"ACCURACY OF VARIOUS ULTRASONOGRAPHIC FORMULAE IN PREDICTING FETAL WEIGHT – A ONE YEAR PROSPECTIVE LONGITUDINAL STUDY"

By

REG. NO. B J 0 1 1 5 0 0 1

Dissertation

Submitted to the
KLE University Belagavi, Karnataka

In partial fulfillment
of the requirements for the degree of

MASTER OF SURGERY (M.S.)

In

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

J. N. MEDICAL COLLEGE, NEHRU NAGAR

BELAGAVI-590010

APRIL- 2018

KLE UNIVERSITY, BELAGAVI, KARNATAKA

Endorsement by the HOD, Principal/Head of the Institution

This is to certify that the dissertation entitled "**ACCURACY OF VARIOUS ULTRASONOGRAPHIC FORMULAE IN PREDICTING FETAL WEIGHT – A ONE YEAR PROSPECTIVE LONGITUDINAL STUDY**" is a bonafide research work done by **Reg. no.s** B J 0 1 1 5 0 0 1 .

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LIST OF ABBREVIATIONS USED

USG	-	Ultrasonography
ABW	-	Actual Birth Weight
BPD	-	Biparietal Diameter
HC	-	Head Circumference
AC	-	Abdominal circumference
FL	-	Femur Length
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Cm	-	centimetres
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IUFD	-	Intrauterine Fetal Demise
POG	-	Period of Gestation

"Accuracy of various ultrasonographic formulae in predicting fetal weight – A one year Prospective Longitudinal Study"

Authors: Dr Hiremath Apoorva[1] MBBS, Dr Dalal Anita[2] MD

ABSTRACT

Objective

To assess the accuracy of 4 ultrasonographic formulae (Shepard, Hadlock II, Hadlock III and Hadlock IV) in predicting fetal weight.

Methodology: This one year prospective longitudinal study was conducted at the teaching hospital attached to KLE University's Jawaharlal Nehru Medical College, Belagavi during the period of January 2016- December 2017. A total of 114 pregnant women admitted to the labour room and antenatal ward were enrolled in the study. Ultrasound examination was done by three specifically identified obstetricians and fetal biometry was measured. EFW with the help of fetal biometric parameters were calculated separately for every patient using all the 4 equations. Actual birth weight (ABW) of all the newborns delivered was measured in kilograms.

Result : Karl Pearson's correlation co-efficient was highest with Hadlock IV (r =0.9152).For detection of newborn <2.5 kg, Shepard's formula had the highest sensitivity i.e 91.67%, Hadlock II and Hadlock IV had the highest specificity (95.56%). For detection of newborn >3.5 kg, all the four formulae had the same sensitivity (80.00%) and specificity was highest with Shepard's formula(99.08%)

Conclusion: All the formulae have adequate accuracy for estimating fetal weight, Hadlock IV has the best accuracy. Sensitivity and specificity of each EFW formula changed with different weight ranges.

Keywords: *fetal weight, ultrasonographic formulae*

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Declaration by the candidate

I hereby declare that this dissertation entitled "**ACCURACY OF VARIOUS ULTRASONOGRAPHIC FORMULAE IN PREDICTING FETAL WEIGHT – A ONE YEAR PROSPECTIVE LONGITUDINAL STUDY**" is a bonafide and genuine research work carried out by me, under the guidance of Dr. ANITA DALAL $_{MD,}$ Professor, Department of Obstetrics and Gynecology, J. N. Medical College, Belagavi.

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Certificate by the Guide

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Declaration by the candidate

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ACKNOWLEDGEMENT

Foremost, it is a genuine pleasure to express my deep sense of thanks and gratitude to my guide and teacher, **Dr. Anita Dalal** MD, Professor, Department of Obstetrics and Gynecology, Jawaharlal Nehru Medical College, Belagavi. Her dedication and keen interest above all her overwhelming attitude to help her students had been solely and mainly responsible for completing my dissertation work. Her timely advice, meticulous scrutiny, scholarly advice and scientific approach have helped me to a very great to accomplish this research task. Without her valuable assistance this work would have not been completed.

These few lines can hardly do justice if I try to appraise my gratefulness, admiration and regards for **Dr.M.B.Bellad** MD,FICOG Professor and Head, Department of Obstetrics and Gynaecology, for his exquisite propositions and expert counsel during my course. I am thankful to him for this endeavor and look forward for his guidance.

I express my sincere thanks and gratitude to the ever humble and helpful **Dr V.D.Patil** **MD**, **DCH**, **Registrar**, KLE University and **Dr. (Mrs.) Niranjana S. Mahantshetti** MD, Principal, Jawaharlal Nehru Medical College, for guiding, counseling and correcting me throughout the study period.

I am grateful to **Dr. M.K.Swamy**MD Professor**, Dr. M.C.Metgud**, Professor, **Dr. B.R.Nilgar** Professor, **Dr. Kamal Patil** Professor, **Dr. Hema Dhumale** Professor, for their guidance and help in completion of the thesis.

It also gives me immense pleasure to express my deep sense of gratitude and sincere thanks to **Dr. Yeshita Pujar** Professor, **Dr. Hema Patil** Assistant Professor, **Dr. Shridevi Metgud** Assistant Professor for performing the utrasonography for my study participants without whose help this dissertation would never have be completed.

I would also like to thank **Dr.Namrata Jadhav** Assistant Professor, **Dr. Mahadevi** Assistant Professor, **Dr.Amruta Ahirrao** Assistant Professor, **Dr. Gauri** Assistant Professor, **Dr.Shruti Andola** Assistant Professor, **Dr Shwetha,** Assistant Professor, **Dr.Asmita** Assistant Professor, **Dr Manjunath**, Assistant Professor for their guidance and encouragement during my postgraduate course.

I am ever grateful to **Mr. Ramesh Dhareshwar** M.Sc, Statistician, for helping me in analyzing the data, making me understand the statistical significance of the same and re-inciting in me the spirit of mathematics.

I take this opportunity to thank my greatest assets, my parents **Dr M.G. Hiremath** and **Dr. Subhashini Hiremath**, my grandmother **H.M Sarojamma**, beloved sister **Mrudula Hiremath,** brother **Vrushabh Hiremath,** and my extended family **Mrs. H.M.Soubhagya, Dr. Rashmi**, **Sachin, Vinay, Aryan and Shefali** who are the pillars of my strength and achievements.

I extend my sincere thanks to my friends **Dr.Anup, Dr.Tejaswi, Dr Nidhi, Dr Sagar, Dr.Soumya, Dr.Jahnavi, Dr.Anusha, Dr.Arpitha, Dr.Jay, Dr.Pooja, Dr.Surbhi, Dr.Madhushree, Dr Preeti, Dr. Vismaya, Dr. Divya, Dr.Archana, Dr.Komal** and my **Post-graduate colleagues in OBG,** who helped me in all possible ways in preparing this dissertation. Last but not the least my heartfelt thanks to all the

patients who participated in this study and co-operated whole heartedly.

I thank the Almighty and my Parents.

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INTRODUCTION

A great hallmark in obstetric history began in the second half of the 20th century with the ability to image the pregnant uterus and its contents. Beginning with sonographic imaging and continuing through computed tomography and magnetic resonance imaging, obstetric practice was revolutionized[1].

From its inception, ultrasound estimation of fetal weight has been presumed to be more accurate than clinical methods[1]. The fundamental underlying presumption is that the sonographic measurements of multiple linear and planar dimensions of the fetus provide sufficient information to allow for accurate algorithmic reconstruction of the three-dimensional fetal volume of varying tissue density[2].

Sonographic assessment in many circumstances is no more accurate than clinical palpation in assessing fetal weight[3, 4, 5]. Both clinical palpation and ultrasound assessment of fetal weight are least accurate at the extremes of birth weight[6]. The inherent inaccuracy of two-dimensional fetal weight assessment could be due to many variables, many of which are beyond our control, such as difficulties in obtaining accurate measurements of fetal parts due to maternal obesity, anterior placenta and oligohydramnios.

The fetus has an inherent growth potential which under normal circumstances, yields a healthy newborn of appropriate size[7]. Assessment of fetal weight is a vital and universal part of obstetric care, not only for intrapartum management but also for the management of high risk pregnancies and monitoring of fetal growth[8].

Birth weight is the most important determinant of newborn survival [9, 10] . Both LBW and macrosomia are associated with an increased risk of complications during labor and in the neonatal period[10.]

The high perinatal morbidity and mortality associated with LBW are attributable to either prematurity or Intrauterine Growth Restriction (IUGR) and sometimes both. Similarly the high perinatal morbidity and mortality, maternal morbidity and rarely mortality associated with excessively large fetuses are attributable to shoulder dystocia, brachial plexus injury, fractures, and intrapartum asphyxia, birth canal and pelvic floor injuries , increased rate of operative vaginal , caesarean deliveries and postpartum hemorrhage (both traumatic and atonic)[8].

In preterm deliveries and IUGR, perinatal counseling on the likelihood of neonatal survival, the interventions taken to postpone delivery, optimal route of delivery or the level of healthcare where the delivery should occur is based on the Estimated Fetal Weight (EFW). Similarly management of diabetic pregnancy, Vaginal Birth After Caesarean section (VBAC) and breech presentation are guided by the estimated EFW[11].

Several studies have compared the accuracy of clinical and ultrasound methods of fetal weight estimation[12-15].Unfortunately, none of these studies conclusively stated that a particular method of fetal weight estimation is totally better than the other in predicting the Actual Birth Weight (ABW) in the various categories of birth weights and the studies appeared to show some geographical variations. Often either ultrasound method or clinical method was found to be better in predicting the ABW in one or two categories of birth weights, but rarely in all the three categories[13].

There are over 20 EFW formulae on current ultrasound systems with most of these formulae being over 25 years old. Even the best models may over or underestimate fetal weight by as much as 15 percent (American Institute of Ultrasound in Medicine, 2013a)[1]

The accuracy of various ultrasonographic methods of fetal weight estimation is dependent on the ultrasonographic equations[2]. These formulae make use of fetal biometric parameters like biparietal diameter (BPD), head circumference (HC), abdominal circumference (AC) and femur length (FL). It is clinically important to assess the various equations as there is no single equation that has been proved to be the best or most accurate for fetal weight prediction in all circumstances[2]. Since these equations have not been assessed in the population under study, clinical decisions based on such sonographic weight estimation could be misleading.

This study is therefore aimed at assessing the accuracy of four ultrasonographic equations used for fetal weight estimation.

AIMS AND OBJECTIVES

The aims and objectives of the present study were:

To assess the accuracy of four ultrasonographic formulae (Shepard, Hadlock II, Hadlock III and Hadlock IV) in predicting fetal weight.

REVIEW OF LITERATURE

BACKGROUND

The different methods for predicting fetal weight in modern obstetrics are:

(a) clinical - based on abdominal palpation of fetal parts and calculating fundal height

(b) sonographic – measuring fetal biometry[16-18]

Tactile assessment of fetal size: Dare *et al.* first used this technique[19].Manual assessment of fetal size is done by external palpation of the uterus and fetal parts. This method is convenient and virtually costless. However, it is a subjective method, hence has significant predictive errors. It is both patient- and clinician-dependent. It is less accurate for obese pregnant women compared to non-obese and there is significant inter-observer variation in predicting fetal weight even among experienced clinicians[20]

Birth-weight prediction equations: These formulae are based on measuring the uterine fundal height above the symphysis pubis and abdominal girth at the level of the umbilicus.

- Ojwang *et al.* – SFH x AG measurement at various levels in centimetres above the symphysis pubis to obtain a fairly acceptable predictive value of EFW but with considerable variation from the mean[21].
- Dare *et al in* 1988 – SFH (cm) x AG (cm) = EFW in grams[19].
- Johnson's formula: Fetal weight (g) = SFH (cm) - n x 155

  n=12 if vertex is above the level of ischial spine or 11 if vertex is below ischial spine.

Obstetric ultrasonography: A method of assessing fetal weight which involves the use of fetal biometry obtained by ultrasonography[22], [23]. The advantage of this technique is that it relies on linear and/or planar measurement of in-utero fetal dimensions that are definable objectively and reproducible[24]. Sonographic predictions are based on algorithms using various combinations of fetal parameters such as Abdominal Circumference (AC), Femur length (FL), Biparietal Diameter (BPD), and Head Circumference (HC) both singly and in combination.

Obstetric sonographic assessment of fetal weight has been integrated into the main stream of obstetric practice during the past quarter century. The above modern algorithms are generally comparable in terms of overall accuracy in predicting birth weight. When other sonographic fetal measurements are used for estimating fetal weight, e.g. humeral soft tissue thickness, ratio of subcutaneous tissue to femoral length, cheek-to-cheek distance, these non-standard measurements do not significantly improve the ability of obstetric sonography to help predict birth-weight, except in special patients subgroup, e.g. mothers with diabetes [25]. The notion that multiple fetal biometric evaluation might prove superior to a single examination has also been assessed and has not been found to be helpful [26, 27.] Ultrasonographic method of estimating fetal weight also has many technical limitations like maternal obesity, oligohydramnios and anterior placentation. Other disadvantages of ultrasonography are that it is both complicated and labor intensive, potentially being limited by suboptimal visualization of fetal structure. It also requires costly sonographic equipment and specially trained personnel[26].

Studies have shown that 80-85% of clinical estimations were between ±500 grams of the actual birth weight (ABW) and 69% were between ± 10%. However, the use of clinical methods has decreased with the increased use of ultrasonography for

fetal weight estimation in recent years[28, 29]. Studies have shown that the mean absolute percentage error of ultrasonographic estimations generally range between 6% and 12%, and the estimation rate of actual birth weight, which was ±10%, was between 40% and 80%.There is a choice of over 20 EFW formulae on ultrasound systems with most of these formulae being over 25 years old. The Altman group[30] advised the use of the EFW formula with lowest random error (standard deviation) across the weight ranges but literature reviews[31] have shown this to be difficult as the formulae best suited in identifying fetuses of <1000 g[32] are not the most suitable for predicting a macrosomic baby. The Hadlock group[33-35] developed seven regression models using different combinations of fetal parameters and found the mean deviation from actual birth weight to be as low as 0.3 to 0.4% for all of their formulae but the standard deviations varied with the AC/HC formula being the least accurate (9.1%) compared with the AC/FL at ± 8.2%, BPD/AC/FL at ± 7.7%, HC/AC/FL at ± 7.6% and BPD/HC/AC/FL with a ± 7.5% standard deviation. When divided into weight ranges the accuracy of each formula within each group changed and this led Hadlock to advocate the use of the HC/AC/FL formula. The accepted accuracy, or margin of error between EFW and ABW is ± 15%[36].

The accuracy of any ultrasonic fetal weight formula is dependent on its 95% confidence limit. Hadlock HC/AC/FL formula where the 95% confidence limit is ± 15%, so it is expected that 95% of ABW will be within ± 15% of the predicted birth weight. It has been claimed that the more parameters included in the weight formula, the more accurate they are but this is influenced by the accuracy of the measurements of the various parameters used in the equation. Another error factor was the reliance of a digital map measurer to trace the circumference from a polaroid image similar to the method used by other early researchers such as the Hadlock, Deter and Shepard

groups[33,37,38]. The 95% confidence limit of ± 22%, which is too great for clinical use as compared with the other Hadlock group formulae of head and abdomen, resulting in ± 18%, abdomen and femur ± 16% and head, abdomen and femur with a ± 15% confidence limit. Most fetal weight formulae are based on the presumption of normal fetal growth and do not take into consideration the factors attributing to either a growth restricted or macrosomic (> 4000 g) fetus. This led many authors to question the accuracy of fetal weight estimations, particularly for prediction of macrosomia[39]. The differing abdominal circumference of a normal fetus and the one affected by gestational diabetes is a prime example where it is claimed there is a distinction between weight prediction in diabetic and non diabetic pregnancies with the difference in the 95% confidence limit for formulas that utilize head, abdomen and femur being ± 24% for diabetic compared with ± 15% in normal pregnancies.

No one formula has been recommended for use across the entire gestation / birth weight range due to the lack of clinical evidence about their accuracy[40]. Analyzing the possible reasoning for this, it would appear that obtaining the correct imaging plane for measuring the various fetal parameters used in the EFW formula is one of the main problems. These fetal parameter measurements may have an impact on the pregnancy outcome, hence it is essential that they be performed in a consistent and reproducible way[41]. The variations seen in fetal weight estimations on the same fetus could be either due to intra or inter observer error[42.] Studies have analyzed inter/intra observer variations in fetal biometry which highlight the importance of accuracy and reproducibility[43, 44]. AC has been described by many authors as the most difficult of all the fetal parameters, especially in the third trimester, as it is the measurement most likely to be inaccurate and yet is one of the most essential for inclusion in a fetal weight formula[41, 45, 46.] From 30 weeks gestation the AC

expands from 262 mm by around 10 mm per week to be 362 mm at 40 weeks and so if suspecting either growth restriction or macrosomia.

A retrospective study by Parry et al showed a 42% false positive rate for predicting macrosomia and only 24% of pregnancies were correctly identified as being non-macrosomic[47].

Another retrospective study by Rouse and Owen showed that ultrasound of 100 pregnancies identified 16 macrosomic fetuses of which only seven were actually greater than 4000 g at birth[48].

A longitudinal study conducted on selected Nigerian obstetric population at Central Hospital, Kwale from March 2009 - January 2011. Sonography was performed on 412 women with advanced singleton pregnancy and measurements of BPD, HC, AC, and FL were obtained and figured into 12 common ultrasound equations for the estimation of fetal weight. The highest intra-class correlation coefficient was generated by the Hadlock 5 and Hsieh 2 equations. The least mean absolute percentage error was obtained with Hsieh 2 equation, followed by Woo 3, and Hadlock 5. All twelve equations had strong positive correlation with the ABW with Nzeh 2 equation the least. They concluded that Hsieh 2 equation has the best accuracy in fetal weight estimation[49].

A prospective study conducted in Delhi in 2013 on 46 pregnant women who had completed 35 weeks of gestation were prospectively enrolled. They measured HC, AC, and FL. Shepard, Campbell and the Hadlock formulae were then applied and EFW was calculated. Campbell and Hadlock formulae tended to overestimate the fetal weight more than the Shepard's formula. 83% of the estimated fetal weights were within 20% of the ABW by the Shepard formula. The correlation coefficient was also

highest with the Shepard's formula (0.7) [0.6 for Campbell and 0.5 for Hadlock's formula]. They concluded that Shepard's formula appeared to be the most accurate formula to estimate fetal weight by ultrasound in the Indian population[50].

A study conducted in Australia in 2012 for the estimation of fetal weight. EFW of 121 pregnancies were assessed within 7 days of birth by measuring the BPD, OFD, HC, AC, FL and comparing them with ABW. They concluded that inter observer error was 1.3% to 3.1% and intra-observer error was 1.1 to 1.9%. Accuracy of each EFW formula changed with different age weight ranges. Among all formulae the highest error occurred in the macrosomic group and lowest random error was with Hadlock III formula (HC/AC/FL) [51].

A descriptive cross-sectional study was conducted at Sri Jayawardene Hospital, Sri Lanka from October to December 2007 in which six commonly used formulae were assessed for calculation of EFW in 86 singleton pregnancies. The highest positive correlation between the ABW and the EFW was seen in the Hadlock IV (r =0.836). For fetuses less than 2.5kg Hadlock IV has the highest sensitivity (75%).All the equations had high specificity which ranged from 93.6 to 100%. In fetuses more than 3.5kg the Shepard formula had the highest sensitivity (90%).The specificity was highest (97.4%) with Hadlock IV formula. Even though Hadlock IV formula was the best formula identified in this study to predict babies less than 2.5 kg out of whole population, it was not the best for prediction of a baby larger than 3.5kg (Hadlock IV sensitivity 40%) compared to Hadlock I (sensitivity 80% and specificity 89.5%) which is the best formula to predict a baby more than 3.5 kg. They concluded that all formulae had adequate accuracy for estimating fetal weight in the population tested, but highest positive correlation between ABW and the EFW was seen with Hadlock IV (BPD/AC/HC/FL) [52].

A prospective study conducted in Nigeria in 2008 concluded that the first formula derived by Nzeh et al, had the least error if the scan delivery interval was within 7days and the second formula had the least error for patients with scan delivery interval of 8~14days[53].

A study conducted at UAE University in 2005, compared eight sonographic formulae for the prediction of fetal weight concluded that Shepard's formula was simple and accurate in predicting fetal weight at term in the studied multiethnic population[54].

METHODOLOGY

Study area

The present study was conducted in the teaching hospital attached to KLE University's Jawaharlal Nehru Medical College, Belagavi.

Study design

The study design was a Prospective Longitudinal Study.

Study period

This study was conducted from January 2016- December 2017.

Source of data

Pregnant women who presented to the Outpatient Department and the inpatients admitted in the antenatal ward and labor room of the Department of Obstetrics and Gynecology at KLE's Dr.Prabhakar Kore Charitable Hospital & MRC, Belagavi who fulfilled the inclusion criteria were enrolled in the study.

Sample size

n =89

Sampling technique

The minimum sample size formula based on mean and standard deviation is

$$n = \frac{(z_\alpha + z_\beta)^2 (s_1^2 + s_2^2)}{(\bar{X}_1 - \bar{X}_2)^2}$$

where z_α is linked with the level of significance

$z_\beta$is linked with the power of the test.

For 5% level of the significancez_α =1.96

z_β =0.84 for 80% power of the test.

$\bar{x}_1$is the mean of the first group (2.98)

$\bar{x}_2$ is the mean of the second group (2.17).

s_1 is the standard deviation of the first group (0.52)

s_2 is the standard deviation of the second group (0.48).

Using the above values the sample size is computed as 89.

Selection criteria

Inclusion Criteria:

Singleton pregnancy (28-42weeks) who were likely to deliver in the next one week.

Exclusion Criteria:

1. Multiple pregnancies.
2. Congenital anomalies.
3. Delivery after 7 days of Ultrasonography (Growth Scan).
4. Intra-Uterine Fetal Demise.
5. Oligoamnios.
6. Patients in labour.
7. Obesity (weight more than 90 kg).

Ethical clearance

Ethical clearance was obtained from the Institutional Ethical committee, Jawaharlal Nehru Medical College, Belagavi, prior to the commencement of the study. (Annexure I).

Informed Consent

All pregnant women in the OPD, antenatal ward and labor room were screened for eligibility by detailed history, routine antenatal examination and investigations by the investigator. Those fulfilling the selection criteria were explained about the purpose of the study. A written informed consent was obtained in their vernacular language from all the participants before the enrollment (Annexure I). The investigator obtained a signature or left hand thumb impression from the consented participants.

Method of collection of data

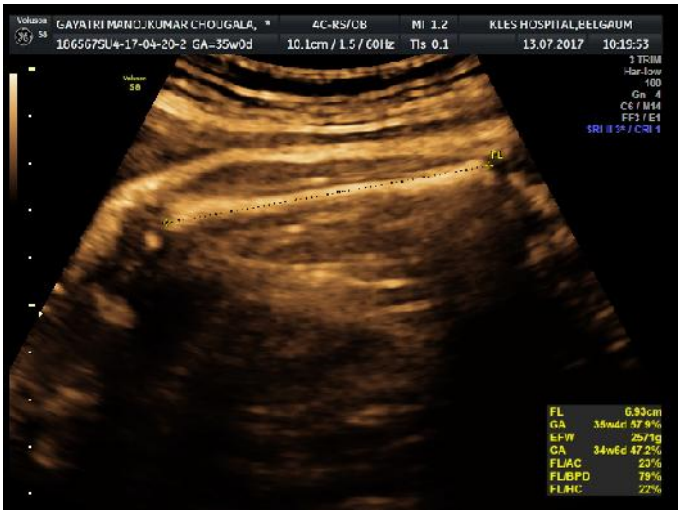
- A data collection instrument was designed which had information regarding demography, obstetric history, previous ultrasonography reports, and the present ultrasound findings, details of the baby- sex, birth weight time, mode of delivery.

- Ultrasound examination was done by three specifically identified obstetricians who were trained in ultrasonography, with the help of Voluson S8 machine.

