

Discrepancy between ultrasound scan estimated foetal birth weight and real birth weight and the associated factors among newborns delivered in the Teaching Hospital Jaffna

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Background and Objective: The accuracy of ultrasound scan (USS) estimated foetal weight is associated with several factors. The objective of this study was to determine the discrepancy between USS estimated foetal birth weight and real birth weight and the associated factors among newborns delivered in the Teaching Hospital Jaffna.

Methods: This cross-sectional analytical study was carried out from August 2020 to January 2022 among 318 mother and baby pairs delivered within the 37th to 41st week of gestation at Teaching Hospital Jaffna using data extraction from the Bed Head Tickets (BHT) and analyzed using SPSS. The characteristics of participants were summarized using frequency and percentage for categorical variables and mean (SD) or median (IQR) for numerical variables. Statistical significance was assessed at a 95% confidence level.

Results: Coverage of the intended sample size was 100%. Maternal characteristics included gestational diabetes (GDM 11.3%), pregnancy-induced hypertension (PIH 7.5%), hypothyroidism (4.1%), normal vaginal delivery (64.2%) and caesarean section (33%). Numerical characteristics [median (IQR)] included age at registration [29 (25-33)] years, POA at last USS [273 (264-280)] and POA at parturition [274 (265-281)] days. The majority were male babies (55.3%). The mean of the last USS estimated foetal weight was 3012g (SD=428) while mean of birth weight was 2987g (SD=466). The discrepancy between the USS estimated foetal weight and birth weight was symmetrically distributed and the mean was 24.5g (SD=318g, 95% CI=-11 to 60g). Sex of the infant (t=-2, df=316, p=0.046), PIH (t=-3.5, df=316, p=0.001) and GDM (t=2.2, df=316, p=0.03) were associated with the discrepancy. POA when the last USS was taken, POA at parturition and the previous number of parities had positive correlations, while maternal age had a negative correlation.

Conclusions: Mean discrepancy was 24.5g (SD=318g, 95% CI=-11 to 60g). Sex of infant, GDM, and PIH were associated with the discrepancy between USS estimated foetal weight and birth weight. A large sample study could provide a more precise estimate for this population.

Keywords: Ultrasound scan, Pregnancy induced hypertension, Gestational diabetes mellitus, Period of amenorrhoea