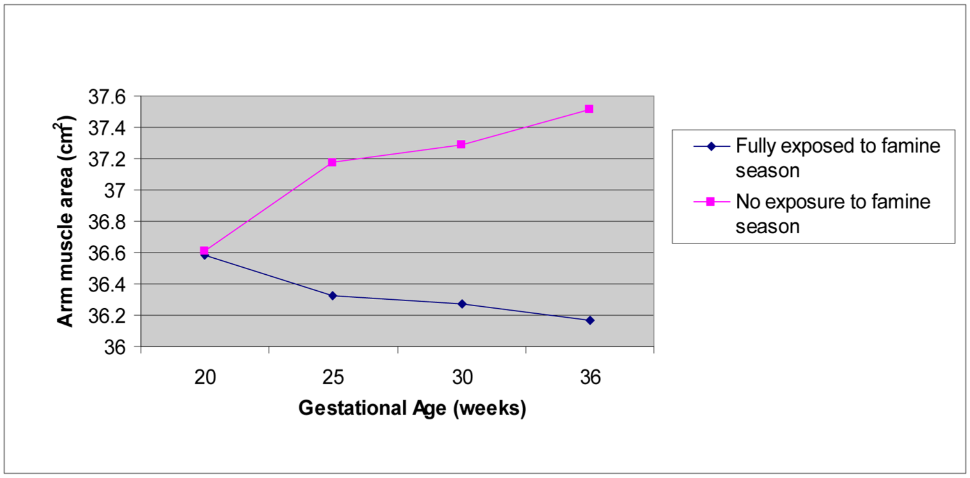

Figure 2. Predicted values of arm muscle area in HIV-infected pregnant Malawian women[1]
1 Women who spent entire past 30.5 days in famine season (n=484) are defined as “fully exposed to famine season”; Women who spent no time in the past 30.5 days (n=424) have “no exposure to famine season”

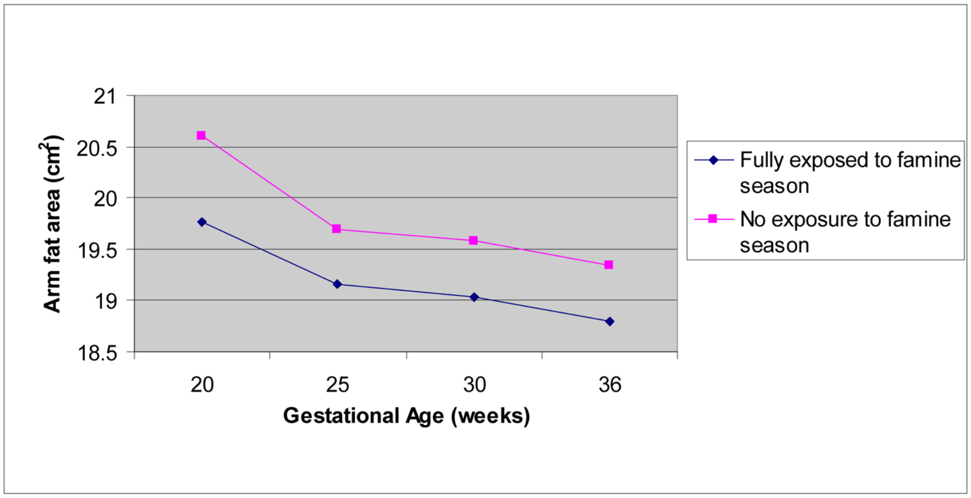

Figure 3. Predicted values of arm fat area in HIV-infected pregnant Malawian women[1]

1 Women who spent entire past 30.5 days in famine season (n=484) are defined as “fully exposed to famine season”; Women who spent no time in the past 30.5 days (n=424) have “no exposure to famine season”

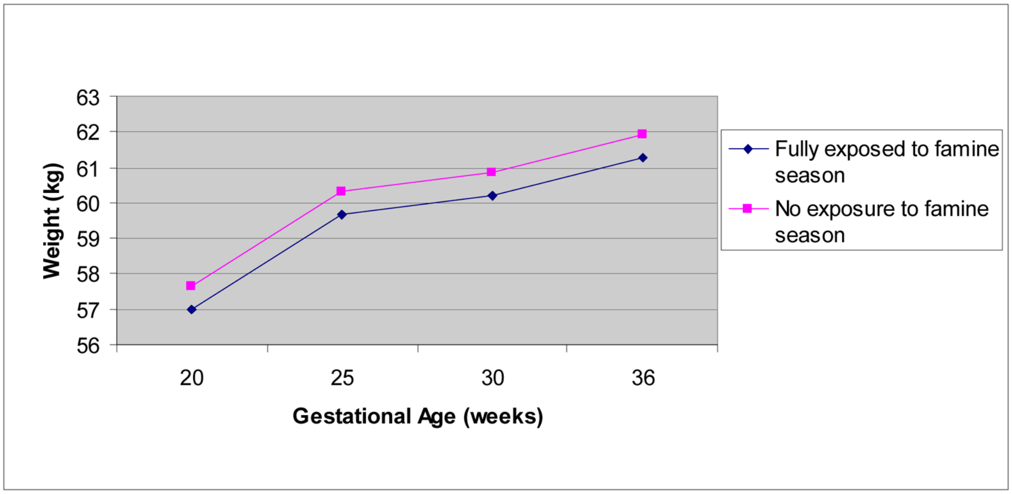

Figure 4. Predicted values of weight for HIV-infected pregnant Malawian women[1]