- Ultrasound examination included the measurement of fetal biometry: Biparietal diameter (BPD), Head circumference (HC), Abdominal circumference (AC) and Femur length (FL), Amniotic Fluid Index (AFI) and position of the placenta.

Biparietal Diameter and Head Circumference

Abdominal Circumference



Femur Length

- EFW with the help of fetal biometric parameters were calculated separately for every patient using all the 4 equations.

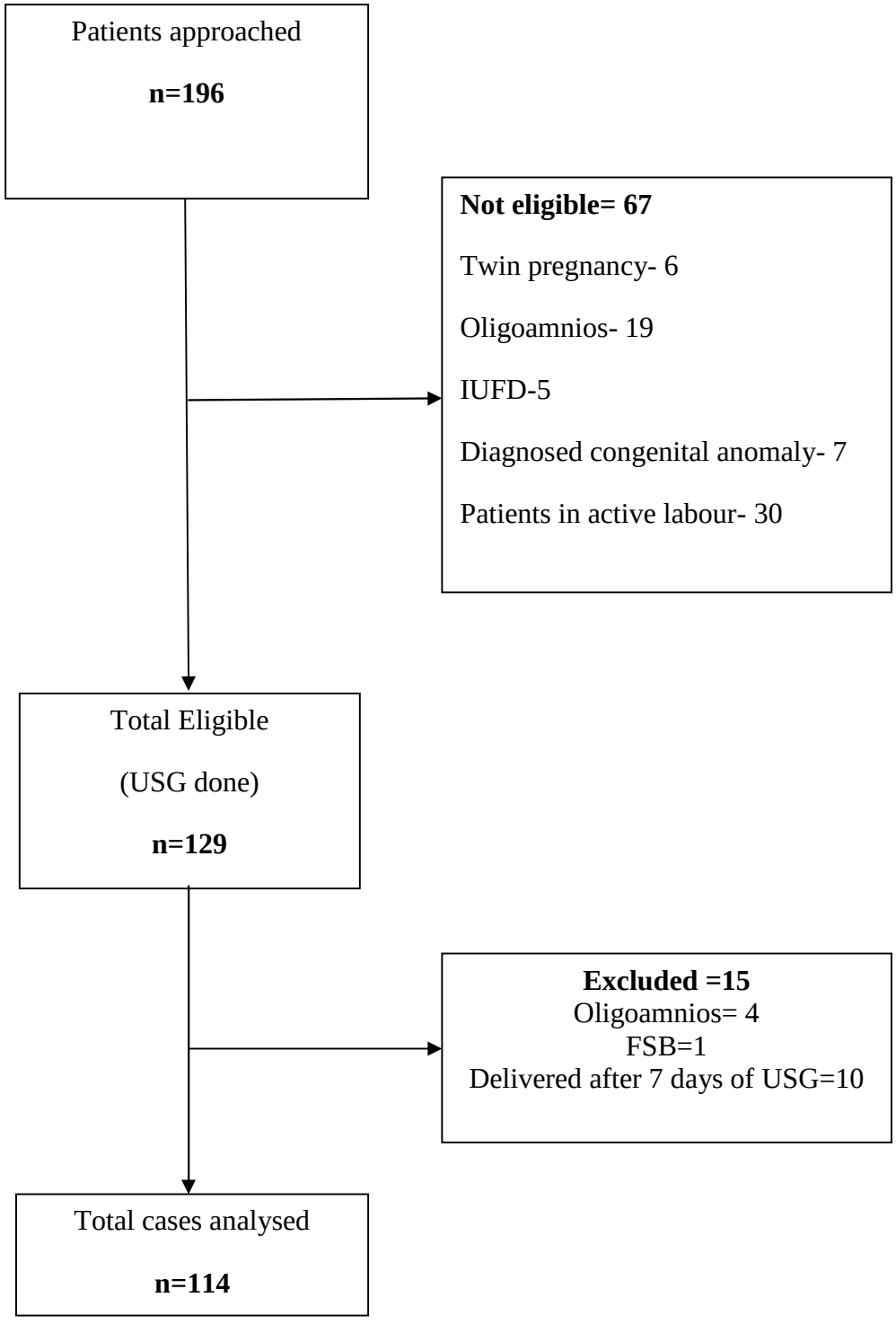
- Formulae used to calculate estimated fetal weight in the present study were:

Shepard	Log_{10} BW = -1.792 +0.166 x BPD+0.046 x AC-0.002646 x AC x BPD
Hadlock II	Log10 BW= 1.335- (0.0034 x AC x FL)+ (0.0316 x BPD)+(0.0457 x AC)+ (0.01623 x FL)
Hadlock III	Log_{10} BW=1.326 – 0.00326 x AC x FL+ 0.017 x HC +0.0457 x AC+ 0.158 x FL
Hadlock IV	Log_{10} BW= 1.3596+0.00386 x AC x FL+ 0.0064 x HC + 0.00061 x BPD x AC + 0.0424 x AC + 0.0174 x FL+0.0424 x AC

- Patients were followed till delivery. Those patients who delivered after 7 days of the ultrasonography were excluded from the study.

- Actual birth weight (ABW) of all the newborns delivered was measured in kilograms using a properly calibrated digital weighing machine in the labour room.

- EFW calculated with the 4 equations was separately compared with the ABW and accuracy of each equation in predicting the birth weight was calculated.


Patients approached
n=196
Not eligible= 67
Twin pregnancy- 6
Oligoamnios- 19
IUFD-5
Diagnosed congenital anomaly- 7
Patients in active labour- 30
Total Eligible
(USG done)
n=129
Excluded =15
Oligoamnios= 4
FSB=1
Delivered after 7 days of USG=10
Total cases analysed
n=114

Statistical analysis

- The data obtained was coded and entered into Microsoft Excel Worksheet 2013
- Data was analysed using MedCal version 9.1 software.
- Demographic characteristics like age, parity, gestational age at delivery and birth weight categories were expressed in percentage.
- Formulae were compared using Karl Pearson's correlation co-efficient.
- Sensitivity, specificity, positive predictive value and negative predictive value were calculated and results were obtained.

RESULTS

This one year Prospective Observational Study was conducted hospital attached to KLE University's Jawaharlal Nehru Medical College, Belagavi, during the period January 2016-December 2017

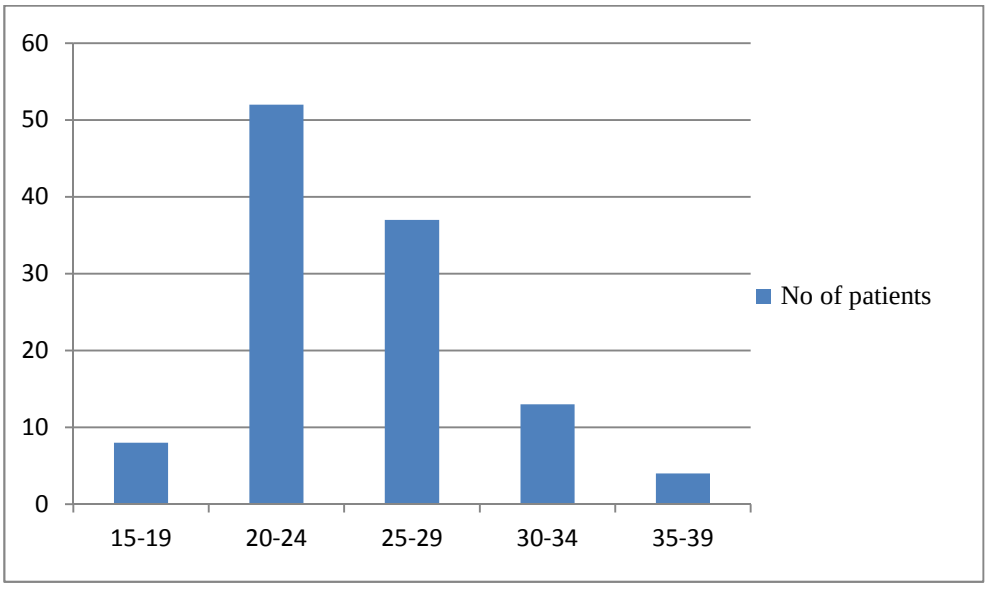
A total of 114 pregnant women were included in the present study..

- The data obtained was coded and entered into Microsoft Excel Worksheet 2013
- Data was analysed using MedCal version 9.1 software and results were tabulated as below.

Table 1: Maternal Age distribution

Age group (Years)	Number	Percentage
15-19	08	7.02%
20-24	52	45.61%
25-29	37	32.46%
30-34	13	11.40%
35-39	04	3.51%
Total	**114**	**100.00**

Graph 1: Maternal Age distribution

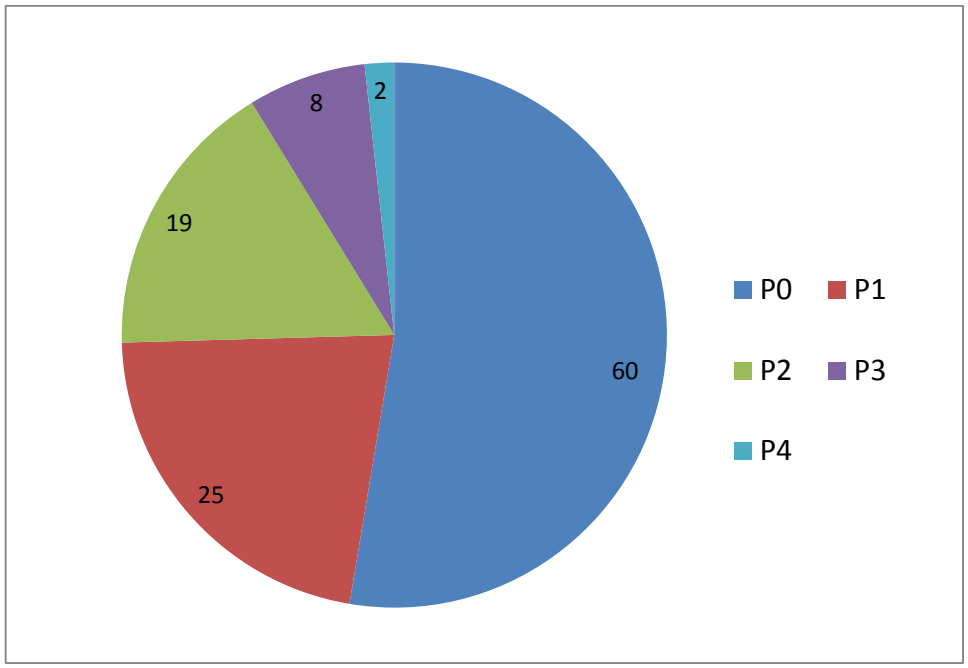


In the present study, 52 pregnant women (45.61%) were aged between 20 to 24 years, 37 women (32.46%) were aged between 25-29 years, 13 women were aged between 30-34 years and 8 women (7.02%) were in the age group of 15-19 and 4 women (3.51%) were aged between 35-39 years.

Table 2: Parity Distribution

Parity	Number	Percentage
0	60	52.63%
1	25	21.93%
2	19	16.67%
3	08	7.02%
4	02	1.75%
Total	**114**	**100.00**

Graph 2: Parity Distribution

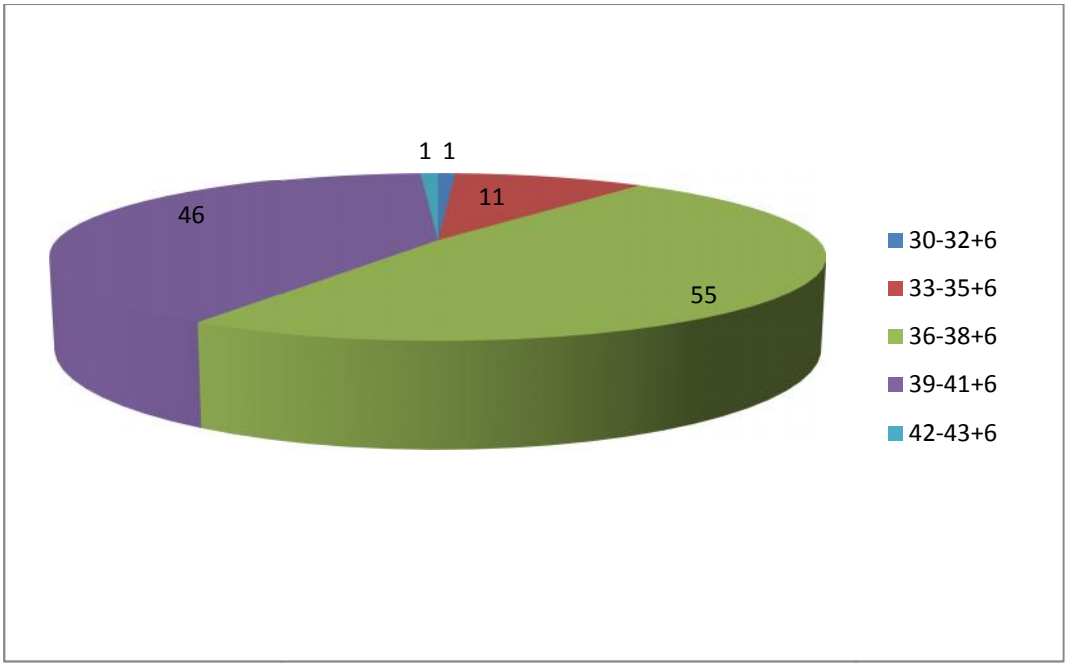


In the present study, 52.63 % of the pregnant women were primipara, remaining 47.37% of the women were multipara.

Table 3: Gestational Age distribution

Gestational Age(weeks)	Number	Percentage
30 – 32^{+6}	1	0.88%
33-35^{+6}	11	9.65%
36- 38^{+6}	55	48.25%
39-41^{+6}	46	40.35%
>42	01	0.88%
Total	**114**	**100.00**

Graph 3: Gestational age distribution

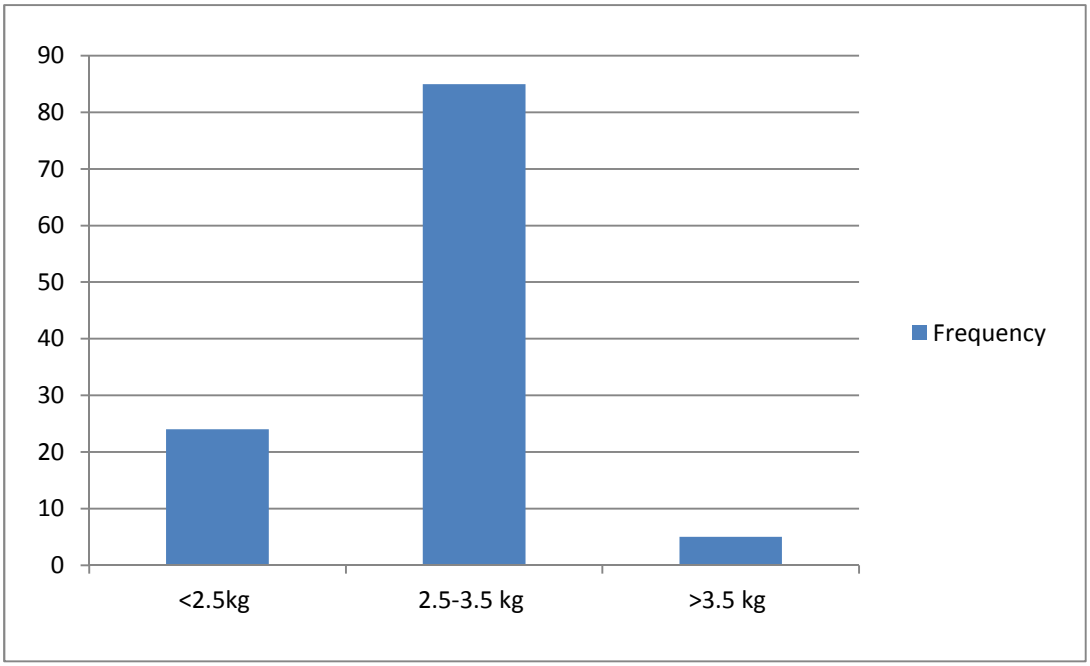


In the present study, 55 women (48.25%) delivered in between 36- 38^{+6} weeks POG, 46 (40.35%) delivered at 39 – 41^{+6} weeks. 11 women had preterm delivery i.e at 33- 35^{+6} weeks. 1 woman delivered in between 30- 32^{+6} weeks POG and 1 woman delivered at >42 weeks POG.

Table 4: Distribution of Actual Birth Weight according to major birth weight categories

ABW	Number	Percentage
<2.5 kg	24	21%
2.5 -3.5 kg	85	74%
>3.5 kg	5	0.04%
Total	**114**	**100.00**

Graph4: Distribution of ABW according to major birth weight categories



In the present study, actual birth weight of 85(74%) babies were within the normal birth weight range i.e 2.5 kg – 3.5 kg, 24(21%) of the babies were low birth weight(<2.5kg), 5 (0.04%) weighed >3.5 kg.

Table 5: Karl Pearson's Correlation Co-efficient with respect to Actual Birth Weight (ABW)

Formula	r	r^2
Shepard	0.8198	0.6720
Hadlock II	0.8391	0.7040
Hadlock II	0.8425	0.7089
Hadlock IV	0.9152	0.8377

In the present study, it was observed that Pearson's correlation co-efficient was highest with Hadlock IV (r =0.9152)

Table 6: Underestimation and overestimation of birth weight

Formula	Under estimation	Percent	Over estimation	Percent
Shepard	5	4.39%	39	44%
Hadlock II	27	23.68%	7	6.14%
Hadlock II	26	22.81%	9	7.89%
Hadlock IV	25	21.93%	8	7.02%

In the present study, maximum underestimation of birth weight was observed with Hadlock II formula and maximum overestimation of birth weight was observed with Shepard's formula.

Table 7: Shepard's formula for detection of a newborn <2.5 kg

	<2.5kg	**>2.5 kg**	**Total**
<2.5 kg	22	19	41
>2.5 kg	2	71	73
Total	24	90	114

	<2.5 kg	**95% CI**
Sensitivity	91.67%	80.61%- 102.72%
Specificity	78.89%	70.46%- 87.32%
PPV	53.66%	38.89%- 68.92%
NPV	97.26%	93.52%- 101.00%

It was observed that sensitivity of Shepard's formula for detection of a newborn of < 2.5 kg was 91.67%, specificity was 78.89%, positive predictive value was 53.66% and negative predictive value was 97.26% with a confidence interval of 95%.

Table 8 : Shepard's formula for detection of a newborn > 3.5 kg

	>3.5kg	**<3.5 kg**	**Total**
>3.5 kg	4	1	5
<3.5 kg	1	108	109
Total	5	109	114

	>3.5 kg	**95% CI**
Sensitivity	80.00%	44.94%- 100.00%
Specificity	99.08%	97.29%- 100.00%
PPV	80.00%	44.94%- 100.00%
NPV	99.08%	44.94%- 100.00%

In the present study, sensitivity of Shepard's formula for detection of a newborn of >3.5 kg was 80.00%, specificity was 99.08%, positive predictive value was 80.00% and negative predictive value was 99.08% with a confidence interval of 95%.

Graph 4: Correlation between the EBW by Shepard formula and the ABW

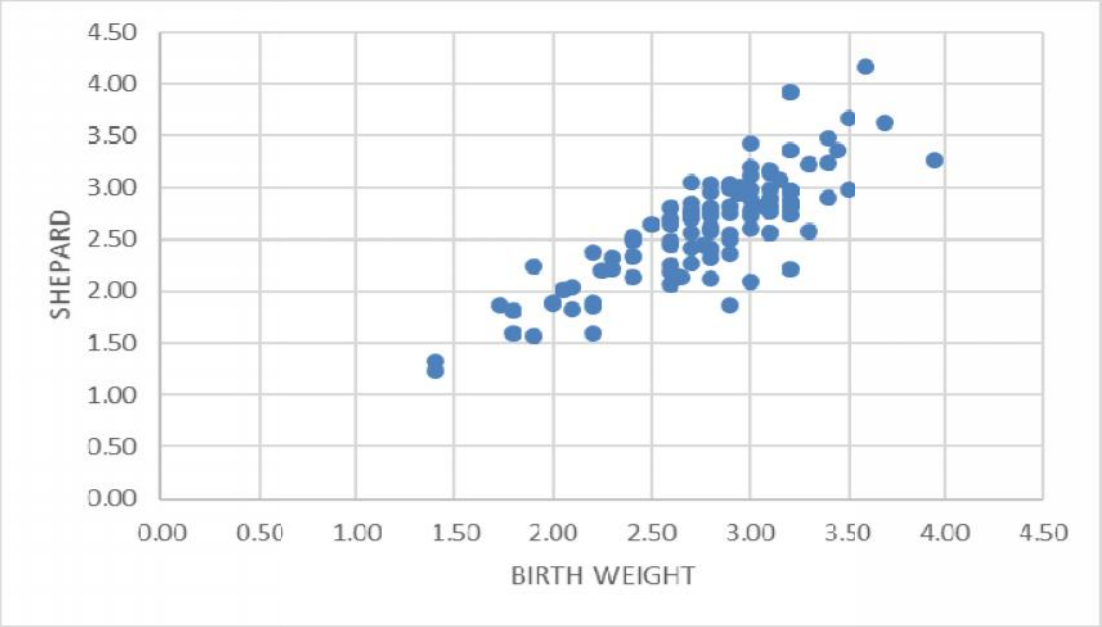


Table 9: Hadlock II formula for detection of a newborn <2.5 kg

	<2.5kg	**>2.5 kg**	**Total**
<2.5 kg	17	4	21
>2.5 kg	7	86	93
Total	24	90	114

	<2.5 kg	**95% CI**
Sensitivity	70.83%	52.65%- 89.02%
Specificity	95.56%	91.30%- 99.81%
PPV	80.95%	64.16%- 97.75
NPV	92.74%	91.30%- 99.81%

In the present study, sensitivity of Hadlock II formula for detection of a newborn of <2.5 kg was 70.83%, specificity was 95.56%, positive predictive value was 80.95% and negative predictive value was 92.74% with a confidence interval of 95%.

Table 10: Hadlock II formula for detection of a newborn > 3.5 kg

	>3.5kg	**<3.5 kg**	**Total**
>3.5 kg	4	10	14
<3.5 kg	1	99	100
Total	5	109	114

	>3.5 kg	**95% CI**
Sensitivity	80.00%	44.94%- 115.06%
Specificity	90.83%	85.41%- 96.24%
PPV	28.57%	4.91%- 52.24%
NPV	99.00%	97.05%- 100.00%

In the present study, sensitivity of Hadlock II formula for detection of a newborn of >3.5 kg was 80.00%, specificity 99.08%, positive predictive value was 80.00% and negative predictive value was 99.08% with a confidence interval of 95%.

