Introduction

The antenatal population in India is diverse in its socio-economic background and this reflects in the health facilities that are availed. The middle and upper middleclass use the private health system whereas the economically deprived ones avail the public health hospitals. Our aim was to assess whether a single growth charts used in these two completely different subset of populations to identify small for gestational age (SGA) fetuses was appropriate.

Methodology

Setting: Private Corporate Hospital, and a Government run Municipal Hospital, New Delhi
Population: Women(n=6306) from Urban Corporate and Urban Slum Hospitals with singleton non-anomalous pregnancy with scans between 32.0 to 37+6 weeks. Dating was done by either the first trimester scan or the anomaly scan.
SGA was defined as estimated fetal weight (EFW) at less than the 10th percentile and fetal growth restriction (FGR) at less than the 3rd percentile.

Three charts were compared Yudkin (Hadlock formula for EFW) WHO (Hadlock formula for EFW) and Intergrowth 21st (Intergrowth formula for EFW)
The final birthweight at delivery was obtained and plotted onto a neonatal birthweight chart which we considered as the reference chart for assessing SGA/FGR. The Fentons gender chart was chosen as this was the chart used by the neonatologists at both the study sites.

Predefined adverse outcomes such as intrauterine fetal death after the period of the scan intrapartum stillbirths, neonatal deaths, emergency caesarean section for fetal distress, caesarean section for fetal growth restriction and Neonatal Intensive Care Unit admissions (NICU) beyond 7 days in a baby with low birthweight were noted. These adverse outcomes were chosen as they were the most pragmatic to assess and were unambiguous.
The dataset was reanalysed retrospectively after the WHO Charts and Intergrowth 21st became available in the Urban Corporate group however were analysed prospectively in the Urban Slum group. The results of the latter two were not disclosed to the obstetricians.

Results

A table summarizing the results of the study is not displayed here.

Conclusion

All three charts performed better in the Urban population than the Urban Slum group with not much difference between the Yudkin and IG-21 Charts. However Intergrowth 21st Charts had a better detection rate for FGR in the urban slum group as compared to the others across all gestations and populations (p=0.001).

All Charts had poor prediction for adverse outcomes.