Objectives: To derive the reference range for femur length / foot ratio and foot length norm gram in Indian population.

Methods: This is a prospective, cross sectional study of 345 normal fetuses measured at Paras advanced fetal medicine center, Ahmedabad, India. Statistical analysis has been performed using MS excel 2010. Data analyzed as recommended by Altman, Chitty and Royton. For each measurement, polynomial regression models were fitted separately to estimate the mean and standard deviation (SD) as functions of gestational age. The SD was modeled via the absolute residuals from the regression to estimate the mean. Assuming that at each gestation, the measurements have a normal (Gaussian) distribution, with mean and standard deviation, and that both vary smoothly with gestational age, centile curve is calculated using the formula, Centile = mean + k * SD. Regression equations were derived with polynomial regressions.

Results: The ratio of FL/ Foot is constant at 1 and any less than 0.9 is below 5th centile. Regression equations for mean and SD for FL/Foot ratio and Foot length measurements are shown in table.

Conclusion

It is important to know the FL/Foot ratio for skeletal dysplasia. This ratio is constant throughout gestation and correlate well with all other international fetal biometry. Bony length may vary with different ethnic group but ration of FL/Foot is constant.