Graph 5: Correlation between the EBW by Hadlock II equation and the ABW

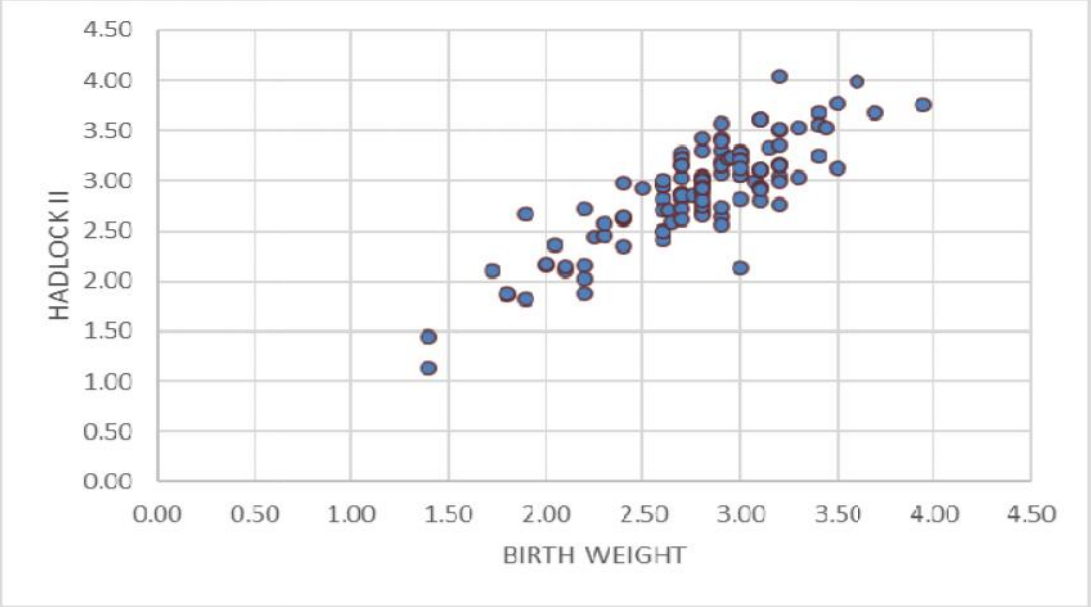


Table 11: Hadlock III formula for detection of a newborn <2.5 kg

	<2.5kg	**>2.5 kg**	**Total**
<2.5 kg	18	5	23
>2.5 kg	6	85	91
Total	24	90	114

	<2.5 kg	**95% CI**
Sensitivity	75.00%	57.68%- 92.32%
Specificity	94.44%	89.71%- 99.18%
PPV	78.26%	61.40%- 95.12%
NPV	93.41%	88.31%- 98.51%

In the present study, sensitivity of Hadlock III formula for detection of a newborn of < 2.5 kg was 75.00%, specificity 94.44%, positive predictive value was 78.26% and negative predictive value was 93.41% with a confidence interval of 95%.

Table 12: Hadlock III formula for detection of a newborn >3.5 kg

	>3.5kg	**<3.5 kg**	**Total**
>3.5 kg	4	7	11
<3.5 kg	1	102	103
Total	5	109	114

	>3.5 kg	**95% CI**
Sensitivity	80.00%	44.94%- 100.00%
Specificity	93.58%	88.98%- 98.18%
PPV	36.36%	7.94%- 64.79%
NPV	99.03%	97.14%- 100.00%

In the present study, sensitivity of Hadlock III formula for detection of a newborn of >3.5 kg was 80.00%, specificity was 93.58%, positive predictive value was 36.36% and negative predictive value was 99.03% with a confidence interval of 95%.

Graph 6: Correlation between the EBW by Hadlock III equation and the ABW

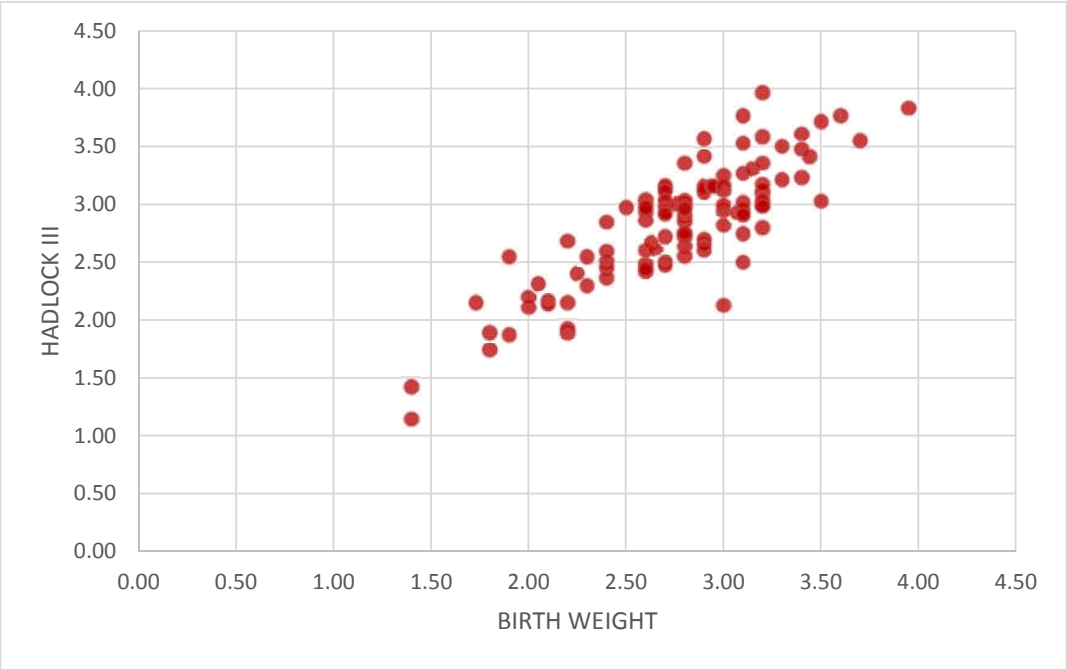


Table 13: Hadlock IV formula for detection of a newborn <2.5 kg

	<2.5kg	**>2.5 kg**	**Total**
<2.5 kg	17	4	21
>2.5 kg	7	86	93
Total	24	90	114

	<2.5 kg	**95% CI**
Sensitivity	70.83%	52.65%- 89.02%
Specificity	95.56%	91.30%- 99.81%
PPV	80.95%	64.16%- 97.75%
NPV	92.74%	91.30%- 99.81%

In the present study, sensitivity of Hadlock IV formula for detection of a newborn of <2.5 kg was 70.83%, specificity was 95.56%, positive predictive value was 80.95% and negative predictive value was 92.74% with a confidence interval of 95%.

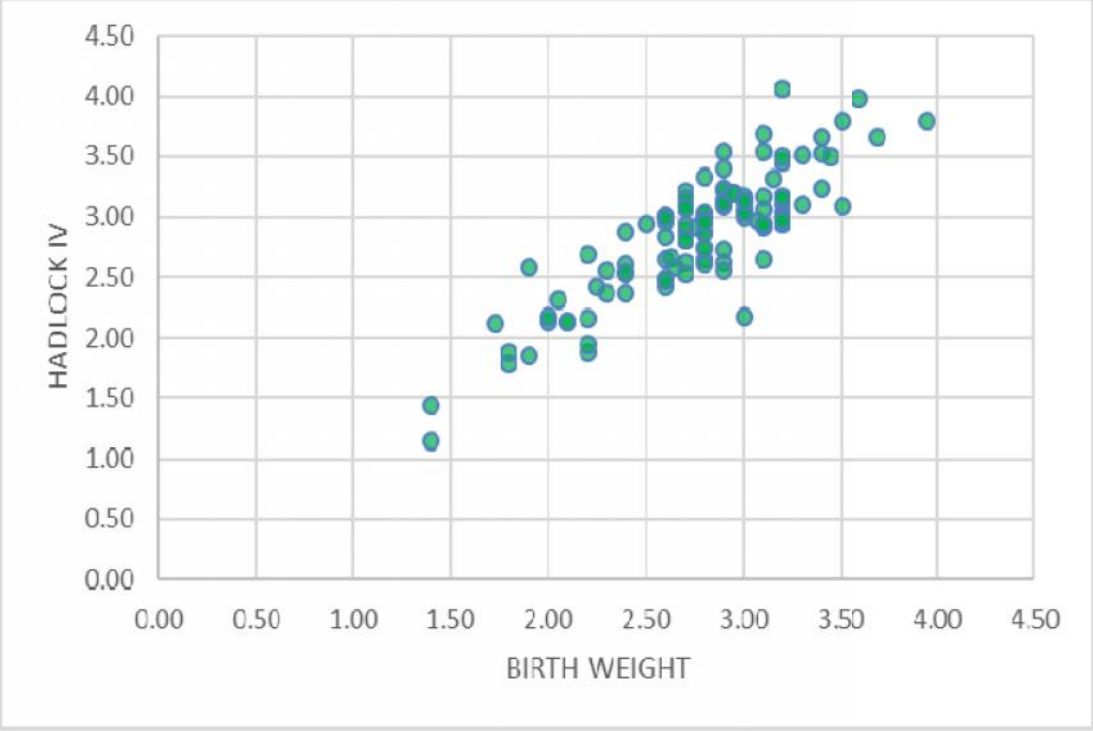
Table 14: Hadlock IV formula for detection of a newborn >3.5 kg

	>3.5kg	**<3.5 kg**	**Total**
>3.5 kg	4	8	12
<3.5 kg	1	108	102
Total	5	109	114

	>3.5 kg	**95% CI**
Sensitivity	80.00%	44.94%- 100.00%
Specificity	92.26%	87.76%- 97.56%
PPV	33.33%	6.66%- 60.01%
NPV	99.02%	97.11%- 100.00%

In the present study, sensitivity of Hadlock IV formula for detection of a newborn of >3.5 kg is 80.00%, specificity was 92.26%, positive predictive value was 33.33%and negative predictive value was 99.02% with a confidence interval of 95%.

Graph 7: Correlation between the EBW by Hadlock IV equation and the ABW



DISCUSSION

Fetal weight is an important parameter affecting neonatal morbidity and mortality, especially in preterm or small for-date fetuses. It is also an essential parameter for obstetric management in suspected macrosomia. Determination of fetal weight by USG depends on the formulae which are designed to predict fetal weight. These formulae use one or more fetal biometric measurements for calculation of estimated fetal weight. In the present study, we considered the equations of Shepard, Hadlock II, III and IV because these are the commonly used formulae to estimate fetal weight. This study shows that specific weight formulae may be favorable in different weight groups.

This one year prospective longitudinal study was conducted at the teaching hospital attached to KLE University's Jawaharlal Nehru Medical College, Belagavi during the period of January 2016-December 2017

A total of 114 pregnant women admitted to the labor room and antenatal ward were enrolled in the study. A data collection instrument was designed which had information regarding socio-demographic data, obstetric history previous ultrasonography reports. Ultrasonography was done and fetal biometry was measured.ABW of the newborns was taken. Data was entered in the Microsoft excel sheet and statistical analysis was done.

In the present study the mean actual birth weight was 2.78 kg. This was in contrast to the mean actual birth weight of 3,254 ± 622 g reported by Shittu et al[55] in Ife, Nigeria and 3.08 ± 0.610 Kg in Makurdi, Nigeria[56] and 3.10 ± 1.89 kg in Jos[57]. The possible reason may be that there are several factors affecting birth weight such as regional and socioeconomic factors.

Over a half them (52.63%) were primipara and rest were multipara, only 1.75 % were grand multipara as compared to the study conducted by DMA Kumara et al, Sri Lanka where 36.04%were primipara, around 52 % were multipara and only 5.81% were grand multiparous[52].Mean gestational age at the time of delivery in our study was 36 weeks to 38^{+6} weeks in 48.25% of the women. The actual birth weight in the present study ranged from 1.40 kg to 3.95kg with a mean of 2.78kg and standard deviation of 0.46.

In the current study a high degree of positive correlation between the ABW and the EFW was observed. Hadlock IV formula had the highest positive correlation(r =0.9152) with ABW compared to the other three formulae. Shepard's formula had the lowest positive correlation with ABW (r = 0.8198). Several studies had shown that there was a positive correlation between the ABW and EFW by different formulae. The present study also showed similar results. The study by Nahum G G had concluded that Hadlock and Shepard formulae had a positive correlation with ABW but Hadlock formula had a better correlation with ABW than Shepard's formula[58].

In the present study, sensitivity for detection of fetuses less than 2.5kg for each formula was compared and Shepard's formula had the highest sensitivity i.e 91.67% while Hadlock II and Hadlock IV formulae had the lowest sensitivity i.e 70.83%. Highest specificity was with Hadlock II and Hadlock IV formulae (95.56%). According to our results, Shepard's formula was found to be accurate in predicting birth weight < 2.5kg. However in a study done by Siemer J et al in Germany showed that Hadlock II and III formulae were the best to predict EFW in fetuses < 2.5 kg[59].In the present study, for birth weight >3.5 kg all the formulae had the same sensitivity i.e 80%. The specificity is highest (99.4%) with Shepard's formula while Hadlock II had the lowest (90.83%) specificity.

A descriptive cross-sectional study conducted in Sri Lanka in 2007 on 86 singleton pregnancies, statistical analysis was done by Karl Pearson's correlation, the highest positive correlation between ABW and EFW was seen in the Hadlock IV formula(r= 0.836), similar to the present study (r=0.9152).For <2.5kg- Hadlock IV formula had the highest sensitivity (75%) in their study. All the equations had high specificity which ranged from 93.6% to 100%, in contrast to our study, Shepard's formula had the highest sensitivity (91.67%) and Hadlock II and Hadlock IV both had highest specificity (95.56%). In their study, for fetuses more than 3.5kg the Shepard's formula had the highest sensitivity (90%).The specificity is highest (97.4%) in Hadlock IV. In the present study sensitivity was the same for all the formulae (80%), but specificity was highest for Shepard's formula (99.08%) [52.]

A longitudinal study was conducted at Central Hospital, Kwale in Nigeria on 412 women concluded that there was no significant difference between their mean EFW and that of the ABW ($p > 0.05$)[6]. In the present study, there was statistically significant difference between the EFW as per Shepard's fromula and ABW ($p=0.0137$)[53]

A prospective study conducted in Delhi in 2013, concluded that Campbell and Hadlock formulae tended to overestimate the fetal weight. In our study Shepard's formula overestimated the fetal weight whereas Hadlock II underestimated the fetal weight. Shepard's formula was the most accurate with 83% of the estimations within 20% of the ABW. The correlation coefficient was also highest with the Shepard's formula (0.7) compared to Campbell (0.6) and Hadlock (0.5). In the present study Pearson's correlation coefficient was highest with Hadlock IV fromula ($r=0.9152$)[50]

A study conducted in Australia in 2012 for the estimation of fetal weight. EFW of 121 pregnancies assessed within 7 days of birth by measuring the BPD, OFD, HC, AC, FL and compared to ABW. They concluded that accuracy of each EFW formulae changed with different age weight ranges, similarly our study also concluded that for different weight ranges accuracy of each formula changed[51].

A retrospective cross-sectional study included 1941 deliveries at the Perinatal Center at Erlangen University Hospital in Germany between January 2003 and December 2004 in which 11 different formulae were evaluated in a group of 1941 pregnancies. They concluded that Hadlock III and Hadlock IV formulae showed the best levels of accuracy. Similarly in our study Hadlock IV was found to be accurate with Pearson's co-relation coefficient (r=0.9152)[60].

A prospective cross-sectional study in Dhaka, Bangladesh on well-dated singleton fetuses (n=73) concluded that Hadlock III formula i.e (AC/HC/FL) was accurate in predicting fetal weight however our study showed that Hadlock IV was accurate in predicting EFW[61].

A study was conducted at UAE University in 2005 where in 173 patients from different continents were included in the study. They compared eight sonographic formulae for the prediction of foetal weight concluded that Shepard formula was simple and accurate in predicting foetal weight at term in the studied multiethnic population. Our study concluded that Shepard's formula was most sensitive in predicting birth of foetuses of birth weight <2.5 kg and most specific among the other 3 formulae in predicting birth weight of foetuses weighing >3.5 kg[54].

A prospective longitudinal study was conducted by Charles et al in Nigeria in 2015 on 412 pregnant women who were expected to deliver within 48 hours of the

ultrasonography. They compared accuracy of 12 different ultrasonographic formulae. In their study the highest intra-class correlation coefficient was generated by the Hadlock 5 and Hsieh 2 equations. The least mean absolute percent error was obtained with Hsieh 2 equation, followed by Woo 3, and Hadlock 5. In our study the highest correlation coefficient was with Hadlock IV.[49]

A prospective study conducted by O.O.Ayoola et al in Nigeria in 2008 on 100 pregnant women compared 5 ultrasonographic formulae (Shepard, Hadlock II, Hadlock III, Nzeh et al formula 1 and Nzeh et al formula 2. Their study showed that the second formula discovered by Nzeh et al showed least bias ($P<0.001$), mean percentage error was 7.69%, and standard deviation 11.86%[53]. Our study concluded that standard deviation was the least for Hadlock IV formula (0.48).

A prospective observational study conducted by N.G.Anderson et al in 1991 and in 2000.The Rose and McCallum formula was used for estimation of fetal weight for 72 deliveries. Inter- and intra-observer agreement was assessed within this group. Bland–Altman measures of agreement from log data were calculated as ratios. They repeated the study in 2000 in 208 consecutive deliveries, comparing predicted and actual weights for 12 published equations using Bland–Altman and percentage error methods. Their study showed 95% limits of agreement ranged from −4.4% to + 3.3% for inter- and intra-observer estimates, but were −18.0% to 24.0% for estimated and actual birth weight. There was no improvement in accuracy between 1991 and 2000. In 2000 only six of the 12 published formulae had overall bias within 7% and precision within 15%. There was greater bias and poorer precision in nearly all equations if the birth weight was < 1000 g. Observer error is a relatively minor component of the error in estimating fetal weight; error due to the equation is a larger source of error. Improvements in ultrasound technology have not improved the

accuracy of estimating fetal weight. Estimating fetal weight in the very low birth weight infants was subject to much greater error than in larger babies[2].

The limitations of this study include:

(1) Only 4 ultrasound equations were used in this study. It is possible to have different results if all known equations were to be used.

(2) Birth weight was not taken by only one individual. Observer variability could be a source of inconsistency in the measuring the ABW.

(3) Lesser sample size (because feasibility of the study was to be assessed), hence it is difficult to generalize the results obtained by this study for the whole population.

Recommendations: Studies involving a larger population needs to be undertaken to generalize the results.

CONCLUSION

All the four formulae have adequate accuracy for estimating fetal weight, Hadlock IV has the best accuracy with highest positive correlation coefficient (r=0.9152) . Sensitivity and specificity of each EFW formula changed with different weight ranges.

SUMMARY

This one year Prospective Longitudinal Study was conducted in the teaching hospital attached to KLE University's Jawaharlal Nehru Medical College, Belagavi during the period of January 2016 to December 2016. The present study was undertaken to assess the accuracy of 4 ultrasonographic formulae (Shepard, Hadlock II, Hadlock III, Hadlock IV) in predicting fetal weight.

A total of 114 pregnant women between admitted to the labor room and antenatal ward and delivering preterm babies were included in the study. A data collection instrument was designed which consisted information regarding demography, obstetric history, previous ultrasonography reports and the present ultrasound findings.

Ultrasound examination was done by three specifically identified obstetricians and fetal biometry i.e BPD, HC, AC and FL, Amniotic Fluid Index (AFI) and position of the placenta. EFW with the help of fetal biometric parameters were calculated separately for every patient using all the 4 equations. Data was entered in the Microsoft excel sheet and statistical analysis was done.

Pearson's correlation co-efficient was highest with Hadlock IV (r =0.9152).For detection of newborn <2.5 kg, Shepard's formula had the highest sensitivity i.e 91.67%, Hadlock II and Hadlock IV formulae had the highest specificity (95.56%). For detection of newborn >3.5 kg, all the four formulae had the same sensitivity (80.00%) and specificity was highest with Shepard's formula (99.08%).

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ANNEXURE

K.L.E.UNIVERSITY'S
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
(Accredited 'A' Grade by NAAC)

Website: http//www.jnmc.edu
E-Mail : dome@jnmc.edu

Phone: (+ 91-(0)831 Office : 2471350
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 418. **Date: 19/11/2015**

To,

REG.NO.BJ0115001
PG student in OBG,
J.N.Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"ACCURACY OF VARIOUS ULTRASONOGRAPHIC FORMULAE IN PREDICTING FETAL WEIGHT – A ONE YEAR PROSPECTIVE LONGITUDINAL STUDY AT KLE'S DR.PRABHAKAR KORE CHARITABLE HOSPITAL & MRC, BELAGAVI",** is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Arathi Darshan)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Ganga Pilli)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

38

INFORMED CONSENT FORM

ACCURACY OF VARIOUS ULTRASONOGRAPHIC FORMULAE IN PREDICTING FETAL WEIGHT –A ONE YEAR PROSPECTIVE LONGITUDINAL STUDY AT KLE's DR.PRABHAKAR KORE CHARITABLE HOSPITAL & MRC, BELAGAVI.

Objective and purpose of the study:
This research is intended to study the accuracy of 4 different ultrasonographic equations in predicting fetal weight. The principal investigator of this study is DR.APOORVA.M.HIREMATH under the guidance of DR.HEMA.A.DHUMALE.

Procedure:
If you agree to be part of the research study you will be required to give certain information regarding the history of the present pregnancy and you will be subjected for ultrasonographic examination and birth weight of your infant will be recorded after the delivery.

Risk and Benefits:

There is no risk associated with study.

Accurate estimation of fetal weight will help estimate the birth weight of the baby and therefore aid in the further management of the pregnancy and delivery.

Alternatives:

Taking part in this study is voluntary. You may choose not to take part in this study, or if you decide to take part you can later change my mind and withdraw from the study. Your decision will not change the present or future health care or other services that you receive. The study doctor or sponsorer may stop your participation in this study any time. If you choose not to take part in the study you will receive the standard treatment for patients with your condition

Privacy and Confidentiality:

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. The code numbers will identify you in this research record. Information from this study may be published but your identity will be confidential in any publication.

Institution / Sponsor's policy:

Does not apply to this research

VOLUNTARY PARTICIPATION/ WITHDRAWAL:

Your participation in this study is entirely voluntary and you may withdraw from the study at any time.

Financial incentives for participation:

You will not be paid / offered any gifts /incentives for participating in the study.

Authorization to publish the results:

The results of the study would be forwarded to the KLE University, Belagavi as a part of requirement towards the completion of MD degree, review and publishing.

QUESTIONS:
If you have any questions about study you may call :

REG.NO.BJ0115001
Investigator,
PG in Obstetrics & Gynecology,
JNMC, Belagavi.
Phone No.: 9964488168

Professor,
Department of Obstetrics & Gynecology ,
JNMC, Belagavi.

In case of queries regarding your right as a participant you may contact:

Chairman,
J.N.M.C Ethical Committee for Human Research,
Professor and Head , Department of Pathology , JNMC, Belagavi.
Phone number: 0831-2471350.
Extn: 1527

CONSENT FORM

I voluntarily agree to take part in this study by signing on the line below. I may withdraw at any time. I am not giving up any of my legal rights by signing this form. My signature below indicated that I have read this entire consent form or it has been read to me, and has been explained to me in my vernacular language and had all my questions answered. I will be given a copy of this consent form.

Signature /Left Thumb print of the Participant or legally authorized representative.

Participant's Name/ : .....

Signature/ Left Thumb
Impression of the participant's : .....

Signature/ Left Thumb
Impression. : .....

Witness's Name : .....

Signature/ Left Thumb
Impression. :.....

Investigators name and Signature : .....

Date and Place : .....

Date: Place :

ಸಹಮತಿ ತಿಳಿಸುವ ಫಾರ್ಮ

ಗರ್ಭದ ತೂಕ ಕಂಡುಹಿಡಿಯಲು ಸರಿಯಾದ ವಿವಿಧ ಅಲ್ಟ್ರಾಸೋನೋಗ್ರಾಫಿ ಸೂತ್ರಗಳು– ಒಂದು ವರ್ಷದ ವಿಶಾಲವಾದ ಅಧ್ಯಯನ–

ಕೆ.ಎಲ್.ಇ. ಜಿ.ಡಾ ಪ್ರಭಾಕರ ಕೋರೆ ಚಾರಿಟೇಬಲ್ ಹಾಸ್ಪಿಟಲ್ ಹಾಗೂ ಎಮ್.ಆರ್.ಸಿ. ಬೆಳಗಾವಿ.

ಅಧ್ಯಯನ ಗುರಿ ಹಾಗೂ ಉದ್ದೇಶ:–

ಈ ಸಂಶೋಧನೆಯು ಗರ್ಭದ ತೂಕ ಕಂಡುಹಿಡಿಯುವ ಅಲ್ಟ್ರಾಸೋನೋಗ್ರಾಫಿಯ 4 ವಿವಿಧ ಸಮೀಕರಣದ ಸರಿಯಾದ ಅಧ್ಯಯನವಾಗಿರುತ್ತದೆ. ಈ ಅಧ್ಯಯನದ ಪ್ರಮುಖ ಪರೀವೀಕ್ಷಕರು ಡಾ. ಅಪೂರ್ವಾ. ಎಮ್. ಹಿರೇಮಠ ಇರುತ್ತಾರೆ ಹಾಗೂ ಡಾ.ಹೇಮಾ ಎ. ಧುಮಾಳೆ ಮಾರ್ಗದರ್ಶಕರಾಗಿತ್ತಾರೆ.

