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Umbilical Cord Circumference: the dark horse in Fetal Weight Estimation

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Introduction: Fetal Weight Estimation remains a critical aspect of modern day obstetrics for monitoring the growth of fetus in-utero, specially in a high-risk setting. The dilemma in clinical decision making stems from the lack of accurate methods for fetal weight estimation, particularly in low and middle income countries.

Objectives: To compare the diagnostic accuracy of newer methods (Umbilical Cord Thickness) of fetal weight estimation with the conventional methods within limited resources.

Design: Prospective Cohort Study

Methods: A total of 190 consenting women in early or latent phase of labour were roped in for the study, and fetal weight was estimated for each, using three different available techniques, viz. Clinical, Conventional Ultrasound and Newer Method, with the help of Johnson's formula, Dare's formula, Hadlock's formula, and Cord Circumferencem regression equation. Mean Percentage Error (MPE) was calculated for each method and a comparative analysis was done.

Results: The analysis revealed MPE in decreasing order as Dare> Johnson> Cord Circumference > Hadlock. The sensitivity of Cord Circumference method and Hadlock's method was 91.2% and 91.7% respectively. However, both the sensitivity and specificity of Hadlock's method increased drastically when combined with Umbilical Cord method.

Conclusion: Thus, this study advocates the use of Umbilical Cord Circumference for fetal weight estimation, in conjunction with the conventional methods, specially in high-risk areas, to reduce perinatal mortalities and morbidities, relating to, or resulting from inaccurate fetal weight estimation.

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