Abstract

Objectives: A cross sectional study was conducted to observe the impact of maternal nutrition on growth of foetus with an anthropological perspective. The aim of the study was to study the effects of maternal dairy intake on foetus growth measurements including; Head circumference (HC), Biparietal diameter (BPD) Abdomen circumference (AC), Femur length (FL), and also plotting of the different percentiles for male and female foetus.

Study design: In the present study a total sample 156 singleton healthy pregnant women was collected. The frame of sampling was among urban affluent pregnant women who were in third trimester and who availed at least three sonography reports which include of all four growth measurements such as: HC, BPD, AC, FL. Face to face interview method was carried out of the pregnant women population who were visiting the obstetric department of Gupte and Jehangir hospitals in Pune city, Maharashtra state for their monthly check up. During each interview, information was sought concerning the demography of pregnant mothers which comprised; maternal medical history, expectant mother’s social and educational circumstances, caste-religion status, maternal work status, household activities, maternal spouse anthropometric measurements, pre-pregnancy anthropometric measurements and also maternal dietary habits.

Statistical Analysis: Data processing and statistical analysis were performed by using SPSS 11.5. Statistical analysis comparison, descriptive and inference statistic were carried out. The data analysis was performed into two parts. The first part of analysis was conducted to uncover the relationship between independent and dependent variables. This analysis was coincided to the type of data means i.e. Chi –square test, for qualitative variable. Independent sample T- test, multiple linear regression model and one-way ANOVA and Kruskal-wallis test for quantitative
In the present study we assigned the variables into categorical data (qualitative or descriptive) and continuous variable (quantitative).

**Result:** birth weight and length were higher among newborns male than female. However only head circumference at birth was higher among female than male infants. There exists a positive association between maternal saturated oil intake and protein (g/d) with baby’s birth weight and length. Another positive, significant association was noticed between maternal daily fruits (g/d), fat (g/d) and energy (kcal/d) with birth length. Whereas, baby’s head circumference conversely associated with maternal dietary intake. Among these associations, protein intake has the highest positive significance contribution toward birth length and birth weight. While, in the same condition it is slightly associated with birth head circumference. Amongst dairy products, daily milk consumption had direct association to birth weight and also there was a positive contribution between maternal milk intakes toward all of foetal biometric parameters. It shows increasing tendency to growth at 465.17 ml of milk intake/day. Amongst maternal confounders gestational age (week) was found to be a strongest, positive independent predictor of birth weight. Maternal pre-pregnancy weight, weight gain during pregnancy and maternal age influences the birth weight. Furthermore, maternal height predicted the foetal BPD. Maternal milk intake and seafood intake showed positive contribution towards birth weight. Regression analysis shows positive significant and strong contribution towards all the four foetal parameters including; AC, HC, BPD and FL with maternal macronutrients intake during pregnancy.

**Conclusion:** It is concluded that maternal anthropometric measurements and dietary intake were predictors of pregnancy outcomes and foetus growth.