ವಿಧಾನ:

ತಾವು ಈ ಪರಿಶೋಧನೆಯ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವದಿದ್ದಲ್ಲಿ ತಮಗೆ ನಿಮ್ಮ ಪ್ರಮಾಣಿತ ಮಾಹಿತಿ , ತೂಕ ಹಾಗೂ ಆರೋಗ್ಯದ ಇತಿಹಾಸದ ಕೆಲವು ಮಾಹಿತಿ ಕೊಡಬೇಕಾಗುವುದು. ತದನಂತರ ನಿಮ್ಮನ್ನು ಅಲ್ಟ್ರಾಸೋನೋಗ್ರಾಫಿಕ್ ಪರಿವೀಕ್ಷಣೆಗೆ ಒಳಪಡಿಸಲಾಗುವುದು ಹಾಗೂ ಪ್ರಸ್ತುತಿಯ ನಂತರ ನಿಮ್ಮ ಮಗುವಿನ ಪ್ರಸ್ತೂತಿ ತೂಕವನ್ನು ದಾಖಲಿಸಿಕೊಳ್ಳಲಾಗುವುದು.

ಅಪಾಯ ಹಾಗೂ ಲಾಭಗಳು :

ಈ ಅಧ್ಯಯನಕ್ಕೆನುಗುಣವಾಗಿ ಇಲ್ಲಿ ಯಾವುದೇ ಅಪಾಯ ಇರುವುದಿಲ್ಲ.

ಗರ್ಭದ ಸರಿಯಾದ ತೂಕದ ಅಂದಾಜು ಮಾಡುವುದು ಮಗುವಿನ ಪ್ರಸ್ತೂತಿ ತೂಕವನ್ನು ಅಳತೆಮಾಡಲು ಸಹಾಯವಾಗುತ್ತದ ಹಾಗೂ ಅದರಿಂದ ಗರ್ಭಾವಸ್ಥೆ ಹಾಗೂ ಪ್ರಸ್ತೂತಿ ನಿರ್ವಹಣೆಯಲ್ಲಿ ಉಪಯುಕ್ತವಾಗುತ್ತದೆ.

ಪರ್ಯಾಯಗಳು: –

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದು ಐಚ್ಛಿಕವಾಗಿರುತ್ತದೆ. ತಾವು ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಪಾಲುಗೊಳ್ಳದೇ ಇರುವುದನ್ನು ಆಯ್ಕೆಮಾಡಬಹುದು ಅಥವಾ ಮುಂದೆ ಭಾಗವಹಿಸಲು ಇಚ್ಛಿಸಿದಲ್ಲಿ ನೀವು ನನ್ನ ಮನಸ್ಸನ್ನು ಬದಲಾಯಿಸಬಹುದು ಹಾಗೂ ಅಧ್ಯಯನದಿಂದ ಹಿಂಪಡೆಯುವುದು. ನಿಮ್ಮ ನಿರ್ಣಯವು ತಾವು ಪಡೆಯುವ ಈಗಿನ, ಅಥವಾ ಭವಿಷ್ಯದ ಆರೋಗ್ಯ ತಪಾಸಣೆಯಲ್ಲಿ ಬದಲಾಗುವುದಿಲ್ಲ. ಒಂದು ವೇಳೆ ತಾವು ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸದೇ ಇರಲು ಆಯ್ಕೆ ಮಾಡಿದಲ್ಲಿ, ತಾವು ತಮ್ಮ ಪರಿಸ್ಥಿತಿಗನುಸರಿಸಿ ಚಿಕಿತ್ಸೆ ಪಡೆಯುವಿರಿ.

ಏಕಾಂತತೆ ಹಾಗೂ ಗೌಪ್ಯತೆ

ಕಾನೂನಿನಂತರ್ಗತ ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ನಿಮ್ಮಿಂದ ಪಡೆದುಕೊಂಡ ಎಲ್ಲ ಮಾಹಿತಿಯನ್ನು ಗುಪ್ತವಾಗಿ ಇಡಲಾಗುವುದು. ಪರಿಶೋಧನಾ ದಾಖಲಾತಿಯಲ್ಲಿ ಕೋಡ ಸಂಖ್ಯೆಯು ನಿಮ್ಮನ್ನು ಗುರುತಿಸುವುದು. ಅಧ್ಯಯನದ ಬಗ್ಗೆ ಮಾಹಿತಿ ಪ್ರಕಟಿಸಲಾಗುವುದು ಆದರೆ ನಿಮ್ಮ ಗುರುತಿನ ಬಗ್ಗೆ ಪ್ರಕಟಣೆಯಲ್ಲಿ ಗುಪ್ತವಾಗಿರುವುದು.

ಸಂಸ್ಥೆ/ಪಾಯೋಜಕರ ನೀತಿ :

ಈ ಪರಿಶೋಧನೆಗೆ ಅನ್ವಯಿಸುವುದಿಲ್ಲ

ಭಾಗವಹಿಸುವುದು ಐಚ್ಛಿಕ/ ಹಿಂಪಡೆಯುವಿಕೆ:

ನಿಮ್ಮ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದು ಐಚ್ಛಿಕವಾಗಿರುತ್ತದೆ ಹಾಗೂ ತಾವು ಯಾವುದೇ ಸಮಯ ಅಧ್ಯಯನದಿಂದ ಹಿಂಪಡೆಯುವುದು.

ಭಾಗವಹಿಸಲು – ಆರ್ಥಿಕ ಬಟವಡೆ: –

ತಮಗೆ ಯಾವುದೇ ತರಹದ ಕೊಡುಗೆ ಅಥವಾ ಬಟವಡೆ ಕೊಡಲಾಗುವುದಿಲ್ಲ.

ಫಲಿತಾಂಶ ಪ್ರಕಟಣೆಗೆ ಅಧಿಕಾರ ನೀಡುವುದು:

ಅಧ್ಯಯನದ ಫಲಿತಾಂಶವನ್ನು ಕೆ.ಎಲ್.ಇ.ಯು ಯುನಿವರ್ಸಿಟಿಯ ಎಮ್.ಡಿ. ಡಿಗ್ರಿ ಮುಗಿಸಲು ಅವಲೋಕನ ಹಾಗೂ ಪ್ರಕಟಣೆಗಾಗಿ ಕಳುಹಿಸಲಾಗುವುದು.

ಪ್ರಶ್ನೆಗಳು :

ಅಧ್ಯಯನದ ಬಗ್ಗೆ ತಮ್ಮ ಏನಾದರೂ ಪ್ರಶ್ನೆಗಳಿದ್ದರೆ ಇವರನ್ನು ಸಂಪರ್ಕಿಸಿರಿ.

REG.NO.BJ0115001

ಪರಿವೀಕ್ಷಕರು,	ಪ್ರೋಫೆಸರ್
ಆಬ್ಸ್ಟೆಟ್ರಿಕ್ಸ್ ಹಾಗೂ ಗಾಯನೋಕೋಲಾಜಿಯಲ್ಲಿ ಪಿ.ಜಿ ಜೆ.ಎನ್.ಎಮ್.ಸಿ. ಬೆಳಗಾವಿ ಫೋನ್ ನಂ.	ಆಬ್ಸ್ಟೆಟ್ರಿಕ್ಸ್ ಹಾಗೂ ಗಾಯನೋಕೋಲಾಜಿ ಜೆ.ಎನ್.ಎಮ್.ಸಿ. ಬೆಳಗಾವಿ

ನಿಮ್ಮ ಹಕ್ಕುಗಳ ಬಗ್ಗೆ ಯಾವುದೇ ಪ್ರಶ್ನೆ ಇದ್ದಲ್ಲಿ ಇವರನ್ನು ಸಂಪರ್ಕಿಸಿರಿ.

REG.NO.BJ0115001

ಚೇರಮನ್

ಜೆ.ಎನ್. ಎಂ.ಸಿ. ಎಥಿಕಲ್ ಕಮೀಟಿ ಫೋರ್ ಹ್ಯೂಮನ್ ರಿಸರ್ಚ ಪ್ರೋಪೇಸರ್ ಆಂಡ್ ಆಫ್ ಡಿಪಾರ್ಟಮೇಂಟ್ ಆಫ್ ಪ್ಯಾಥಾಲಾಜಿ

ಜೆ.ಎನ್. ಎಂ.ಸಿ.- ಬೆಳಗಾವಿ

ಫೋನ್ ನಂ. 0831-2471350,

ಎಕ್ಸಟೆನ್ಸ: 1527

ಸಹಮತಿ ಹೇಳಿಕೆ

ನಾನು ಕೆಳಗಿನ ರೇಷೆ ಮೇಲೆ ಹಸ್ತಾಕ್ಷರ ಮಾಡಿ ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಸ್ವ ಇಚ್ಛೆಯಿಂದ ಒಪ್ಪಿಲೊಳ್ಳುತ್ತೇನೆ. ನನ್ನ ಹಸ್ತಾಕ್ಷರವನ್ನು ನಾನು ಸಹಮತಿ ಹೇಳಿಕೆಯನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ಓದಿದ್ದು, ನನಗೆ ಓದಿ ತಿಳಿಸುದ್ದು ಹಾಗೂ ನನಗೆ ತಿಳಿಯುವ ಭಾಷೆಯಲ್ಲಿ ವಿವರಿಸಲಾಗಿದ್ದು, ಹಾಗೂ ನನ್ನ ಎಲ್ಲ ಪ್ರಶ್ನೆಗಳಿಗೆ ಸಮರ್ಪಕವಾಗಿ ಉತ್ತರ ಸಿಕ್ಕಿದ್ದರಿಂದ ಮಾಡಿರುತ್ತೇನೆ.

ನಾವು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಹಿಂಪಡೆಯಬಹುದು. ಈ ಹೇಳಿಕೆಗೆ ಹಸ್ತಾಕ್ಷರ ಮಾಡುವುದರಿಂದ ನಾನು ಯಾವುದೇ ಕಾಯ್ದೆಯ ಹಕ್ಕುಗಳನ್ನು ಬಿಟ್ಟು ಕೊಡುತ್ತಿಲ್ಲ. ಈ ಸಹಮತಿ ಫಾರ್ಮನ ಪ್ರತಿಯನ್ನು ಕೊಡಬೇಕು.

ಭಾಗವಹಿಸುವವರ ಹೆಸರು : .....

ಭಾಗವಹಿಸುವವರ ಹಸ್ತಾಕ್ಷರ

ಎಡ ಹೆಬ್ಬಟ್ಟಿನ ಮುದ್ರೆ : .....

ಸಾಕ್ಷಿದಾರರ ಹೆಸರು : .....

ಸಾಕ್ಷಿದಾರರ ಹಸ್ತಾಕ್ಷರ

ಎಡಹೆಬ್ಬಟ್ಟಿನ ಮುದ್ರೆ : .....

ಪರಿವೀಕ್ಷಕರ ಹೆಸರು : .....

ಪರಿವೀಕ್ಷಕರ ಹಸ್ತಾಕ್ಷರ : .....

ದಿನಾಂಕ: ಸ್ಥಳ :

सम्मती कळविण्याचे फॉर्म

गर्भाचे वजन शोधण्यासाठी समर्पक विविध अल्ट्रासोनोग्राफी सूत्र

एक वर्षाचा विशाला अध्ययन के.एल.ई.ज डॉ. प्रभाकर कोरे चारिटेबल हॉस्पिटल आणि एम.आर. सी बेळगांव .

अध्ययनाचे उद्धिष्ट आणि उद्देश :

या परिशोधन गर्भाचे वजन शोधण्यासाठी अल्ट्रासोनोग्राफीचे ४ विविध समीकरणाचे व्यवस्थिर अध्ययन आहे. या अध्ययनाचे प्रमुख परीक्षक म्हणून डॉ. अपूर्वा एम. हिरेमठ आणि डॉ. हेमा ए. धुमाळे मार्गदर्शक म्हणून असतील.

विधान :

आपणास या परिशोधनामध्ये भाग घेण्याचे असल्यास आपणास आपला प्रमाणित माहिती, वजन, आरोग्याचा इतिहासाचे काही माहिती देणेचे आहे. त्यानंतर आपणास अल्ट्रासोनोग्राफी परिक्षण केले जाईल व प्रसूतीतनंतर आपल्या बाळाचे प्रसूतीवजनाचा दाखल करुन घेण्याते येईल.

अपाय आणि लाभ :

या अध्ययनापासून इथे कुठलाही अपाय नाही गर्भाचे नक्की वजनाचा अंदाज करणे, बाळाचे प्रसूतीचा वेळेचा वजन माप करण्यास मदत होवो आणि त्याचाने गर्भावस्था आणि प्रसूती निर्वहणाला मदत होते.

पर्याय :

या अध्ययनामध्ये भाग घेणे ऐच्छिक आहे आपण या अध्ययनात न भाग घेण्याचे ठरवू शकता किंवा पुढे भाग घेण्यास इच्छुक असल्यास आपण माझे मन बदलू शकला आणि अध्ययनापासून वापस घेऊ शकाल. आपला निर्णय आपणाला मिळणाऱ्या अताचे किंवा भविष्यात आरोग्य तपासणीत बदल होणार नाही. एक वेळ आपण अध्ययनामध्ये भाग न होण्याचा ठरविल्यास आपण आपल्या परिस्थितीनुसार इलाज करुन घेता येईल.

एकांतता आणि गोपनीयता (गुप्त):-

कानूनचा अंतर्गत अध्ययनाचे वेळी आपणाकडून घेतलेल्या सर्व माहिती गुप्त ठेवण्यात येईल. परिशोधन दाखलात कोड, क्रमांक आपणास ओळखेल अध्ययनाबद्दल माहितीचे प्रकटन केला जाईल पण आपले ओळखबद्दल प्रकटनामध्ये गुप्त राहील.

संस्था/प्रायोजकांचे निती :-

या परिशोधनाला अन्वय होत नाही.

भाग घेणे ऐच्छिक/माघार घेणे :-

आपला अध्ययनामध्ये भाग घेणे औच्छिक आहे; आणि आपण कुठल्याही वेळी अध्ययनापासून माघार घेऊ शकता भाग घेण्यास आर्थिक प्रोत्साहन.

आपणास कुठल्याही प्रकारचे बक्षिस किंवा प्रोत्साहन धन दिले जाणार नाही.

फलितांश प्रकटनाला अधिकार देणे

अध्ययनाचे फलितांश के.एल.ई युनिवर्सिटीचा एम.डी.डिग्री पूर्ततेसाठी अवलोकन आणि प्रकटनासाठी पाठविले जाईल.

प्रश्न :

अध्ययनाबद्दल आपले जवळ कुठलेही प्रश्न असल्यास यांना संपर्क साधावे.

REG.NO.BJ0115001 परीक्षक ॲब्सेट्रीक्स आणि गायनाकोलॉजी जे.एन.एम.सी बेळगांव फोन नं.	प्राफसर ॲब्सेट्रीक्स आणि गायनाकोलॉजी जे.एन.एम.सी

आपले हक्काबद्दल कुठलेही प्रश्न असल्यास, यांना संपर्क साधावे.

डॉ. गंगा पिळळी

चेअरमन

जेएनएमसी एथिकल कमिटी फॉर ह्यूमन रिसर्च

प्रोफेसर अँन्ड हेड ऑफ डिपार्टमेंट ऑफ पॅथालॉजी.

जेएनएमसी बेळगांव फोन नं. 0831-2471350 Extn1527

सहमती पत्र

मी खालील रेषेवर सही करुन या अध्ययनामध्ये स्वइच्छेने भाग घेण्यास सहमत आहे. सहमती पत्र माहिती मी संपूर्ण वाचून, मला समजणाऱ्या भाषेमध्ये वाचून कळविण्याने व माझे सर्व प्रश्नांचे समर्पक उत्तर मिळाल्याने मी सही केली आहे. मी कुठल्याही वेळी माघार घेऊ शकतो. खाली सही केल्यामुळे मी कुठल्याही कानूनी हक्क सोडून देत नाही आहे मला सहमती फॉर्मचा प्रत द्यावे.

भाग घेणाऱ्याचे नांव _____

भाग घेणाऱ्याची सही/ _____

डाव्या अंगठ्याचे मुद्रा

साक्षीदारांचे नांव : _____

साक्षीदाराची सही/ _____

डाव्या अंगठ्याचे मुद्रा

परीक्षकांचे नांव _____

परीक्षकांचे सही _____

तारीख **स्थळ:**

ANNEXURE

K.L.E.UNIVERSITY'S
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
(Accredited 'A' Grade by NAAC)

Website: http//www.jnmc.edu
E-Mail : dome@jnmc.edu

Phone: (+ 91-(0)831 Office : 2471350
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 418. **Date: 19/11/2015**

To,

Dr. Apoorva M. Hiremath,
PG student in OBG,
J.N.Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"ACCURACY OF VARIOUS ULTRASONOGRAPHIC FORMULAE IN PREDICTING FETAL WEIGHT – A ONE YEAR PROSPECTIVE LONGITUDINAL STUDY AT KLE'S DR.PRABHAKAR KORE CHARITABLE HOSPITAL & MRC, BELAGAVI",** is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Arathi Darshan)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Ganga Pilli)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

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INFORMED CONSENT FORM

ACCURACY OF VARIOUS ULTRASONOGRAPHIC FORMULAE IN PREDICTING FETAL WEIGHT –A ONE YEAR PROSPECTIVE LONGITUDINAL STUDY AT KLE's DR.PRABHAKAR KORE CHARITABLE HOSPITAL & MRC, BELAGAVI.

Objective and purpose of the study:
This research is intended to study the accuracy of 4 different ultrasonographic equations in predicting fetal weight. The principal investigator of this study is DR.APOORVA.M.HIREMATH under the guidance of DR.HEMA.A.DHUMALE.

Procedure:
If you agree to be part of the research study you will be required to give certain information regarding the history of the present pregnancy and you will be subjected for ultrasonographic examination and birth weight of your infant will be recorded after the delivery.

Risk and Benefits:

There is no risk associated with study.

Accurate estimation of fetal weight will help estimate the birth weight of the baby and therefore aid in the further management of the pregnancy and delivery.

Alternatives:

Taking part in this study is voluntary. You may choose not to take part in this study, or if you decide to take part you can later change my mind and withdraw from the study. Your decision will not change the present or future health care or other services that you receive. The study doctor or sponsorer may stop your participation in this study any time. If you choose not to take part in the study you will receive the standard treatment for patients with your condition

Privacy and Confidentiality:

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. The code numbers will identify you in this research record. Information from this study may be published but your identity will be confidential in any publication.

Institution / Sponsor's policy:

Does not apply to this research

VOLUNTARY PARTICIPATION/ WITHDRAWAL:

Your participation in this study is entirely voluntary and you may withdraw from the study at any time.

Financial incentives for participation:

You will not be paid / offered any gifts /incentives for participating in the study.

Authorization to publish the results:

The results of the study would be forwarded to the KLE University, Belagavi as a part of requirement towards the completion of MD degree, review and publishing.

QUESTIONS:
If you have any questions about study you may call :

Dr.APOORVA.M.HIREMATH
Investigator,
PG in Obstetrics & Gynecology,
JNMC, Belagavi.
Phone No.: 9964488168

DR.ANITA DALAL MD
Professor,
Department of Obstetrics & Gynecology ,
JNMC, Belagavi.
PH. NO. 9448140434

In case of queries regarding your right as a participant you may contact:

DR. GANGA PILLI,
Chairman,
J.N.M.C Ethical Committee for Human Research,
Professor and Head , Department of Pathology , JNMC, Belagavi.
Phone number: 0831-2471350.
Extn: 1527

CONSENT FORM

I voluntarily agree to take part in this study by signing on the line below. I may withdraw at any time. I am not giving up any of my legal rights by signing this form. My signature below indicated that I have read this entire consent form or it has been read to me, and has been explained to me in my vernacular language and had all my questions answered. I will be given a copy of this consent form.

Signature /Left Thumb print of the Participant or legally authorized representative.

Participant's Name/ : .....

Signature/ Left Thumb
Impression of the participant's : .....

Signature/ Left Thumb
Impression. : .....

Witness's Name : .....

Signature/ Left Thumb
Impression. :.....

Investigators name and Signature : .....

Date and Place : .....

Date: Place :

ಸಹಮತಿ ತಿಳಿಸುವ ಫಾರ್ಮ

ಗರ್ಭದ ತೂಕ ಕಂಡುಹಿಡಿಯಲು ಸರಿಯಾದ ವಿವಿಧ ಅಲ್ಟ್ರಾಸೋನೋಗ್ರಾಫಿ ಸೂತ್ರಗಳು– ಒಂದು ವರ್ಷದ ವಿಶಾಲವಾದ ಅಧ್ಯಯನ–

ಕೆ.ಎಲ್.ಇ. ಜಿ.ಡಾ ಪ್ರಭಾಕರ ಕೋರೆ ಚಾರಿಟೇಬಲ್ ಹಾಸ್ಪಿಟಲ್ ಹಾಗೂ ಎಮ್.ಆರ್.ಸಿ. ಬೆಳಗಾವಿ.

ಅಧ್ಯಯನ ಗುರಿ ಹಾಗೂ ಉದ್ದೇಶ:–

ಈ ಸಂಶೋಧನೆಯು ಗರ್ಭದ ತೂಕ ಕಂಡುಹಿಡಿಯುವ ಅಲ್ಟ್ರಾಸೋನೋಗ್ರಾಫಿಯ 4 ವಿವಿಧ ಸಮೀಕರಣದ ಸರಿಯಾದ ಅಧ್ಯಯನವಾಗಿರುತ್ತದೆ. ಈ ಅಧ್ಯಯನದ ಪ್ರಮುಖ ಪರೀವೀಕ್ಷಕರು ಡಾ. ಅಪೂರ್ವಾ. ಎಮ್. ಹಿರೇಮಠ ಇರುತ್ತಾರೆ ಹಾಗೂ ಡಾ.ಹೇಮಾ ಎ. ಧುಮಾಳೆ ಮಾರ್ಗದರ್ಶಕರಾಗಿತ್ತಾರೆ.

ವಿಧಾನ:

ತಾವು ಈ ಪರಿಶೋಧನೆಯ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವದಿದ್ದಲ್ಲಿ ತಮಗೆ ನಿಮ್ಮ ಪ್ರಮಾಣಿತ ಮಾಹಿತಿ , ತೂಕ ಹಾಗೂ ಆರೋಗ್ಯದ ಇತಿಹಾಸದ ಕೆಲವು ಮಾಹಿತಿ ಕೊಡಬೇಕಾಗುವುದು. ತದನಂತರ ನಿಮ್ಮನ್ನು ಅಲ್ಟ್ರಾಸೋನೋಗ್ರಾಫಿಕ್ ಪರಿವೀಕ್ಷಣೆಗೆ ಒಳಪಡಿಸಲಾಗುವುದು ಹಾಗೂ ಪ್ರಸ್ತುತಿಯ ನಂತರ ನಿಮ್ಮ ಮಗುವಿನ ಪ್ರಸ್ತೂತಿ ತೂಕವನ್ನು ದಾಖಲಿಸಿಕೊಳ್ಳಲಾಗುವುದು.

ಅಪಾಯ ಹಾಗೂ ಲಾಭಗಳು :

ಈ ಅಧ್ಯಯನಕ್ಕೆನುಗುಣವಾಗಿ ಇಲ್ಲಿ ಯಾವುದೇ ಅಪಾಯ ಇರುವುದಿಲ್ಲ.

ಗರ್ಭದ ಸರಿಯಾದ ತೂಕದ ಅಂದಾಜು ಮಾಡುವುದು ಮಗುವಿನ ಪ್ರಸ್ತೂತಿ ತೂಕವನ್ನು ಅಳತೆಮಾಡಲು ಸಹಾಯವಾಗುತ್ತದ ಹಾಗೂ ಅದರಿಂದ ಗರ್ಭಾವಸ್ಥೆ ಹಾಗೂ ಪ್ರಸ್ತೂತಿ ನಿರ್ವಹಣೆಯಲ್ಲಿ ಉಪಯುಕ್ತವಾಗುತ್ತದೆ.