1 Women who spent entire past 30.5 days in famine season (n=484) are defined as "fully exposed to famine season"; Women who spent no time in the past 30.5 days (n=424) have "no exposure to famine season"

Table 1

Obstetric history, seasonal, socioeconomic, HIV and anthropometric variables of HIV-infected pregnant women in Malawi (n=1130)

Characteristic	**Mean (SD)**
Obstetric history	
Gestation age (weeks)	24.83 (5.1)
Age (y)	25.93 (5.0)
Parity	1.66 (1.4)
Experienced famine season [n (%)]	
None	424 (37.52)
Some	222 (19.65)
All	484 (42.83)
Education [n (%)]	
No school	140(12.39)
Primary	591(52.30)
Secondary or higher	399 (35.31)
Occupation Status [n (%)]	
Mother works	218 (19.29)
Partner works	992 (87.79)
CD4 count (cells/uL) *	439 (IQR:319–592)
Anthropometry	
MUAC (cm)	26.47 (2.7)
AMA (cm^2)	36.69 (6.5)
AFA (cm^2)	19.66 (8.1)
Height (cm)	155.77 (5.5)
Weight (kg)	58.72 (8.2)

* CD4 count displayed as median and interquartile range (IQR).

TABLE 2

Longitudinal predictive models of mid-upper arm circumference, arm muscle area, arm fat area, weight (n=1130)

	MUAC (cms)		AMA (cm^2)		AFA (cm^2)		Weight (kg)	
Independent variable	**B (95% CI)**	**P**	**B (95% CI)**	**P**	**B (95% CI)**	**P**	**B (95% CI)**	**P**
Gestation (wks)	0.004 (−.01,0.01)	0.36	0.06 (0.02, 0.10)	0.01	−0.06 (−0.09, −0.04)	<0.01	0.27 (0.26, 0.28)	<0.01
Famine season (in past month)	0.52 (0.06, 0.98)	0.03	1.61 (−0.29, 3.51)	0.1	−0.55 (−0.95, −0.14)	0.01	−0.67 (−0.85, −0.49)	<0.01
Gestation & Season	−0.03 (−0.04, −0.01)	<0.01	−0.08 (−0.14, −0.02)	0.01				
Cd4 count (per 100 cells/μL)	0.08 (0.01, 0.15)	0.04	0.15 (−.01, 0.30)	0.06	0.21 (.01, 0.41)	0.04	0.24 (0.03, 0.45)	0.03
Wealth Index (quintiles)	0.25 (0.13, 0.36)	<0.01	0.21 (−0.04, 0.46)	0.21	0.91 (0.58, 1.24)	<0.01	0.70 (0.36, 1.04)	<0.01
No Education	0.30 (−0.22, 0.82)	0.26	1.04 (−0.10, 2.17)	0.07	0.19 (−1.31, 1.69)	0.8	−0.27 (−1.82, 1.27)	0.73
Primary education	0.40 (0.05, 0.75)	0.02	1.04 (0.27, 1.80)	<0.01	0.70 (−0.30, 1.71)	0.17	−0.08 (−1.12, 0.97)	0.89
Secondary education	Reference							
Mother works	0.47 (0.08, 0.85)	0.02	0.90 (0.06, 1.73)	0.04	1.18 (0.07, 2.28)	0.04	2.37 (1.27, 3.48)	<0.01
Partner works	0.46 (0.01, 0.91)	0.05	0.64 (−0.34, 1.62)	0.2	1.30 (0.01, 2.59)	0.05	1.53 (0.19, 2.86)	0.03
Height	0.02 (−0.01,0.05)	0.13	0.07 (0.01, 0.13)	0.03	0.03 (−0.05, 0.10)	0.45	0.37 (0.30, 0.43)	<0.01
Age	0.07 (0.02, 0.11)	<0.01	0.18 (0.08, 0.27)	<0.01	0.01 (−0.03, 0.22)	0.13	0.17 (0.04, 0.30)	0.01
Parity	0.22 (0.05, 0.38)	0.01	0.55 (0.18, 0.91)	<0.01	0.43 (−0.05, 0.91)	0.08	0.11 (−0.38, 0.60)	0.66