Does the level of amniotic fluid have an effect on the accuracy of sonographic estimated fetal weight at term?

Ashwal E, Hiersch L, Melamed N, Bardin R, Wiznitzer A, Yogev Y
Helen Schneider Hospital for Women, Rabin Medical Center, Petah Tikva, Israel

Objective
Controversy exists concerning the impact of amniotic fluid volume on the accuracy of sonographic estimation of fetal weight (EFW). Thus, we aimed to evaluate whether differences in amniotic fluid index (AFI) has an influence on the accuracy of sonographic EFW.

Methods
A retrospective cohort study. All term (37-41 weeks), singleton pregnancies which underwent an estimation of fetal weight and measurement of AFI within a week from delivery were included. Cases were stratified into 3 categories according to AFI value: 1) Normal AFI (51-249mm), 2) Oligohydramnios (AFI≤50mm) and 3) Polyhydramnios (AFI≥250mm). Inaccurate EFW was defined if there was more than 15% difference between sonographic EFW and actual birthweight.

Results
Overall, 1,746 pregnancies were identified (1,096 with normal AFI, 455 with oligohydramnios and 195 with polyhydramnios). Mean AFI was 115.8±60mm, 28.1±13mm and 293±35mm, p<0.001, and mean sonographic EFW was 3,182.5±573g, 3,118.8±517g and 3,713.2±461g, p<0.001, respectively. Demographic data and gestational age at delivery were similar between the groups. Mean birthweight was 3,221.7±535g, 3,132.5±505g and 3,654.1±480g, p<0.001, respectively. The rate of inaccurate EFW was similar between the groups (8.4%, 8.7% and 9.7%, p=0.19, respectively). On multivariate analysis, AFI was not associated with EFW inaccuracy (OR 1.01, 95% C. I 0.67-1.54, p=0.93).

Conclusion
Amniotic fluid index has limited impact on the percentage of errors in sonographic fetal weight estimation a week prior delivery.