ಪರ್ಯಾಯಗಳು: –

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದು ಐಚ್ಛಿಕವಾಗಿರುತ್ತದೆ. ತಾವು ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಪಾಲುಗೊಳ್ಳದೇ ಇರುವುದನ್ನು ಆಯ್ಕೆಮಾಡಬಹುದು ಅಥವಾ ಮುಂದೆ ಭಾಗವಹಿಸಲು ಇಚ್ಛಿಸಿದಲ್ಲಿ ನೀವು ನನ್ನ ಮನಸ್ಸನ್ನು ಬದಲಾಯಿಸಬಹುದು ಹಾಗೂ ಅಧ್ಯಯನದಿಂದ ಹಿಂಪಡೆಯುವುದು. ನಿಮ್ಮ ನಿರ್ಣಯವು ತಾವು ಪಡೆಯುವ ಈಗಿನ, ಅಥವಾ ಭವಿಷ್ಯದ ಆರೋಗ್ಯ ತಪಾಸಣೆಯಲ್ಲಿ ಬದಲಾಗುವುದಿಲ್ಲ. ಒಂದು ವೇಳೆ ತಾವು ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸದೇ ಇರಲು ಆಯ್ಕೆ ಮಾಡಿದಲ್ಲಿ, ತಾವು ತಮ್ಮ ಪರಿಸ್ಥಿತಿಗನುಸರಿಸಿ ಚಿಕಿತ್ಸೆ ಪಡೆಯುವಿರಿ.

ಏಕಾಂತತೆ ಹಾಗೂ ಗೌಪ್ಯತೆ

ಕಾನೂನಿನಂತರ್ಗತ ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ನಿಮ್ಮಿಂದ ಪಡೆದುಕೊಂಡ ಎಲ್ಲ ಮಾಹಿತಿಯನ್ನು ಗುಪ್ತವಾಗಿ ಇಡಲಾಗುವುದು. ಪರಿಶೋಧನಾ ದಾಖಲಾತಿಯಲ್ಲಿ ಕೋಡ ಸಂಖ್ಯೆಯು ನಿಮ್ಮನ್ನು ಗುರುತಿಸುವುದು. ಅಧ್ಯಯನದ ಬಗ್ಗೆ ಮಾಹಿತಿ ಪ್ರಕಟಿಸಲಾಗುವುದು ಆದರೆ ನಿಮ್ಮ ಗುರುತಿನ ಬಗ್ಗೆ ಪ್ರಕಟಣೆಯಲ್ಲಿ ಗುಪ್ತವಾಗಿರುವುದು.

ಸಂಸ್ಥೆ/ಪಾಯೋಜಕರ ನೀತಿ :

ಈ ಪರಿಶೋಧನೆಗೆ ಅನ್ವಯಿಸುವುದಿಲ್ಲ

ಭಾಗವಹಿಸುವುದು ಐಚ್ಛಿಕ/ ಹಿಂಪಡೆಯುವಿಕೆ:

ನಿಮ್ಮ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದು ಐಚ್ಛಿಕವಾಗಿರುತ್ತದೆ ಹಾಗೂ ತಾವು ಯಾವುದೇ ಸಮಯ ಅಧ್ಯಯನದಿಂದ ಹಿಂಪಡೆಯುವುದು.

ಭಾಗವಹಿಸಲು – ಆರ್ಥಿಕ ಬಟವಡೆ: –

ತಮಗೆ ಯಾವುದೇ ತರಹದ ಕೊಡುಗೆ ಅಥವಾ ಬಟವಡೆ ಕೊಡಲಾಗುವುದಿಲ್ಲ.

ಫಲಿತಾಂಶ ಪ್ರಕಟಣೆಗೆ ಅಧಿಕಾರ ನೀಡುವುದು:

ಅಧ್ಯಯನದ ಫಲಿತಾಂಶವನ್ನು ಕೆ.ಎಲ್.ಇ.ಯು ಯುನಿವರ್ಸಿಟಿಯ ಎಮ್.ಡಿ. ಡಿಗ್ರಿ ಮುಗಿಸಲು ಅವಲೋಕನ ಹಾಗೂ ಪ್ರಕಟಣೆಗಾಗಿ ಕಳುಹಿಸಲಾಗುವುದು.

ಪ್ರಶ್ನೆಗಳು :

ಅಧ್ಯಯನದ ಬಗ್ಗೆ ತಮ್ಮ ಏನಾದರೂ ಪ್ರಶ್ನೆಗಳಿದ್ದರೆ ಇವರನ್ನು ಸಂಪರ್ಕಿಸಿರಿ.

ಡಾ. ಅಪೂರ್ವಾ ಎಮ್. ಹಿರೇಮಠ
ಪರಿವೀಕ್ಷಕರು,
ಆಬ್ಸ್ಟೆಟ್ರಿಕ್ಸ್ ಹಾಗೂ ಗಾಯನೋಕೋಲಾಜಿಯಲ್ಲಿ ಪಿ.ಜಿ
ಜೆ.ಎನ್.ಎಮ್.ಸಿ. ಬೆಳಗಾವಿ
ಫೋನ್ ನಂ. 9964488168

DR.ANITA DALAL MD
ಪ್ರೋಫೆಸರ್
ಆಬ್ಸ್ಟೆಟ್ರಿಕ್ಸ್ ಹಾಗೂ ಗಾಯನೋಕೋಲಾಜಿ
ಜೆ.ಎನ್.ಎಮ್.ಸಿ. ಬೆಳಗಾವಿ
PH.NO. 9448140343

ನಿಮ್ಮ ಹಕ್ಕುಗಳ ಬಗ್ಗೆ ಯಾವುದೇ ಪ್ರಶ್ನೆ ಇದ್ದಲ್ಲಿ ಇವರನ್ನು ಸಂಪರ್ಕಿಸಿರಿ.

ಡಾ: ಗಂಗಾ ಪಿಳ್ಳೆ

ಚೇರಮನ್

ಜೆ.ಎನ್. ಎಂ.ಸಿ. ಎಥಿಕಲ್ ಕಮೀಟಿ ಫೋರ್ ಹ್ಯೂಮನ್ ರಿಸರ್ಚ ಪ್ರೋಪೇಸರ್ ಆಂಡ್ ಆಫ್ ಡಿಪಾರ್ಟಮೇಂಟ್ ಆಫ್ ಪ್ಯಾಥಾಲಾಜಿ

ಜೆ.ಎನ್. ಎಂ.ಸಿ.- ಬೆಳಗಾವಿ

ಫೋನ್ ನಂ. 0831-2471350,

ಎಕ್ಸಟೆನ್ಸ: 1527

ಸಹಮತಿ ಹೇಳಿಕೆ

ನಾನು ಕೆಳಗಿನ ರೇಷೆ ಮೇಲೆ ಹಸ್ತಾಕ್ಷರ ಮಾಡಿ ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಸ್ವ ಇಚ್ಛೆಯಿಂದ ಒಪ್ಪಿಲೊಳ್ಳುತ್ತೇನೆ. ನನ್ನ ಹಸ್ತಾಕ್ಷರವನ್ನು ನಾನು ಸಹಮತಿ ಹೇಳಿಕೆಯನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ಓದಿದ್ದು, ನನಗೆ ಓದಿ ತಿಳಿಸುದ್ದು ಹಾಗೂ ನನಗೆ ತಿಳಿಯುವ ಭಾಷೆಯಲ್ಲಿ ವಿವರಿಸಲಾಗಿದ್ದು, ಹಾಗೂ ನನ್ನ ಎಲ್ಲ ಪ್ರಶ್ನೆಗಳಿಗೆ ಸಮರ್ಪಕವಾಗಿ ಉತ್ತರ ಸಿಕ್ಕಿದ್ದರಿಂದ ಮಾಡಿರುತ್ತೇನೆ.

ನಾವು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಹಿಂಪಡೆಯಬಹುದು. ಈ ಹೇಳಿಕೆಗೆ ಹಸ್ತಾಕ್ಷರ ಮಾಡುವುದರಿಂದ ನಾನು ಯಾವುದೇ ಕಾಯ್ದೆಯ ಹಕ್ಕುಗಳನ್ನು ಬಿಟ್ಟು ಕೊಡುತ್ತಿಲ್ಲ. ಈ ಸಹಮತಿ ಫಾರ್ಮನ ಪ್ರತಿಯನ್ನು ಕೊಡಬೇಕು.

ಭಾಗವಹಿಸುವವರ ಹೆಸರು : .....

ಭಾಗವಹಿಸುವವರ ಹಸ್ತಾಕ್ಷರ

ಎಡ ಹೆಬ್ಬಟ್ಟಿನ ಮುದ್ರೆ : .....

ಸಾಕ್ಷಿದಾರರ ಹೆಸರು : .....

ಸಾಕ್ಷಿದಾರರ ಹಸ್ತಾಕ್ಷರ

ಎಡಹೆಬ್ಬಟ್ಟಿನ ಮುದ್ರೆ : .....

ಪರಿವೀಕ್ಷಕರ ಹೆಸರು : .....

ಪರಿವೀಕ್ಷಕರ ಹಸ್ತಾಕ್ಷರ : .....

ದಿನಾಂಕ: ಸ್ಥಳ :

सम्मती कळविण्याचे फॉर्म

गर्भाचे वजन शोधण्यासाठी समर्पक विविध अल्ट्रासोनोग्राफी सूत्र

एक वर्षाचा विशाला अध्ययन के.एल.ई.ज डॉ. प्रभाकर कोरे चारिटेबल हॉस्पिटल आणि एम.आर. सी बेळगांव .

अध्ययनाचे उद्धिष्ट आणि उद्देश :

या परिशोधन गर्भाचे वजन शोधण्यासाठी अल्ट्रासोनोग्राफीचे ४ विविध समीकरणाचे व्यवस्थिर अध्ययन आहे. या अध्ययनाचे प्रमुख परीक्षक म्हणून डॉ. अपूर्वा एम. हिरेमठ आणि डॉ. हेमा ए. धुमाळे मार्गदर्शक म्हणून असतील.

विधान :

आपणास या परिशोधनामध्ये भाग घेण्याचे असल्यास आपणास आपला प्रमाणित माहिती, वजन, आरोग्याचा इतिहासाचे काही माहिती देणेचे आहे. त्यानंतर आपणास अल्ट्रासोनोग्राफी परिक्षण केले जाईल व प्रसूतीतनंतर आपल्या बाळाचे प्रसूतीवजनाचा दाखल करुन घेण्याते येईल.

अपाय आणि लाभ :

या अध्ययनापासून इथे कुठलाही अपाय नाही गर्भाचे नक्की वजनाचा अंदाज करणे, बाळाचे प्रसूतीचा वेळेचा वजन माप करण्यास मदत होवो आणि त्याचाने गर्भावस्था आणि प्रसूती निर्वहणाला मदत होते.

पर्याय :

या अध्ययनामध्ये भाग घेणे ऐच्छिक आहे आपण या अध्ययनात न भाग घेण्याचे ठरवू शकता किंवा पुढे भाग घेण्यास इच्छुक असल्यास आपण माझे मन बदलू शकला आणि अध्ययनापासून वापस घेऊ शकाल. आपला निर्णय आपणाला मिळणाऱ्या अताचे किंवा भविष्यात आरोग्य तपासणीत बदल होणार नाही. एक वेळ आपण अध्ययनामध्ये भाग न होण्याचा ठरविल्यास आपण आपल्या परिस्थितीनुसार इलाज करुन घेता येईल.

एकांतता आणि गोपनीयता (गुप्त):-

कानूनचा अंतर्गत अध्ययनाचे वेळी आपणाकडून घेतलेल्या सर्व माहिती गुप्त ठेवण्यात येईल. परिशोधन दाखलात कोड, क्रमांक आपणास ओळखेल अध्ययनाबद्दल माहितीचे प्रकटन केला जाईल पण आपले ओळखबद्दल प्रकटनामध्ये गुप्त राहील.

संस्था/प्रायोजकांचे निती :-

या परिशोधनाला अन्वय होत नाही.

भाग घेणे ऐच्छिक/माघार घेणे :-

आपला अध्ययनामध्ये भाग घेणे औच्छिक आहे; आणि आपण कुठल्याही वेळी अध्ययनापासून माघार घेऊ शकता भाग घेण्यास आर्थिक प्रोत्साहन.

आपणास कुठल्याही प्रकारचे बक्षिस किंवा प्रोत्साहन धन दिले जाणार नाही.

फलितांश प्रकटनाला अधिकार देणे

अध्ययनाचे फलितांश के.एल.ई युनिवर्सिटीचा एम.डी.डिग्री पूर्ततेसाठी अवलोकन आणि प्रकटनासाठी पाठविले जाईल.

प्रश्न :

अध्ययनाबद्दल आपले जवळ कुठलेही प्रश्न असल्यास यांना संपर्क साधावे.

डॉ. अपूर्वा एम. हिरेमठ परीक्षक ॲब्सेट्रीक्स आणि गायनाकोलॉजी जे.एन.एम.सी बेळगांव फोन नं. **9964488168**	**DR.ANITA DALAL** MD प्राफसर ॲब्सेट्रीक्स आणि गायनाकोलॉजी जे.एन.एम.सी **PH.NO. 9448140343**

आपले हक्काबद्दल कुठलेही प्रश्न असल्यास, यांना संपर्क साधावे.

डॉ. गंगा पिळळी

चेअरमन

जेएनएमसी एथिकल कमिटी फॉर ह्यूमन रिसर्च

प्रोफेसर अँन्ड हेड ऑफ डिपार्टमेंट ऑफ पॅथालॉजी.

जेएनएमसी बेळगांव फोन नं. 0831-2471350 Extn1527

सहमती पत्र

मी खालील रेषेवर सही करुन या अध्ययनामध्ये स्वइच्छेने भाग घेण्यास सहमत आहे. सहमती पत्र माहिती मी संपूर्ण वाचून, मला समजणाऱ्या भाषेमध्ये वाचून कळविण्याने व माझे सर्व प्रश्नांचे समर्पक उत्तर मिळाल्याने मी सही केली आहे. मी कुठल्याही वेळी माघार घेऊ शकतो. खाली सही केल्यामुळे मी कुठल्याही कानूनी हक्क सोडून देत नाही आहे मला सहमती फॉर्मचा प्रत द्यावे.

भाग घेणाऱ्याचे नांव _____

भाग घेणाऱ्याची सही/ _____

डाव्या अंगठ्याचे मुद्रा

साक्षीदारांचे नांव : _____

साक्षीदाराची सही/ _____

डाव्या अंगठ्याचे मुद्रा

परीक्षकांचे नांव _____

परीक्षकांचे सही _____

तारीख **स्थळ:**

Serial number	IP/OP number	age	Weight	History			Obsterric History	Menstrual History					Per abdomen Examination			Previous Ultrasonography report																Date of delivery	Mode of delivery	Gestational age	Live/Still birth	Sex of the baby	Birth Weight of the baby	EFW ON SCAN
													Obstetric			Trimenster scan			Anomaly scan report				Trimester growth scan findings (1week prior to delivery)														
																							Cardiac activity														
				Amenorrhoea (months)	Pain abdomen	PV leak		Past menstrual cycles	LMP	EDD	Corrected EDD by dating scan	POG	Fundal height	Presentation	Relaxed/Contracting	FHS	CRL	Gestational age	Corrected EDD	AGA	Liquor	Anomalies	Other significant finding	BPD (Cms)	HC (Cms)	AC (Cms)	FL (Cms)	Liquor	AFI	Anomalies							
1	721776	24	62	9	N	N	G3A2	Regular	6/20/2015	3/26/2016	-	36 weeks	term size	cephalic	relaxed	+	-	-	-	-	-	-	-	93	331	340	70	A	14.3	nil	2/28/2016	PT elective LSCS	36 weeks	live	female	2.95	3.201
2	719536	36	58	8	N	N	G3P2L1	Regular	6/18/2015	3/24/2015	-	34	34		relaxed	+	7mm	7w1d		24w 3d	7.1	nil	nil	94	334	323	70	A	15.7	nil	2/17/2016	PT elective LSCS	34w 5d	live	female	3.07	2.974
3	712564	27	65	8	N	N	PRIMIGRAVIDA	Regular	4/24/2015	1/29/2016	-	34	34	cephalic	relaxed	+	-	-	-	-	-	-	-	85	298	319	66	A	12.4	nil	12/18/2015	PT elective LSCS	34	live	female	2.4	2.535
4	713259	23	58	9	N	N	G3P1L1A1	Regular	4/24/2015	1/31/2016	-	37w4d	32 weeks	cephalic	relaxed	+	-	9w	-	26w	N	NIL	NIL	88	319	267	70	Less	6	nil	1/13/2016	FTVD	37w4d	live	male	2.2	2.166
5	713387	24	54	9	Y	N	G6P1A1L1	Regular	5/7/2015	2/11/2016	-	35w6d	36	cephalic	irritable	+	12.2	7w6d	-	-	-	-	-	87	314	315	70	A	15	nil	1/14/2015	PT emerg LSCS	36w	live	male	2.2	2.693
7	707863	35	79	9	N	N	G2P1L1	Regular	4/1/2015	1/8/2016	-	37w5d	term	cephalic	relaxed	+	2.9	9w5d	-	-	-	-	-	86	327	322	72	A	12.2	nil	12/16/2015	FT emerg LSCS	37w5d	live	female	2.7	2.891
8	708286	33	66	9	N	N	G2A1	Regular	3/30/2015	04/012016	-	37w1d	term	cephalic	relaxed	+	-	-	-	-	-	-	-	87	318	288	73	A	10	nil	12/16/2015	FT elective lscs	37w1d	live	female	2.6	2.487
9	704353	22	61	9	N	N	G3P2L1	Regular	3/24/2015	12/29/2015	-	38	TERM	cephalic	relaxed	+	-	-	-	-	-	-	-	86	318	303	66	A	7.9	nil	12/17/2015	FT elective lscs	38	live	male	2.6	2.417
10	722921	24	70	9	N	Y	G2A1	Regular	6/6/2015	3/12/2016	3/19/2016	37W6D	TERM	cephalic	relaxed	+	72	13W2D	3/19/2016	19W5D	N	NIL	NIL	93	333	337	69	A	10.1	nil	3/5/2016	FT emerg LSCS	37w6d	live	male	3.2	3.132
11	728855	21	62	8	Y	Y	G2P1L1	Regular	12/082015	5/18/2016	-	34	32	cephalic	relaxed	+	-	-	-	24w 3d	N	NIL	NIL	88	316	297	68	LESS	6	nil	4/6/2016	PT Emerg LSCS	34	live	male	2.25	2.422
12	728151	31	64	9	Y	N	PRIMIGRAVIDA	Regular	7/17/2015	4/22/2016	-	37	TERM	cephalic	relaxed	+	-	7w	-	19W5D	N	nil	nil	95	322	314	70	N	14.2	nil	4/2/2016	FT emg LSCS	37	live	female	2.7	2.809
13	704563	28	60	9	N	N	G2P1L0	Regular	8/11/2015	17/052016	-	36w6d	term	cephalic	relaxed	+	-	-	-	-	-	-	-	90	329	323	69	excess	17.3	nil	4/25/2016	PT elec LSCS	36w6d	live	female	2.8	2.866
14	756334	26	64	9	N	N	PRIMIGRAVIDA	Regular	unknown	-	5/30/2016	39W4D	term	cephalic	relaxed	+	50mm	11w5d	-	21w	N	nil	nil	101	351	350	72	excess	18.8	nil	5/27/2016	FT elective LSCS	39W3D	LIVE	MALE	3.7	4
15	756676	26	69	9	N	N	G3P1A1L0		unknown	-	6/9/2016	35W6D	PRETERM	cephalic	relaxed	+	76mm	13w4d	6/9/2016	20w	N	nil	nil	88	317	310	69	excess	20	nil	5/17/2016	PT elec LSCS	35w	live	male	2.9	2.621
18	741288	21	58	9	N	N	PRIMIGRAVIDA		9/1/2015	6/7/2016	-	41	term	cephalic	relaxed	+	-	-	-	-	-	-	-	92	330	332	69	A	16.9	nil	16062016	FTND	40w3d	LIVE	MALE	3.2	3.028
19	793882	27	56	9	N	N	G4P3L2	Regular	11/4/2015	8/10/2015	7/11/2016	37	TERM	cephalic	RELAXED	+	-	-	-	30	N	nil	nil	89	329	322	72	A	12	nil	6/26/2016	FT emerg lscs	37w	live	female	3.1	2.939
20	741588	19	58	9	N	N	PRIMIGRAVIDA	Regular	9/18/2015	6/25/2016	6/25/2016	36W6D	TERM		RELAXED	+	46	9W	7/4/2016	-	-	-	-	93	333	329	73	A	8.9	nil	6/21/2016	FTVD	38	live	female	3.2	3.144
21	744687	29	70	9	N	N	PRIMIGRAVIDA	Regular	unknown	-	6/26/2016	39W5D	TERM	CEPHALIC	RELAXED	+	55	9W	6/26/2016	35	N	NIL	NIL	92	336	357	71	A	11.8	NIL	6/24/2016	FT EMG LSCS	39W3D	LIVE	MALE	3.3	3.265
23	726357	31	65	9	N	N	PRIMIGRAVIDA	Regular	7/23/2015	4/28/2016	-	38W	TERM	CEPHALIC		+	-	-	-	27	N	NIL	NIL	95	329	335	72	A	14.2	NIL	13/042016	FT elec LSCS	38	LIVE	MALE	2.7	3.21
24	729637	23	62	9	N	N	G2P1L1	Regular	7/20/2015	4/25/2016	-	38W	TERM	cephalic	RELAXED	+	62	11	-	22	N	NIL	NIL	94	327	320	73	A	9	NIL	4/20/2016	FT ELEC LSCS	38	LIVE	FEMALE	3	3.004
25	731328	23	58	9	N	N	PRIMIGRAVIDA	Regular	7/25/2015	4/30/2016	-	39W3D	term	breech	RELAXED	+	67	11	-	20	N	NIL	NIL	93	331	338	81	A	11.6	NIL	4/27/2016	FT ELEC LSCS	39		female	3.1	3.539
26	719423	20	59	9	N	N	PRIMIGRAVIDA	Regular	7/2/2015	4/7/2016	4/21/2016	40W5D	TERM	CEPHALIC	RELAXED	+	-	-	-	-	-	-	-	89	334	328	71	A	13	NIL	4/27/2016	FTND	40w3d	LIVE	FEMALE	2.6	3.01
27	760588	25	60	9	N	N	PRIMIGRAVIDA	Regular	12/26/2015	10/1/2016	-	37W	TERM	cephalic	REL	+	72	12	-	21	N	NIL	NIL	87	293	310	64	polyhydramnios	26.5	nil	9/16/2016	FT emg lscs	37w5d	live	female	2.3	2.365
28	759310	31	64	9	N	N	g2p1l1	Regular	11/21/2015	8/27/2015	-	39w	term	cephalic	relaxed	+	-	-	-	-	-	-	-	91	335	348	73	A	8	nil	9/6/2016	FT emg lscs	39	live	female	2.9	3.406
29	752761	27	65	9	N	N	PRIMIGRAVIDA	Regular	11/12/2015	8/18/2016	-	38	term	cephalic	relaxed	+	82	13	-	22	N	NIL	NIL	106	358	363	70	polyhydramnios	28.2	nil	8/9/2016	FT emg LSCS	37	live	female	3.6	3.797
30	752404	24	54	9	N	N	PRIMIGRAVIDA	Regular	11/1/2015	8/7/2016	-	39	TERM	cephalic	relaxed	+	56mm	12	2/6/2016	-	-	-	-	91	329	333	69	A	13	nil	8/3/2016	FTND	39	live	female	2.8	3.024
31	719950	29	61	9	N	N	G4P2L1	Regular	2/5/2016	11/11/2016	-	39	term	cephalic		+	62	11	-	19	N	NIL	NIL	91	331	315	73	A	8	nil	11/5/2016	FT elec lscs	39	live	male	3.1	2.914
33	762561	19	65	9	N	N	G4P2L2A1	Regular	1/3/2016	10/9/2016	-	37	term	cephalic		+	-	-	-	-	-	-	-	99	354	360	71	A	12	nil	9/24/2016	FT emg lscs	37	live	male	3.5	3.791
34	752498	19	63	8	N	N	PRIMIGRAVIDA	Regular	4/12/2015	1/17/2016	-	34	preterm	cephalic	relaxed	+	-	-	-	24	N	NIL	NIL	79	305	269	63	A	14	nil	12/10/2015	PTVD	34w 5d	live	female	1.9	1.849
35	269742	22	55	9	N	N	PRIMIGRAVIDA	Regular	1/2/2016	10/8/2016	-	38	term	cephalic	relaxed	+	46	10	-	-	-	-	-	87	315	301	71	less	7	nil	9/24/2016	FTND	38	live	male	2.3	2.557
36	768321	25	58	8	N	N	PRIMIGRAVIDA	Regular	1/8/2016	10/15/2016	-	37	term	cephalic	relaxed	+	72	12	-	20	N	NIL	NIL	97	333	324	76	A	12	nil	10/16/2016	FTND	37	live	female	2.9	2.594
37	763890	21	60	9	N	N	g4	Regular	11/3/2015	8/10/2015	-	36	36	cephalic	relaxed	+	77	11	-	21	N	NIL	NIL	92	354	326	71	A	10	nil	8/12/2016	PTVD	36	live	female	2.7	3.001
38	776220	20	45	9	N	Y	PRIMIGRAVIDA	Regular	2/16/2016	11/22/2016	-	40	term	cephalic		+	-	-	-	27	LESS	NIL	NIL	94	324	321	72	less	7	nil	11/10/2016	FTND	40	live	male	2.8	2.866
40	753897	24	53	8	N	N	PRIMIGRAVIDA	Regular	1/22/2016	10/30/2016	-	37	term	cephalic	relaxed	+	73	12	-	22	N	NIL	NIL	99	307	326	69	A	12	nil	10/9/2016	FT emglscs	37	live	male	3.1	3.064
41	778561	32	65	9	N	N	g2p1l1	Regular	1/10/2016	10/29/2016	-	41	term	cephalic	relaxed	+	34	9	-	24	n	nil	nil	104	310	325	71	Less	6	nil	11/5/2016	FTND	41	live	male	3	3.256
42	764636	31	54	9	N	Y	PRIMIGRAVIDA	Regular	4/16/2015	1/21/2016	-	39	term	cephalic	contracting	+	76	13	-	-	-	-	-	74	298	316	72	A	11	nil	1/15/2016	ftnd	39	live	female	2.9	3.027
45	759326	27	53	9	N	N	PRIMIGRAVIDA	Regular	7/21/2016	4/26/2016	-	39	term	cephalic	relaxed	+	-	-	-	-	-	-	-	94	365	303	73	A	12	nil	4/20/2016	ftnd	39	live	female	2.7	2.599
46	773624	22	57	9	N	N	g3p1l1a1	Regular	4/14/2016	1/21/2016	-	38	term	cephalic	relaxed	+	68	12	-	22	N	NIL	NIL	85	372	299	79	A	8	nil	1/8/2016	ftem	38	live	male	3	3.278
47	798546	26	60	9	N	N	PRIMIGRAVIDA	Regular	2/10/2016	11/18/2016	-	37	term	cephalic	relaxed	+	73	13	-	21	N	NIL	NIL	97	310	322	78	A	13	nil	11/4/2016	ftvd	37	live	male	3.2	3.34
48	789543	30	45	9	N	N	g2p1l1	Regular	5/25/2016	12/1/2016	-	39	term	cephalic	contracting	+	-	-	-	-	-	-	-	99	321	324	74	A	12	nil	11/26/2016	ftemglscs	39	live	female	3	2.999
49	760549	30	55	9	N	Y	g3p2l2	Regular	12/12/2015	9/18/2016	-	39	term	cephalic	relaxed	+	-	-	-	-	-	-	-	95	310	331	77	A	10	nil	9/10/2016	ftemglscs	39	live	female	2.9	2.84
50	779234	29	58	9	N	N	g2a1	Regular	2/1/2016	11/10/2016	-	38	term	cephalic	contracting	+	58	11	-	21	N	NIL	NIL	94	328	315	79	A	12	nil	10/29/2016	ftvd	38	live	male	2.7	2.659
51	779564	24	67	9	N	Y	PRIMIGRAVIDA	Regular	2/26/2016	12/4/2016	-	39	term	cephalic	contracting	+	-	-	-	-	-	-	-	99	322	318	69	A	13	nil	11/27/2016	ftemglscs	39	live	male	2.8	2.999
53	754770	27	61	9	N	N	PRIMIGRAVIDA	Regular	1/5/2016	10/14/2016	-	40	term	cephalic	relaxed	+	-	-	-	26	N	NIL	NIL	97	304	311	68	A	10	nil	10/14/2016	ftvd	40	live	male	3.1	3.456
54	763249	23	61	9	Y	Y	g3p1l1a1	Regular	1/13/2016	10/20/2016	-	39	term	cephalic	relaxed	+	72	12	-	20	N	NIL	NIL	100	356	371	72	A	11	nil	10/13/2016	ftnd	39	live	female	3.2	3.222
55	779028	26	70	9	N	N	g2p1l1	Regular	12/26/2016	9/5/2016	-	38	term	cephalic	contracting	+	-	-	-	22	N	NIL	NIL	97	292	321	77	A	14	nil	8/23/2016	fteleclscs	38	live	female	2.8	2.943
56	749055	28	54	9	y	N	g2p1l1	Regular	12/22/2015	10/31/2016	-	38	term	cephalic	relaxed	+	66	11	-	34	N	NIL	NIL	91	354	357	74	A	12	nil	10/16/2016	ftemglscs	38	live	female	3.1	3.065
57	773314	31	53	9	N	N	g3p2l1	Regular	3/8/2016	12/13/2016	-	40	term	cephalic	contracting	+	77	13	-	23	N	NIL	NIL	92	329	306	71	less	6	nil	12/14/2016	ftvd	40	live	male	2.9	3.2
58	789264	21	59	9	y	N	PRIMIGRAVIDA	Regular	1/4/2016	10/10/2016	-	36	TERM	cephalic	RELAXED	+	-	-	-	-	-	-	-	87	312	310	71	A	13	NIL	9/20/2016	ptvd	37	live	female	2.8	2.655
59	798431	24	59	9	Y	Y	G3A2	Regular	5/4/2016	2/8/2016	-	38	TERM	cephalic	contracting	+	45	11	-	-	-	-	-	79	355	329	70	A	14	nil	1/30/2017	FTEMGLSCS	38	live	FEMALE	3.2	3.089
60	784220	19	53	9	Y	N	G3P1L1A1	Regular	4/30/2016	2/4/2016	-	38	TERM	breech	RELAXED	+	39	9	-	26	N	NIL	NIL	97	335	314	70	A	8	nil	1/25/2017	ftemglscs	38	live	male	2.7	2.889
61	794091	21	64	9	Y	Y	G2P1L1	Regular	04/052016	2/8/2016	-	37	TERM	cephalic	RELAXED	+	72	12	-	24	N	NIL NIL 97	NIL	101	335	322	722	A	12	NIL	1/23/2017	FTEMGLSCS	37	live	male	3	3.256
62	798647	20	54	9	Y	N	PRIMIGRAVIDA	Regular	4/4/2016	1/10/2107	-	41	TERM	cephalic		+	-	-	-	-	-	-	-	93	327	338	68	A	10	NIL	1/18/2017	FTVD	41	live	FEMALE	3.5	3.089
63	783004	20	58	9	N	N	PRIMIGRAVIDA	Regular	4/8/2016	1/13/2017	-	41	TERM	cephalic	RELAXED	+	54	13	-	-	-	-	-	94	335	334	67	A	9	NIL	1/14/2017	FTEMGLSCS	41	live	FEMALE	3	3.156
66	801321	22	64	9	N	N	g2	Regular	6/23/2016	3/30/2017	-	38	term	cephalic	RELAXED	+	-	-	-	19	N	NIL	NIL	89	324	341	71	A	10	NIL	1/21/2017	ftvd	38	live	male	2.9	3.153
67	795904	24	58	9	N	N	PRIMIGRAVIDA	Regular	7/2/2016	4/8/2017	-	37	TERM	cephalic	contracting	+	89	13	-	21	N	NIL	NIL	91	344	325	70	A	12	nil	3/24/2017	FTVD	37	live	MALE	2.6	2.932
68	810412	26	62	9	Y	N	G4P1L1A2	Regular	9/11/2016	6/18/2017	-	39	TERM	cephalic	relaxed	+	58	12	-	20	N	NIL	NIL	93	338	344	71	A	14	NIL	6/18/2017	FTEMGLSCS	40	live	MALE	3.15	3.329
69	798438	21	60	8	N	N	G2P1L1		8/12/2016	5/19/2017	-	34	36	cephalic	relaxed	+	-	-	-	-	-	-	-	81	311	292	63	A	9	NIL	4/8/2017	PTEMGLSCS	34	live	MALE	1.73	2.124
70	802647	24	59	9	N	N	G3P2L2		6/26/2016	4/2/2017	-	38	TERM	cephalic	contracting	+	-	-	-	24	N	NIL	NIL	88	334	339	69	A	N	NIL	3/26/2017	FTVD	39	live	MALE	2.9	3.093
71	801240	22	68	9	N	N	PRIMIGRAVIDA	Regular	7/24/2016	4/30/2017	-	38	TERM	cephalic	RELAXED	+	78	13	-	22	N	NIL	NIL	88	331	320	70	A	10	NIL	4/22/2017	FTVD	38	live	FEMALE	2.6	2.84
73	803002	24	56	9	N	N	PRIMIGRAVIDA	Regular	8/5/2016	5/12/2017	-	38	TERM	cephalic	RELAXED	+	46	12	-	21	N	NIL	NIL	84	293	315	70	A	12	NIL	5/3/2017	FTND	38	live	FEMALE	1.9	2.5
74	799988	24	62	9	N	N	G3O1	Regular	6/25/2016	4/1/2017	-	39	TERM	cephalic	relaxed	+	84	13	-	20	N	NIL	NIL	85	340	337	71	A	11	NIL	3/29/2017	FTEMGLSCS	39	live	FEMALE	3.3	3.109
75	810083	26	59	9	N	N	G2P1L1	Regular	9/16/2016	6/23/2016	-	39	TERM	cephalic	RELXED	+	29	8	-	27	N	NIL	NIL	93	328	332	70	A	11	NIL	5/16/2017	FTELECLSCS	39	live	FE	3.1	3.065
76	4292995	21	62	9	N	N	G3A2	Regular	7/16/2016	4/22/2017	-	39	TERM	cephalic	contracting	+	-	-	-	25	N	Nil	nil	98	342	344	73	A	N	NIL	4/23/2017	FTVD	40	live	MALE	3.44	3.496
77	794798	21	56	9	N	N	PRIMIGRAVIDA	Regular	7/10/2016	4/11/2016	-	40	TERM	cephalic	contracting	+	47	11	-	19	N	nil	nil	99	341	341	73	A	12	NIL	4/22/2017	FTND	40	live	MALE	3.2	3.459

				History				Menstrual History					Per abdomen Examination				Previous Ultrasonography report																					
													Obstetric				Trimenster scan			Anomaly scan report				Trimester growth scan findings (1week prior to delivery)													
																								Cardiac activity													
Serial number	IP/OP number	age	Weight	Amenorrhoea (months)	Pain abdomen	PV leak	Obstertric History	Past menstrual cycles	LMP	EDD	Corrected EDD by dating scan	POG	Fundal height	Presentation	Relaxed/Contracting	FHS	CRL	Gestational age	Corrected EDD	AGA	Liquor	Anomalies	Other significant finding	BPD (Cms)	HC (Cms)	AC (Cms)	FL (Cms)	Liquor	AFI	Anomalies	Date of delivery	Mode of delivery	Gestational age	Live/Still birth	Sex of the baby	Birth Weight of the baby	EFW ON SCAN
78	749826	21	56	9	N	N	G4P3L1D2	Regular	8/23/2016	5/30/2017	-	34	TERM	cephalic	RELAXED	+	36	10	-	20	N	nil	nil	89	323	319	64	A	9	NIL	4/19/2017	PTEMGLSCS	34	live	MALE	2.4	2.616
79	795682	20	62	9	N	N	PRIMIGRAVIDA	Regular	7/23/2016	4/29/2017	-	37	TER	cephalic	RELAXED	+	79	13	-	24	N	nil	nil	91	316	305	71	A	14	NIL	4/12/2017	FTND	37	live	FEMALE	2.6	2.654
80	798641	22	56	9	N	N	PRIMIGRAVIDA	Regular	7/25/2016	4/1/2017	-	41	TERM	cephalic	RELAXED	+	39	10	-	-	-	-	-	91	316	301	71	A	10	NIL	4/9/2017	FTND	41	MALE	FEMALE	2.8	2.654
81	801156	26	58	9	N	N	PRIMIGRAVIDA	Regular	7/4/2016	4/17/2017	-	38	TERM	breech	RELAXED	+	56	12	6/28/2016	22	N	nil	nil	92	335	303	71	A	N	NIL	6/15/2016	FT emg lscs	38	live	MALE	2.7	2.715
82	798608	25	50	8	N	N	PRIMIGRAVIDA	Regular	8/12/2016	5/19/2017	-	34	PRETERM	cephalic	RE	+	-	-	-	-	-	-	-	82	276	283	58	A	12	NIL	4/7/2017	PTEMGLSCS	34	live	FEMALE	1.8	1.999
83	7998884	32	68	9	N	N	PRIMIGRAVIDA	Regular	7/20/2016	26/04.2017	-	38	TERM	cephalic	RELAXED	+	54	13	-	23	N	nil	nil	92	331	312	69	A	8	NIL	4/19/2017	FTEMGLSS	39	live	MALE	2.8	2.748
84	794693	18	58	8	N	N	PRIMIGRAVIDA	Regular	9/20/2016	7/12/2017	-	31	PRETERM	cephalic	contracting	+	65	10	-	20	N	nil	nil	77	286	235	49	A	9	NIL	8/15/2016	PTVD	31	live	MALE	1.4	1.142
86	774036	22	53	9	N	N	G2	Regular	5/15/2016	28/112016	-	37	TERM	cephalic	RE	+	43	9	-	21	N	NIL	NIL	86	306	276	68	A	8	NIL	12/2/2016	FTEMGLSCS	37	live	FEMALE	2	2.134
87	774769	29	62	9	N	N	PRIMIGRAVIDA	Regular	13/032016	12/20/2016	-	36	36	cephalic	RE	+	56	12	-	20	N	NIL	NIL	82	316	285	65	A	N	NIL	11/29/2016	PTEMGLSCS	36	live	FEMALE	2.1	2.132
88	779070	23	61	9	N	N	PRIMIGRAVIDA		3/30/2016	1/4/2017	-	38	TERM	cephalic	RELAXED	+	67	12	-	-	-	-	-	93	337	317	72	LESS	6	NIL	12/22/2016	FTEMGLSCS	38	live	FEMALE	2.6	2.958
89	783001	26	58	9	N	Y	G2P1L1	Regular	4/21/2016	1/26/2017	-	38	TERM	cephalic	RE	+	78	13	-	23	N	EXCESS	NIL	94	338	366	69	excess	21	NIL	1/13/2017	FTEMGLSCS	38	live	MALE	3.4	3.659
90	782973	26	61	9	N	N	G3P1L1A1	Regular	4/18/2016	1/23/2017	-	38	TERM	cephalic	RELAXED	+	-	-	-	25	N	NIL	NIL	82	311	335	73	A	10	NIL	1/14/2017	FTVD	38	live	FEMALE	2.8	2.954
91	727806	22	52	9	n	N	N	Regular	unknown	12/7/2017	12/7/2017	37	term cephalic	cephalic	relaxed	+	-	-	-	23	N	NIL	NIL	91	301	311	67	A	11	nil	11/16/2016	Ftelec lscs	37	live	male	2.4	2.541
92	800321	21	56	9	N	N	G2PQL0	Regular	3/10/2016	12/17/2016	-	36	PRETERM	cephalic	contracting	+	30	8	-	21	N	NIL	NIL	87	322	332	41	A	10	nil	11/4/2016	PT emglscs	36	live	male	3	2.986
93	800777	20	61	9	N	N	g3p2l2	Regular	6/12/2016	12/18/2016	-	36	pretem	cephalic	relaxed	+	17	7	-	-	-	-	-	87	331	342	81	A	12	nil	4/26/2016	PTemglscs	36	live	male	3.2	3.124
94	433677	36	52	9	N	N	PRIMIGRAVIDA	Regular	7/25/2016	5/1/2017	-	39	TE	cephalic	RE	+	-	-	-	18	N	NIL	NIL	89	335	328	69	A	13	nil	4/25/2017	FTemglscs	39	live	female	2.5	2.544
95	4441970	21	56	9	N	N	g2p1l1	Regular	7/31/2016	5/7/2017	-	38	rm	cephalic	relaxed	+	22	6	-	-	-	-	-	81	307	316	69	A	13	nil	4/24/2017	FT emglscs	38	live	male	2.65	2.85
96	764556	23	56	8	N	N	G4P3L1D2		3/7/2016	12/12/2016	-	33	preterm	cephalic	relaxed	+	46	10	-	20	N	NIL	NIL	78	293	276	63	A	12	nil	10/19/2016	PTVD	33	feamle	female	2.2	2.248
97	764660	26	61	8	N	N	PRIMIGRAVIDA		3/9/2016	12/15/2016	-	33	PRETERM	cephalic	RELA	+	-	-	-	24	N	NIL	NIL	78	282	245	58	A	9	nil	10/17/2016	PTEMGLSCS	33	live	female	1.4	1.433
98	756456	27	57	9	N	N	G3P2L2		7/15/2016	4/21/2017	-	37	term	breech	relaxed	+	77	13	-	23	N	NIL	NIL	91	334	334	67	A	11	nil	4/6/2017	FTEMGLSCS	37	live	female	3.2	2.999
99	801881	32	58	9	N	N	PRIMIGRAVIDA	Regular	6/17/2017	3/24/2017	-	40	TERM	cephalic	RELAXED	+	61	12	-	22	N	LESS	NIL	88	318	339	79	LESS	6.6	NIL	3/28/2017	FTEMGLSCS	40	live	MALE	2.8	3.333
101	785231	27	64	9	N	N	PRIMIGRAVIDA	Regular	5/24/2017	2/28/2017	-	40	TERM	cephalic	relaxed	+	-	-	-	26	N	NIL	NIL	92	335	336	73	A	12	NIL	3/4/2017	FTVD	40	LIVE	MALE	3.4	3.57
102	790505	22	62	9	N	N	PRO	Regular	2/14/2017	2/14/2016	-	41	TERM	cephalic		+	25	7	-	23	N	NIL	NIL	97	303	322	73	A	12	NIL	4/24/2017	FTEMGLSCS	40	live	male	3.2	3.189
103	791630	28	59	9	N	N	PRIMIGRAVIDA	Regular	5/12/2016	2/16/2017	-	38	term	cephalic		+	29	6	-	-	-	-	-	89	334	324	71	A	11	nil	3/4/3017	FTEMG	38	live	female	2.8	3.112
104	792056	31	63	9	N	N	Prmi	Regular	6/7/2016	3/14/2017	-	38	term	cephalic		+	56	10	-	-	-	-	-	97	344	340	76	A	10	nil	3/8/2017	FTEMGLSCS	38	live	MALE	3.4	3.5
106	790492	25	56	9	N	N	PRIMIGRAVIDA	Regular	5/17/2016	2/21/2017	-	40	TERM	cephalic	contracting	+	76	11	-	26	N	NIL	NIL	87	303	323	741	A	11.6	NIL	2/24/2017	FTEMGLSCS	40	live	MALE	2.4	2.367
107	785923	34	58	9	N	N	PRIMIGRAVIDA	Regular	5/15/2016	2/19/2017	-	38	TERM	cephalic	relaxed	+	38	6	-	22	N	NIL	NIL	95	355	349	79	A	11	NIL	2/13/2017	FTEMGLSCS	39	live	MALE	3.95	4.1
108	789893	20	61	9	N	N	PRIMIGRAVIDA	Regular	5/17/2016	2/21/2017	-	40	TERM	cephalic	relaxed	+	44	9	-	21	N	NIL	NIL	81	306	293	65	A	8.5	nil	2/22/2017	FTEMGLSCS	40	live	female	2	1.94
109	788160	33	60	8	Y	N	G6P5	Regular	6/25/2016	4/1/2017	-	33	34	cephalic	RE	+	-	-	-	20	N	NIL	NIL	78	274	301	58	A	9	nil	2/12/2107	PTEMGLSCS	33	LIVE	male	2.2	2.42
110	788183	26	56	9	Y	N	PRIMIGRAVIDA	Regular	5/10/2017	4/14/2017	-	39	TERM	cephalic	relaxed	+	-	-	-	23	N	NIL	NIL	96	348	320	68	A	10.5	NIL	2/12/2017	FTEMGLSCS	39	live	MALE	3.1	3.03
111	801156	29	58	9	Y	Y	PRIMIGRAVIDA	Regular	7/11/2016	1/17/1900	-	41	TERM	cephalic	contracting	+	35	10	-	21	N	NIL	NIL	91	319	331	73	A	10	NIL	4/22/2017	FTND	41	LIVE	MALE	2.7	2.754
112	764556	25	56	8	Y	N	G4P3L1D2		2/26/2016	12/2/2016	-	33	PRETERM	cephalic	RELAXED	+	-	-	-	22	N	NIL	NIL	78	293	276	63	A	12	nil	10/19/2016	PTVD	33	Live	FEMALE	1.8	1.784
113	800777	25	61	9	Y	N	G3P2L2	Regular	8/16/2016	5/23/2017	-	36	36	cephalic	RELAXED	+	-	-	-	24	N	OLIGO	NIL	82	296	302	67	LESS	7	NIL	4/26/2017	PTEMGLSCS	36	LIVE	FEMALE	2.05	1.94
114	775582	24	54	9	y	y	G2A1	Regular	3/7/2016	12/12/2016	-	40	term	cephalic	relaxed	+	34	9	-	22	N	NIL	NIL	94	331	328	74	oligo	5	nil	12/5/2016	FTEMGLSCS	41	LIVE	MALE	3	3.169
115	774963	28	70	9	Y	N	PRIMIGRAVIDA	Regular	4/14/2016	1/19/2017	-	37	TERM	cephalic	RELAXED	+	-	-	-	27	N	EXCESS	NIL	85	338	350	67	excess	19.9	NIL	1/12/2017	FTELECLSCS	38	LIVE	FEMALE	3.1	3.177
116	749261	21	63	9	Y	N	G2P1L1	Regular	4/12/2016	1/17/2017	-	38	TERM	cephalic	RELAXED	+	-	-	-	24	N	NIL	NIL	85	307	301	78	polyhydramnios	25	NIL	1/12/2017	FTELECLSCS	39	LIVE	FEMALE	2.8	2.75
117	776631	27	65	9	Y	Y	PRIMIGRAVIDA	Regular	1/1/2016	10/7/2016	-	34	34	cephalic	RELAXED	+	59	12	-	22	N	NIL	NIL	87	322	294	67	A	13.6	NIL	8/28/2016	PTVD	34	LIVE	FEMALE	2.4	2.364
118	745969	19	62	9	Y	N	PRIMIGRAVIDA	Regular	11/6/2015	8/12/2016	-	38	TERM	cephalic	contracting	+	53	13	-	-	-	-	-	89	326	321	78	A	11.4	NIL	8/6/2016	FTVD	38	LIVE	MALE	2.9	3.121
119	749631	27	62	9	Y	N	G2P1L1	Regular	12/2/2015	9/7/2016	-	36	36	cephalic		+	-	-	-	21	N	NIL	NIL	90	319	293	70	A	9	NIL	8/20/2016	FTELECLSCS	37	LIVE	MALE	2.6	2.473
120	817173	25	62	9	Y	Y	PRIMIGRAVIDA	Regular	10/4/2016	7/11/2017	-	40	TERM	cephalic		+	89	13	-	20	N	NIL	NIL	98	319	309	66	A	9.6	NIL	7/17/2017	FTEMGLSCS	40	LIVE	MALE	2.7	2.7
121	817811	20	63	9	Y	N	PRIMIGRAVIDA	Regular	11/8/2016	8/15/2017	-	36	36	cephalic	contracting	+	-	-	-	22	N	NIL	NIL	83	306	301	60	A	8	NIL	7/19/2017	PTVD	36	LIVE	FEMALE	2.1	2.1
122	817941	22	57	9	Y	N	G2P1L1	Regular	10/21/2016	7/28/2017	-	38	term cephalic	cephalic	contracting	+	51	12	-	23	N	NIL	NIL	93	344	320	70	A	8.5	NIL	7/19/2017	FTEMGLSCS	38	LIVE	FEMALE	2.8	2.9
123	817909	37	68	9	Y	N	PRIMIGRAVIDA	Regular	9/27/2016	7/4/2017	-	42	TERM	cephalic	RELAXED	+	87	13	-	-	-	-	-	85	336	327	70	A	9	NIL	7/20/2017	FTVD	42	LIVE	FEMALE	2.76	2.887
124	817892	28	58	9	Y	N	G2P1L1	Regular	10/8/2016	7/15/2017	-	41	TERM	cephalic	RE	+	-	-	-	25	N	NIL	NIL	90	335	331	73	A	11.5	nil	7/20/2017	FTVD	40	LIVE	FEMALE	3	2.94
125	817882	20	55	9	Y	N	PRIMIGRAVIDA	Regular	10/9/2016	7/16/2017	-	40	TERM	cephalic	RELAXED	+	31	8	-	23	N	NIL	NIL	904	335	331	73	A	12	NIL	7/19/2017	FTND	40	LIVE	FEMALE	2.94	2.845
126	764457	19	58	9	Y	Y	G2P1L1	Regular	1/6/2016	10/12/2016	-	38	TERM	CEPHALIC	RELAXED	+	28	6	-	22	N	NIL	NIL	85	308	303	75	LESS LIQUOR	7.1	NIL	10/3/2016	FTEMGLSCS	38	LIVE	MALE	2.63	2.892
127	765220	22	58	9	Y	N	PRIMIGRAVIDA	Regular	1/6/2016	10/12/2016	-	39	TERM	CEPHALIC	RELAXED	+	73	12	-	21	N	NIL	NIL	89	303	298	72	A	9.4	NIL	10/6/2016	FTVD	39	LIVE	FEMALE	2.7	2.744
128	815775	23	66	9	Y	Y	PRIMIGRAVIDA	Regular	10/4/2016	7/11/2017	-	39	TERM	CEPHALIC	RELAXED	+	-	-	-	20	N	NIL	NIL	90	333	352	76	LESS	5.5	NIL	7/12/2017	FTND	40	LIVE	FEMALE	2.9	2.75
129	817180	25	54	9	Y	Y	G3P1L1A1	Regular	10/17/2016	7/24/2017	-	38	TERM	CEPHALIC	RELAXED	+	56	11	-	26	N	NIL	NIL	92	333	329	69	A	10.4	NIL	7/16/2017	FTEMGLSCS	39	LIVE	FEMALE	2.6	3.011

S.NUM	WEIGHT	BPD (Cms)	HC (Cms)	AC (Cms)	FL (Cms)	BIRTH WEIGHT	SHEPARD
1	62	9.3	33.1	34.0	7.0	2.95	3.01
2	58	9.4	33.4	32.3	7.0	3.07	2.82
3	65	8.5	29.8	31.9	6.6	2.40	2.34
4	58	8.8	31.9	26.7	7.0	2.20	1.88
5	54	8.7	31.4	31.5	7.0	2.20	2.38
7	79	8.6	32.7	32.2	7.2	2.70	2.42
8	66	8.7	31.8	28.8	7.3	2.60	2.06
9	61	8.6	31.8	30.3	6.6	2.60	2.19
10	70	9.3	33.3	33.7	6.9	3.20	2.97
11	62	8.8	31.6	29.7	6.8	2.25	2.21
12	64	9.5	32.2	31.4	7.0	2.70	2.75
13	60	9.0	32.9	32.3	6.9	2.80	2.62
14	64	10.1	35.1	35.0	7.2	3.70	3.62
15	69	8.8	31.7	31.0	6.9	2.90	2.36
18	58	9.2	33.0	33.2	6.9	3.20	2.85
19	56	8.9	32.9	32.2	7.2	3.10	2.56
20	58	9.3	33.3	32.9	7.3	3.20	2.85
21	70	9.2	33.6	35.7	7.1	3.30	3.22
23	65	9.5	32.9	33.5	7.2	2.70	3.05
24	62	9.4	32.7	32.0	7.3	3.00	2.78
25	58	9.3	33.1	33.8	8.1	3.10	2.98
26	59	8.9	33.4	32.8	7.1	2.60	2.64
27	60	8.7	29.3	31.0	6.4	2.30	2.32
28	64	9.1	33.5	34.8	7.3	2.90	3.03
29	65	10.6	35.8	36.3	7.0	3.60	4.16
30	54	9.1	32.9	33.3	6.9	2.80	2.81
31	61	9.1	33.1	31.5	7.3	3.10	2.57
33	65	9.9	35.4	36.0	7.1	3.50	3.67
34	63	7.9	30.5	26.9	6.3	1.90	1.56
35	55	8.7	31.5	30.1	7.1	2.30	2.21
36	58	9.7	33.3	32.4	7.6	2.90	3.00
37	60	9.2	35.4	32.6	7.1	2.70	2.76
38	45	9.4	32.4	32.1	7.2	2.80	2.80
40	53	9.9	30.7	32.6	6.9	3.10	3.14
41	65	10.4	31.0	32.5	7.1	3.00	3.43
42	54	7.4	29.8	31.6	7.2	2.90	1.87
45	53	9.4	36.5	30.3	7.3	2.70	2.56
46	57	8.5	37.2	29.9	7.9	3.00	2.10
47	60	9.7	31.0	32.2	7.8	3.20	2.97
48	45	9.9	32.1	32.4	7.4	3.00	3.11
49	55	9.5	31.0	33.1	7.7	2.90	2.99
50	58	9.4	32.8	31.5	7.9	2.70	2.72
51	47	9.9	32.2	31.8	6.9	2.80	3.03
53	61	9.7	30.4	31.1	6.8	3.10	2.82
54	61	10.0	35.6	37.1	7.2	3.20	3.92
55	70	9.7	29.2	32.1	7.7	2.80	2.96
56	54	9.1	35.4	35.7	7.4	3.10	3.17
57	53	9.2	32.9	30.6	7.1	2.90	2.50
58	59	8.7	31.2	31.0	7.1	2.80	2.32
59	59	7.9	35.5	32.9	7.0	3.20	2.21

60	53	9.7	33.5	31.4	7.0	2.70	2.86
61	64	10.1	33.5	32.2	7.2	3.00	3.20
62	54	9.3	32.7	33.8	6.8	3.50	2.98
63	58	9.4	33.5	33.4	6.7	3.00	2.98
66	64	8.9	32.4	34.1	7.1	2.90	2.82
67	58	9.1	34.4	32.5	7.0	2.60	2.70
68	62	9.3	33.8	34.4	7.1	3.15	3.07
69	60	8.1	31.1	29.2	6.3	1.73	1.86
70	59	8.8	33.4	33.9	6.9	2.90	2.75
71	68	8.8	33.1	32.0	7.0	2.60	2.49
73	56	8.4	29.3	31.5	7.0	1.90	2.25
74	62	8.5	34.0	33.7	7.1	3.30	2.58
75	59	9.3	32.8	33.2	7.0	3.10	2.90
76	62	9.8	34.2	34.4	7.3	3.44	3.35
77	56	9.9	34.1	34.1	7.3	3.20	3.36
78	56	8.9	32.3	31.9	6.4	2.40	2.52
79	62	9.1	31.6	30.5	7.1	2.60	2.44
80	56	9.1	31.6	30.1	7.1	2.80	2.39
81	58	9.1	31.9	33.1	7.3	2.70	2.78
82	50	8.2	27.6	28.3	5.8	1.80	1.81
83	68	9.2	33.1	31.2	6.9	2.80	2.58
84	58	7.7	28.6	23.5	4.9	1.40	1.23
86	53	8.6	30.6	27.6	6.8	2.00	1.89
87	62	8.2	31.6	28.5	6.5	2.10	1.83
88	61	9.3	33.7	31.7	7.2	2.60	2.69
89	58	9.4	33.8	36.6	6.9	3.40	3.48
90	61	8.2	31.1	33.5	7.3	2.80	2.42
91	52	9.1	30.1	31.1	6.7	2.40	2.51
92	56	8.7	32.2	33.2	4.1	3.00	2.60
93	61	8.7	33.1	34.2	8.1	3.20	2.74
94	52	8.9	33.5	32.8	6.9	2.50	2.64
95	56	8.1	30.7	31.6	6.9	2.65	2.13
96	56	7.8	29.3	27.6	6.3	2.20	1.60
97	61	7.8	28.2	24.5	5.8	1.40	1.33
98	57	9.1	33.4	33.4	6.7	3.20	2.82
99	58	8.8	31.8	33.9	7.9	2.80	2.75
101	64	9.2	33.5	33.6	7.3	3.40	2.90
102	62	9.7	30.3	32.2	7.3	3.20	2.97
103	59	8.9	33.4	32.4	7.1	2.80	2.59
104	63	9.7	34.4	34.0	7.6	3.40	3.23
106	56	8.7	30.3	32.3	7.4	2.40	2.48
107	58	9.5	35.5	34.9	7.9	3.95	3.26
108	61	8.1	30.6	29.3	6.5	2.00	1.87
109	60	7.8	27.4	30.1	5.8	2.20	1.85
110	56	9.6	34.8	32.0	6.8	3.10	2.89
111	58	9.1	31.9	33.1	7.3	2.70	2.78
112	56	7.8	29.3	27.6	6.3	1.80	1.60
113	61	8.2	29.6	30.2	6.7	2.05	2.01
114	54	9.4	33.1	32.8	7.4	3.00	2.89
115	70	8.5	33.8	35.0	6.7	3.10	2.77
116	63	8.5	30.7	30.1	7.8	2.80	2.12
117	65	8.7	32.2	29.4	6.7	2.40	2.13

118	62	8.9	32.6	32.1	7.8	2.90	2.55
119	62	9.0	31.9	29.3	7.0	2.60	2.25
120	62	9.8	31.9	30.9	6.6	2.70	2.85
121	63	8.3	30.6	30.1	6.0	2.10	2.04
122	57	9.3	34.4	32.0	7.0	2.80	2.73
123	68	8.5	33.6	32.7	7.0	2.76	2.44
124	58	9.0	33.5	33.1	7.3	3.00	2.73
125	55	9.4	33.5	33.1	7.3	2.94	2.94
126	58	8.5	30.8	30.3	7.5	2.63	2.14
127	58	8.9	30.3	29.8	7.2	2.70	2.26
128	66	9.0	33.3	35.2	7.6	2.90	3.04
129	54	9.2	33.3	32.9	6.9	2.60	2.80

2.78
0.46

0.0246

				DIFFERENCE WITH BIRTH WEI		
HADLOCK II	HADLOCK III	HADLOCK IV	EFW ON SCAN	SHEPARD	HADLOCK II	HADLOCK III
3.23	3.16	3.20	3.201	-0.06	-0.28	-0.21
2.99	2.93	2.97	2.974	0.25	0.08	0.14
2.61	2.50	2.54	2.535	0.06	-0.21	-0.10
2.16	2.16	2.17	2.166	0.32	0.04	0.04
2.73	2.68	2.69	2.693	-0.18	-0.53	-0.48
2.87	2.94	2.89	2.891	0.28	-0.17	-0.24
2.49	2.49	2.49	2.487	0.54	0.11	0.11
2.41	2.42	2.42	2.417	0.41	0.19	0.18
3.15	3.09	3.13	3.132	0.23	0.05	0.11
2.44	2.40	2.42	2.422	0.04	-0.19	-0.15
2.88	2.72	2.81	2.809	-0.05	-0.18	-0.02
2.87	2.86	2.87	2.866	0.18	-0.07	-0.06
3.68	3.55	3.66	3.664	0.08	0.02	0.15
2.64	2.61	2.62	2.621	0.54	0.26	0.29
3.05	3.00	3.03	3.028	0.35	0.15	0.20
2.94	2.95	2.94	2.939	0.54	0.16	0.15
3.17	3.12	3.14	3.144	0.35	0.03	0.08
3.53	3.50	3.51	3.265	0.08	-0.23	-0.20
3.27	3.14	3.21	3.210	-0.35	-0.57	-0.44
3.05	2.95	3.00	3.004	0.22	-0.05	0.05
3.61	3.53	3.54	3.539	0.12	-0.51	-0.43
2.99	3.04	3.01	3.010	-0.04	-0.39	-0.44
2.46	2.30	2.36	2.365	-0.02	-0.16	0.00
3.42	3.42	3.41	3.406	-0.13	-0.52	-0.52
3.99	3.77	3.98	3.797	-0.56	-0.39	-0.17
3.04	3.00	3.02	3.024	-0.01	-0.24	-0.20
2.92	2.91	2.91	2.914	0.53	0.18	0.19
3.77	3.72	3.79	3.791	-0.17	-0.27	-0.22
1.82	1.88	1.85	1.849	0.34	0.08	0.02
2.58	2.55	2.56	2.557	0.09	-0.28	-0.25
3.30	3.16	3.24	2.594	-0.10	-0.40	-0.26
3.03	3.16	3.11	3.001	-0.06	-0.33	-0.46
3.03	2.90	2.97	2.866	0.00	-0.23	-0.10
3.11	2.75	2.93	3.064	-0.04	-0.01	0.35
3.29	2.82	3.07	3.256	-0.43	-0.29	0.18
2.56	2.66	2.55	3.027	1.03	0.34	0.24
2.82	2.99	2.94	2.599	0.14	-0.12	-0.29
2.81	3.25	3.04	3.278	0.90	0.19	-0.25
3.35	3.03	3.17	3.340	0.23	-0.15	0.17
3.27	2.99	3.14	2.999	-0.11	-0.27	0.01
3.40	3.11	3.23	2.840	-0.09	-0.50	-0.21
3.22	3.12	3.16	2.659	-0.02	-0.52	-0.42
2.98	2.74	2.88	2.999	-0.23	-0.18	0.06
2.80	2.50	2.65	3.456	0.28	0.30	0.60
4.04	3.97	4.06	3.222	-0.72	-0.84	-0.77
3.29	2.85	3.04	2.943	-0.16	-0.49	-0.05
3.60	3.77	3.68	3.156	-0.07	-0.50	-0.67
2.74	2.70	2.73	3.200	0.40	0.16	0.20
2.70	2.64	2.65	2.655	0.48	0.10	0.16
2.76	3.18	2.95	3.089	0.99	0.44	0.02

2.92	2.81	2.89	2.889	-0.16	-0.22	-0.11
3.21	3.00	3.13	3.256	-0.20	-0.21	0.00
3.13	3.03	3.09	3.089	0.52	0.37	0.47
3.05	3.00	3.05	3.156	0.02	-0.05	0.00
3.19	3.15	3.15	3.153	0.08	-0.29	-0.25
2.95	3.03	3.01	3.006	-0.10	-0.35	-0.43
3.33	3.31	3.33	3.329	0.08	-0.18	-0.16
2.10	2.15	2.12	2.124	-0.13	-0.37	-0.42
3.07	3.13	3.09	3.093	0.15	-0.17	-0.23
2.82	2.87	2.84	2.840	0.11	-0.22	-0.27
2.67	2.55	2.58	2.500	-0.35	-0.77	-0.65
3.04	3.22	3.11	3.109	0.72	0.26	0.08
3.10	3.02	3.07	3.065	0.20	0.00	0.08
3.53	3.42	3.50	3.496	0.09	-0.09	0.02
3.50	3.36	3.46	3.459	-0.16	-0.30	-0.16
2.62	2.60	2.62	2.616	-0.12	-0.22	-0.20
2.71	2.61	2.65	2.654	0.16	-0.11	-0.01
2.65	2.56	2.60	2.654	0.41	0.15	0.24
3.15	3.04	3.08	2.832	-0.08	-0.45	-0.34
1.87	1.75	1.79	1.999	-0.01	-0.07	0.05
2.75	2.72	2.75	2.748	0.22	0.05	0.08
1.14	1.15	1.14	1.142	0.17	0.26	0.25
2.16	2.11	2.13	2.134	0.11	-0.16	-0.11
2.10	2.17	2.13	2.132	0.27	0.00	-0.07
2.95	2.94	2.96	2.958	-0.09	-0.35	-0.34
3.68	3.61	3.66	3.659	-0.08	-0.28	-0.21
3.01	3.04	2.97	2.954	0.38	-0.21	-0.24
2.65	2.45	2.54	2.541	-0.11	-0.25	-0.05
2.14	2.13	2.18	2.986	0.40	0.86	0.87
3.51	3.59	3.49	3.124	0.46	-0.31	-0.39
2.92	2.97	2.95	2.544	-0.14	-0.42	-0.47
2.59	2.62	2.58	2.850	0.52	0.06	0.03
1.88	1.89	1.88	2.248	0.60	0.32	0.31
1.44	1.43	1.43	1.433	0.07	-0.04	-0.03
2.99	2.99	3.00	2.999	0.38	0.21	0.21
3.42	3.36	3.34	3.333	0.05	-0.62	-0.56
3.25	3.24	3.24	3.570	0.50	0.15	0.16
3.15	2.80	2.97	3.189	0.23	0.05	0.40
2.93	2.98	2.95	3.112	0.21	-0.13	-0.18
3.55	3.48	3.53	3.500	0.17	-0.15	-0.08
2.98	2.85	2.88	2.367	-0.08	-0.58	-0.45
3.76	3.84	3.79	4.100	0.69	0.19	0.11
2.17	2.20	2.18	1.940	0.13	-0.17	-0.20
2.02	1.93	1.95	2.420	0.35	0.18	0.27
2.91	2.92	2.95	3.030	0.21	0.19	0.18
3.15	3.04	3.08	2.754	-0.08	-0.45	-0.34
1.88	1.89	1.88	1.784	0.20	-0.08	-0.09
2.36	2.31	2.32	1.940	0.04	-0.31	-0.26
3.21	3.12	3.17	3.169	0.11	-0.21	-0.12
3.11	3.27	3.18	3.177	0.33	-0.01	-0.17
2.80	2.75	2.75	2.750	0.68	0.00	0.05
2.35	2.37	2.36	2.364	0.27	0.05	0.03

3.15	3.14	3.12	3.121	0.35	-0.25	-0.24
2.50	2.44	2.47	2.473	0.35	0.10	0.16
2.72	2.50	2.63	2.700	-0.15	-0.02	0.20
2.15	2.14	2.14	2.100	0.06	-0.05	-0.04
2.92	2.96	2.96	2.900	0.07	-0.12	-0.16
2.86	3.00	2.92	2.887	0.32	-0.10	-0.24
3.13	3.16	3.14	2.940	0.27	-0.13	-0.16
3.22	3.16	3.20	2.845	0.00	-0.28	-0.22
2.71	2.67	2.67	2.892	0.49	-0.08	-0.04
2.61	2.48	2.53	2.744	0.44	0.09	0.22
3.56	3.57	3.53	2.750	-0.14	-0.66	-0.67
3.00	2.97	3.00	3.000	-0.20	-0.40	-0.37

2.90	2.86	2.88	2.86	12.37	10.31	9.24
0.51	0.50	0.50	0.48			
0.0478	0.2047	0.1078	0.1517			
0.8448	0.8391	0.8540	0.9152			
0.7137	0.7040	0.7292	0.8377			

GHT	% DIFFERENCE WITH BIRTH WEIGHT			
HADLOCK IV	SHEPARD	HADLOCK II	HADLOCK III	HADLOCK IV
-0.25	-2.17%	-9.59%	-7.07%	-8.50%
0.10	8.02%	2.64%	4.52%	3.13%
-0.14	2.56%	-8.78%	-4.31%	-5.63%
0.03	14.32%	1.94%	2.03%	1.53%
-0.49	-8.05%	-24.01%	-22.02%	-22.40%
-0.19	10.32%	-6.47%	-8.81%	-7.06%
0.11	20.74%	4.26%	4.34%	4.33%
0.18	15.87%	7.16%	6.83%	7.04%
0.07	7.20%	1.58%	3.31%	2.13%
-0.17	1.99%	-8.43%	-6.86%	-7.65%
-0.11	-2.03%	-6.56%	-0.91%	-4.04%
-0.07	6.36%	-2.44%	-2.15%	-2.37%
0.04	2.04%	0.64%	3.96%	0.97%
0.28	18.61%	8.80%	10.16%	9.67%
0.17	11.07%	4.76%	6.35%	5.38%
0.16	17.41%	5.22%	4.76%	5.20%
0.06	10.78%	1.04%	2.59%	1.75%
-0.21	2.31%	-6.96%	-6.21%	-6.45%
-0.51	-12.86%	-21.13%	-16.21%	-18.88%
0.00	7.24%	-1.83%	1.77%	-0.13%
-0.44	3.73%	-16.40%	-13.90%	-14.17%
-0.41	-1.58%	-15.02%	-16.86%	-15.79%
-0.06	-0.66%	-6.92%	0.00%	-2.82%
-0.51	-4.49%	-17.92%	-17.90%	-17.46%
-0.38	-15.60%	-10.85%	-4.79%	-10.52%
-0.22	-0.33%	-8.61%	-7.29%	-8.01%
0.19	17.25%	5.87%	6.19%	6.00%
-0.29	-4.78%	-7.71%	-6.18%	-8.31%
0.05	17.63%	4.17%	1.20%	2.66%
-0.26	4.02%	-12.07%	-10.87%	-11.16%
-0.34	-3.42%	-13.78%	-8.92%	-11.61%
-0.41	-2.29%	-12.08%	-17.09%	-15.33%
-0.17	0.13%	-8.29%	-3.67%	-6.07%
0.17	-1.31%	-0.32%	11.30%	5.34%
-0.07	-14.27%	-9.53%	5.89%	-2.27%
0.35	35.60%	11.78%	8.29%	11.90%
-0.24	5.11%	-4.26%	-10.83%	-8.82%
-0.04	30.05%	6.25%	-8.32%	-1.43%
0.03	7.15%	-4.69%	5.26%	0.83%
-0.14	-3.74%	-8.95%	0.22%	-4.58%
-0.33	-3.08%	-17.12%	-7.35%	-11.39%
-0.46	-0.59%	-19.21%	-15.41%	-17.06%
-0.08	-8.15%	-6.61%	2.03%	-2.93%
0.45	8.96%	9.63%	19.26%	14.43%
-0.86	-22.40%	-26.38%	-24.03%	-26.87%
-0.24	-5.62%	-17.67%	-1.88%	-8.65%
-0.58	-2.29%	-16.28%	-21.63%	-18.72%
0.17	13.80%	5.51%	6.79%	5.87%
0.15	17.32%	3.74%	5.65%	5.19%
0.25	30.83%	13.68%	0.70%	7.91%

-0.19	-6.00%	-8.12%	-4.20%	-6.99%
-0.13	-6.70%	-6.88%	0.12%	-4.34%
0.41	14.73%	10.53%	13.43%	11.75%
-0.05	0.70%	-1.83%	0.16%	-1.52%
-0.25	2.60%	-9.99%	-8.74%	-8.74%
-0.41	-3.77%	-13.62%	-16.67%	-15.62%
-0.18	2.42%	-5.82%	-5.11%	-5.67%
-0.39	-7.63%	-21.45%	-24.56%	-22.76%
-0.19	5.28%	-5.80%	-8.01%	-6.66%
-0.24	4.34%	-8.39%	-10.30%	-9.25%
-0.68	-18.17%	-40.49%	-34.16%	-35.59%
0.19	21.88%	7.96%	2.47%	5.79%
0.03	6.53%	-0.16%	2.70%	1.12%
-0.06	2.59%	-2.61%	0.72%	-1.63%
-0.26	-5.10%	-9.52%	-5.00%	-8.09%
-0.22	-5.04%	-9.25%	-8.21%	-8.99%
-0.05	6.19%	-4.11%	-0.21%	-2.07%
0.20	14.64%	5.23%	8.70%	7.00%
-0.38	-3.00%	-16.71%	-12.57%	-14.05%
0.01	-0.39%	-3.61%	2.97%	0.44%
0.05	8.01%	1.75%	2.73%	1.85%
0.26	12.45%	18.74%	17.96%	18.45%
-0.13	5.35%	-7.79%	-5.64%	-6.71%
-0.03	12.98%	0.13%	-3.11%	-1.51%
-0.36	-3.50%	-13.54%	-13.14%	-13.77%
-0.26	-2.37%	-8.25%	-6.21%	-7.63%
-0.17	13.67%	-7.46%	-8.41%	-6.09%
-0.14	-4.75%	-10.30%	-2.18%	-5.88%
0.82	13.30%	28.77%	28.94%	27.49%
-0.29	14.30%	-9.77%	-12.12%	-9.14%
-0.45	-5.64%	-16.85%	-19.00%	-17.99%
0.07	19.52%	2.19%	1.21%	2.78%
0.32	27.50%	14.56%	14.00%	14.63%
-0.03	4.93%	-3.09%	-1.83%	-2.33%
0.20	11.77%	6.60%	6.63%	6.29%
-0.54	1.90%	-22.11%	-19.97%	-19.17%
0.16	14.61%	4.37%	4.84%	4.69%
0.23	7.15%	1.49%	12.40%	7.31%
-0.15	7.61%	-4.70%	-6.47%	-5.51%
-0.13	4.92%	-4.41%	-2.38%	-3.76%
-0.48	-3.33%	-24.21%	-18.78%	-20.01%
0.16	17.49%	4.88%	2.89%	3.93%
-0.18	6.37%	-8.73%	-10.12%	-8.98%
0.25	16.10%	8.29%	12.42%	11.42%
0.15	6.81%	5.98%	5.89%	4.85%
-0.38	-3.00%	-16.71%	-12.57%	-14.05%
-0.08	11.39%	-4.43%	-5.12%	-4.34%
-0.27	1.96%	-15.33%	-12.90%	-13.13%
-0.17	3.56%	-7.07%	-4.14%	-5.64%
-0.08	10.78%	-0.43%	-5.54%	-2.49%
0.05	24.24%	0.07%	1.66%	1.78%
0.04	11.37%	2.06%	1.26%	1.48%

-0.22	12.17%	-8.51%	-8.28%	-7.62%
0.13	13.49%	4.02%	6.01%	4.88%
0.07	-5.58%	-0.75%	7.24%	2.62%
-0.04	2.92%	-2.42%	-2.05%	-2.03%
-0.16	2.46%	-4.38%	-5.75%	-5.75%
-0.16	11.52%	-3.50%	-8.81%	-5.73%
-0.14	8.96%	-4.28%	-5.39%	-4.60%
-0.26	0.14%	-9.55%	-7.54%	-8.74%
-0.04	18.46%	-3.03%	-1.60%	-1.49%
0.17	16.23%	3.22%	8.33%	6.23%
-0.63	-4.85%	-22.90%	-23.13%	-21.85%
-0.40	-7.83%	-15.43%	-14.42%	-15.26%

9.06	38	6	9	7
	5	27	26	25
	43	33	35	32

S.NUM	BIRTH WEIGHT	SHEPARD	HADLOCK II	HADLOCK III	HADLOCK IV
84	1.40	1.23	1.14	1.15	1.14
97	1.40	1.33	1.44	1.43	1.43
69	1.73	1.86	2.10	2.15	2.12
82	1.80	1.81	1.87	1.75	1.79
112	1.80	1.60	1.88	1.89	1.88
34	1.90	1.56	1.82	1.88	1.85
73	1.90	2.25	2.67	2.55	2.58
86	2.00	1.89	2.16	2.11	2.13
108	2.00	1.87	2.17	2.20	2.18
113	2.05	2.01	2.36	2.31	2.32
87	2.10	1.83	2.10	2.17	2.13
121	2.10	2.04	2.15	2.14	2.14
4	2.20	1.88	2.16	2.16	2.17
5	2.20	2.38	2.73	2.68	2.69
96	2.20	1.60	1.88	1.89	1.88
109	2.20	1.85	2.02	1.93	1.95
11	2.25	2.21	2.44	2.40	2.42
27	2.30	2.32	2.46	2.30	2.36
35	2.30	2.21	2.58	2.55	2.56
3	2.40	2.34	2.61	2.50	2.54
78	2.40	2.52	2.62	2.60	2.62
91	2.40	2.51	2.65	2.45	2.54
106	2.40	2.48	2.98	2.85	2.88
117	2.40	2.13	2.35	2.37	2.36
94	2.50	2.64	2.92	2.97	2.95
8	2.60	2.06	2.49	2.49	2.49
9	2.60	2.19	2.41	2.42	2.42
26	2.60	2.64	2.99	3.04	3.01
67	2.60	2.70	2.95	3.03	3.01
71	2.60	2.49	2.82	2.87	2.84
79	2.60	2.44	2.71	2.61	2.65
88	2.60	2.69	2.95	2.94	2.96
119	2.60	2.25	2.50	2.44	2.47
129	2.60	2.80	3.00	2.97	3.00
126	2.63	2.14	2.71	2.67	2.67
95	2.65	2.13	2.59	2.62	2.58
7	2.70	2.42	2.87	2.94	2.89
12	2.70	2.75	2.88	2.72	2.81
23	2.70	3.05	3.27	3.14	3.21
37	2.70	2.76	3.03	3.16	3.11
45	2.70	2.56	2.82	2.99	2.94
50	2.70	2.72	3.22	3.12	3.16
60	2.70	2.70	2.86	2.92	2.81
81	2.70	2.78	3.15	3.04	3.08
111	2.70	2.78	3.15	3.04	3.08
120	2.70	2.85	2.72	2.50	2.63
127	2.70	2.26	2.61	2.48	2.53
123	2.76	2.44	2.86	3.00	2.92
13	2.80	2.62	2.87	2.86	2.87
30	2.80	2.81	3.04	3.00	3.02
38	2.80	2.80	3.03	2.90	2.97
51	2.80	3.03	2.98	2.74	2.88
55	2.80	2.96	3.29	2.85	3.04
58	2.80	2.32	2.70	2.64	2.65
80	2.80	2.39	2.65	2.56	2.60
83	2.80	2.58	2.75	2.72	2.75
90	2.80	2.42	3.01	3.04	2.97

99	2.80	2.75	3.42	3.36	3.34
103	2.80	2.59	2.93	2.98	2.95
116	2.80	2.12	2.80	2.75	2.75
122	2.80	2.73	2.92	2.96	2.96
15	2.90	2.36	2.64	2.61	2.62
28	2.90	3.03	3.42	3.42	3.41
36	2.90	3.00	3.30	3.16	3.24
42	2.90	1.87	2.56	2.66	2.55
49	2.90	2.99	3.40	3.11	3.23
57	2.90	2.50	2.74	2.70	2.73
66	2.90	2.82	3.19	3.15	3.15
70	2.90	2.75	3.07	3.13	3.09
118	2.90	2.55	3.15	3.14	3.12
128	2.90	3.04	3.56	3.57	3.53
125	2.94	2.94	3.22	3.16	3.20
1	2.95	3.01	3.23	3.16	3.20
24	3.00	2.78	3.05	2.95	3.00
41	3.00	3.43	3.29	2.82	3.07
46	3.00	2.10	2.81	3.25	3.04
48	3.00	3.11	3.27	2.99	3.14
61	3.00	3.20	3.21	3.00	3.13
63	3.00	2.98	3.05	3.00	3.05
92	3.00	2.60	2.14	2.13	2.18
114	3.00	2.89	3.21	3.12	3.17
124	3.00	2.73	3.13	3.16	3.14
2	3.07	2.82	2.99	2.93	2.97
19	3.10	2.56	2.94	2.95	2.94
25	3.10	2.98	3.61	3.53	3.54
31	3.10	2.57	2.92	2.91	2.91
40	3.10	3.14	3.11	2.75	2.93
53	3.10	2.82	2.80	2.50	2.65
56	3.10	3.17	3.60	3.77	3.68
75	3.10	2.90	3.10	3.02	3.07
110	3.10	2.89	2.91	2.92	2.95
115	3.10	2.77	3.11	3.27	3.18
68	3.15	3.07	3.33	3.31	3.33
10	3.20	2.97	3.15	3.09	3.13
18	3.20	2.85	3.05	3.00	3.03
20	3.20	2.85	3.17	3.12	3.14
47	3.20	2.97	3.35	3.03	3.17
54	3.20	3.92	4.04	3.97	4.06
59	3.20	2.21	2.76	3.18	2.95
77	3.20	3.36	3.50	3.36	3.46
93	3.20	2.74	3.51	3.59	3.49
98	3.20	2.82	2.99	2.99	3.00
102	3.20	2.97	3.15	2.80	2.97
21	3.30	3.22	3.53	3.50	3.51
74	3.30	2.58	3.04	3.22	3.11
89	3.40	3.48	3.68	3.61	3.66
101	3.40	2.90	3.25	3.24	3.24
104	3.40	3.23	3.55	3.48	3.53
76	3.44	3.35	3.53	3.42	3.50
33	3.50	3.67	3.77	3.72	3.79
62	3.50	2.98	3.13	3.03	3.09
29	3.60	4.16	3.99	3.77	3.98
14	3.70	3.62	3.68	3.55	3.66
107	3.95	3.26	3.76	3.84	3.79

	COMPARISON WITH BIRTH WEIGHT			
	MEAN	S.D.	p VALUE	INFERENCE
BIRTH WEIGHT	2.78	0.46	-	-
SHEPARD	2.89	0.53	0.0137	S
HADLOCK II	2.86	0.50	0.0809	NS
HADLOCK III	2.87	0.51	0.2047	NS
HADLOCK IV	2.86	0.48	0.1449	NS

PEARSON'S CORRELATION COEFFICIENT WITH RESPECT TO ABW

	R	R SQUARRED
SHEPARD	0.8198	0.6720
HADLOCK II	0.8391	0.7040
HADLOCK III	0.8425	0.7098
HADLOCK IV	0.9152	0.8377

	ESTIMATE					
	OVER	%	UNDER	%	TOTAL	%
SHEPARD	39	34.21	5	4.39	44	38.60
HADLOCK II	7	6.14	27	23.68	34	29.82
HADLOCK III	9	7.89	26	22.81	35	30.70
HADLOCK IV	8	7.02	25	21.93	33	28.95

SUM OF SQUARES OF THE DEVIATIONS FROM ABW

SHEPARD	17.41
HADLOCK II	11.84
HADLOCK III	9.24
HADLOCK IV	9.69

THE HIGHEST VALUEIS FOR SHEPARD

	BIRTH WEIGHT		
SHEPARD	**<2.5 Kg**	**>=2.5 Kg**	**TOTAL**
<2.5 Kg	22	71	93
>=2.5 Kg	2	19	21
TOTAL	24	90	114

SENSITIVITY = 91.67%

95% CI : 80.61% 102.72%

SPESIFICITY = 21.11%

95% CI : 12.68% 29.54%

PREVALENCE OF BIRTH LESS THAN 2.5 KG = 21.05%

PREVALENC

POSITIVE PREDICTIVE VALUE :

Probability that the birth weight is less than 2.5 kg when the estimated birth weight is less than 2.5 Kg

23.66%

95% CI : 15.02% 32.29%

NEGATIVE PREDICTIVE VALUE :

Probability that the birth weight is more than 2.5 kg when the estimated birth weight is more than 2.5 Kg

90.48%

95% CI : 77.92% 103.03%

DIAGNOSTIC ACCURACY= 35.96%

FALSE POSITIVE ERROR RATE = 78.89%

FALSE NEGATIVE ERROR RATE = 8.33%

	BIRTH WEIGHT		
HADLOCK II	**<2.5 Kg**	**>=2.5 Kg**	**TOTAL**
<2.5 Kg	17	86	103
>=2.5 Kg	7	4	11
TOTAL	24	90	114

SENSITIVITY = 70.83%

95% CI : 52.65% 89.02%

SPESIFICITY = 4.44%

95% CI : 0.19% 8.70%

CE OF BIRTH LESS THAN 2.5 KG = 21.05%

PREVALEI

POSITIVE PREDICTIVE VALUE :

Probability that the birth weight is less than 2.5 kg when the estimated birth weight is less than 2.5 Kg

16.50%

95% CI : 9.34% 23.67%

NEGATIVE PREDICTIVE VALUE :

Probability that the birth weight is more than 2.5 kg when the estimated birth weight is more than 2.5 Kg

36.36%

95% CI : 7.94% 64.79%

DIAGNOSTIC ACCURACY= 18.42%

FALSE POSITIVE ERROR RATE = 95.56%

FALSE NEGATIVE ERROR RATE = 29.17%

	BIRTH WEIGHT		
HADLOCK III	**<2.5 Kg**	**>=2.5 Kg**	**TOTAL**
<2.5 Kg	18	85	103
>=2.5 Kg	6	5	11
TOTAL	24	90	114

SENSITIVITY = 75.00%

95% CI : 57.68% 92.32%

SPESIFICITY = 5.56%

95% CI : 0.82% 10.29%

NCE OF BIRTH LESS THAN 2.5 KG = 21.05%

POSITIVE PREDICTIVE VALUE :
Probability that the birth weight is less than 2.5 kg when the estimated birth weight is less than 2.5 Kg

17.48%

95% CI : 10.14% 24.81%

NEGATIVE PREDICTIVE VALUE :
Probability that the birth weight is more than 2.5 kg when the estimated birth weight is more than 2.5 Kg

45.45%

95% CI : 16.03% 74.88%

DIAGNOSTIC ACCURACY= 20.18%

FALSE POSITIVE ERROR RATE = 94.44%

FALSE NEGATIVE ERROR RATE = 25.00%

	BIRTH WEIGHT		
HADLOCK IV	**<2.5 Kg**	**>=2.5 Kg**	**TOTAL**
<2.5 Kg	17	86	103
>=2.5 Kg	7	4	11
TOTAL	24	90	114

SENSITIVITY = 70.83%

95% CI : 52.65% 89.02%

SPESIFICITY = 4.44%

95% CI : 0.19% 8.70%

PREVALENCE OF BIRTH LESS THAN 2.5 KG = 21.05%

POSITIVE PREDICTIVE VALUE :

Probability that the birth weight is less than 2.5 kg when the estimated birth weight is less than 2.5 Kg

16.50%

95% CI : 9.34% 23.67%

NEGATIVE PREDICTIVE VALUE :

Probability that the birth weight is more than 2.5 kg when the estimated birth weight is more than 2.5 Kg

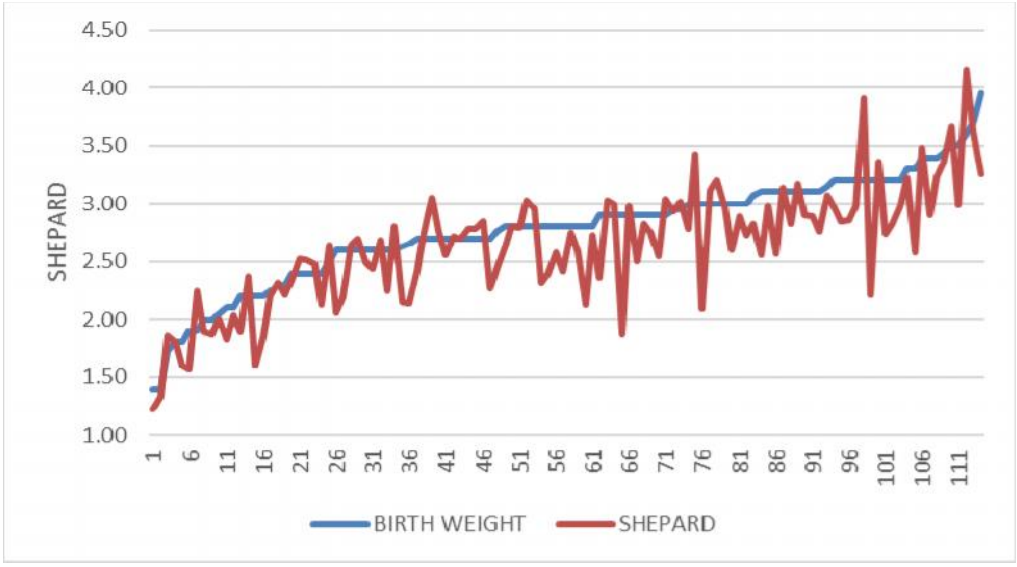
36.36%

95% CI : 7.94% 64.79%

DIAGNOSTIC ACCURACY= 18.42%

FALSE POSITIVE ERROR RATE = 95.56%

FALSE NEGATIVE ERROR RATE = 29.17%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3.50
3.00
2.50
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1.00
SHEPARD
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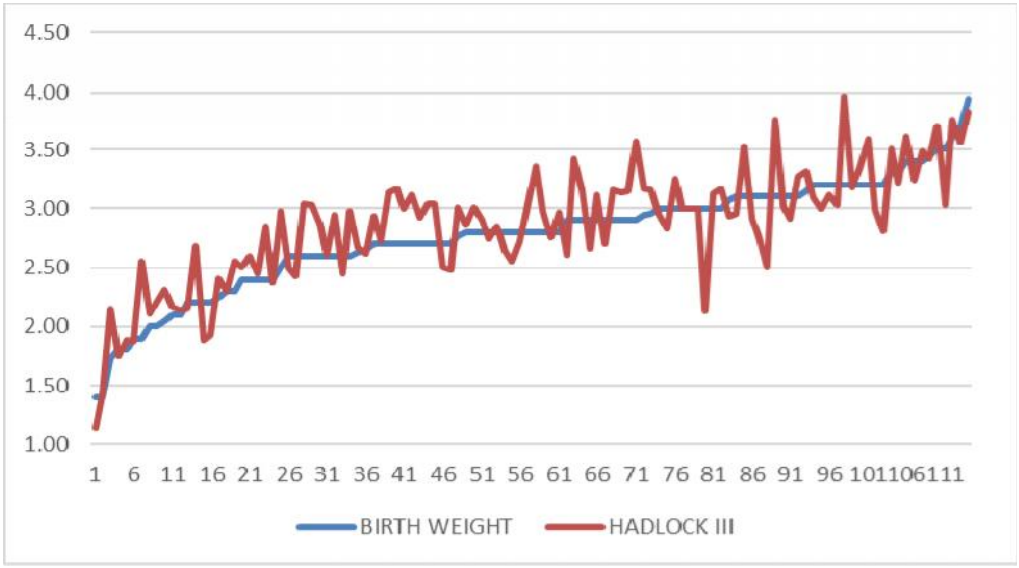
BIRTH WEIGHT
SHEPARD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BIRTH WEIGHT
HADLOCK III


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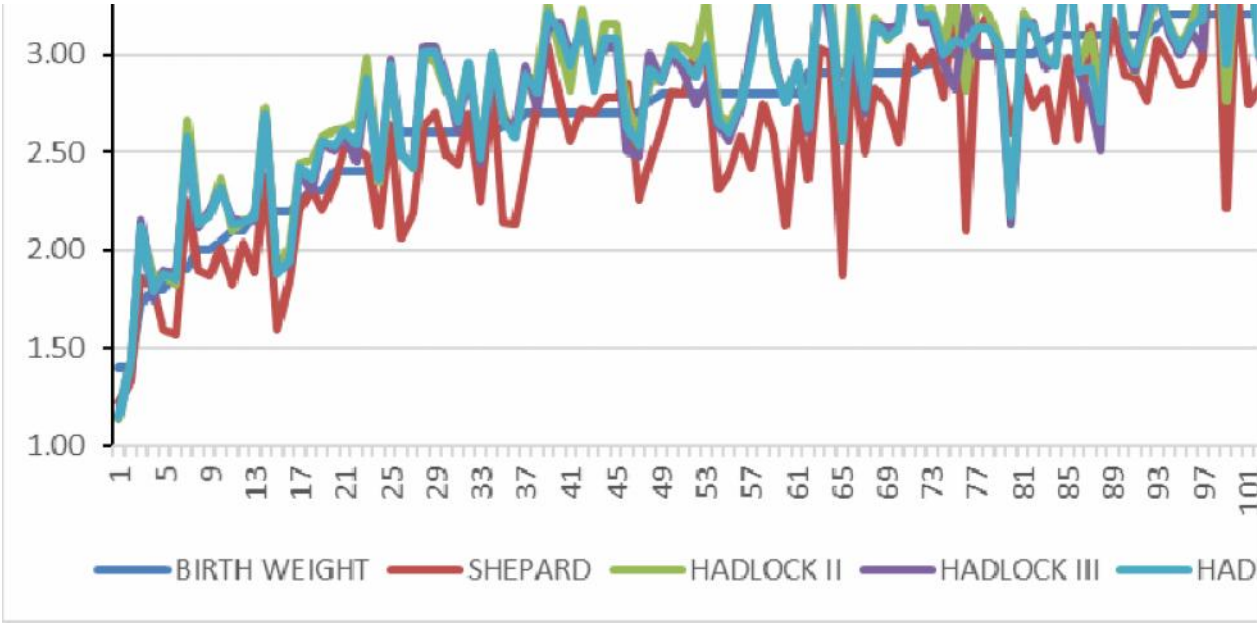
3.50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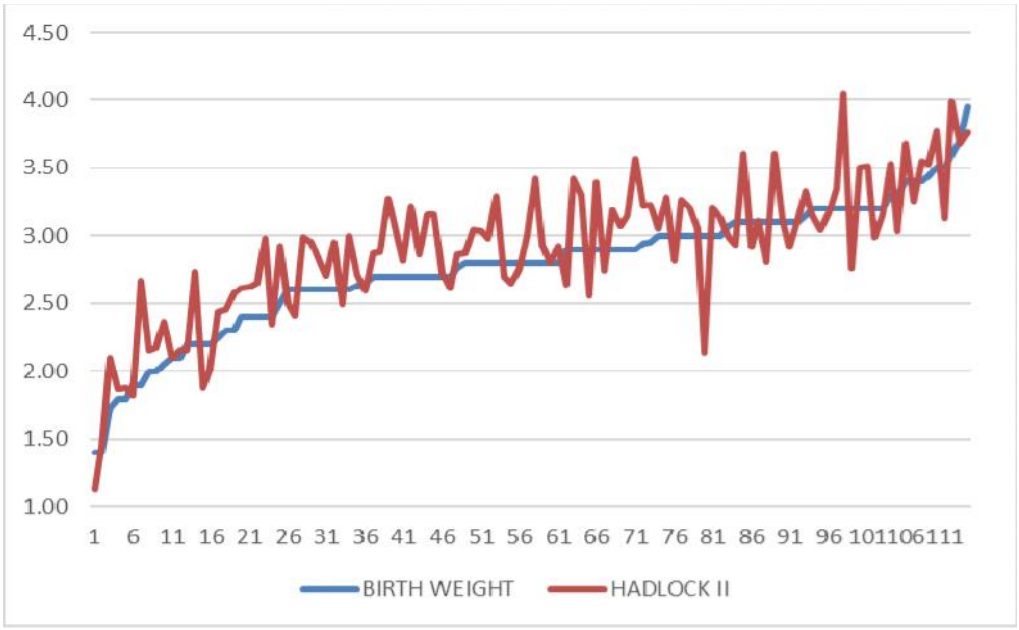
53
57
61
65
69
73
77
81
85
89
93
97
101
BIRTH WEIGHT
SHEPARD
HADLOCK II
HADLOCK III
HAD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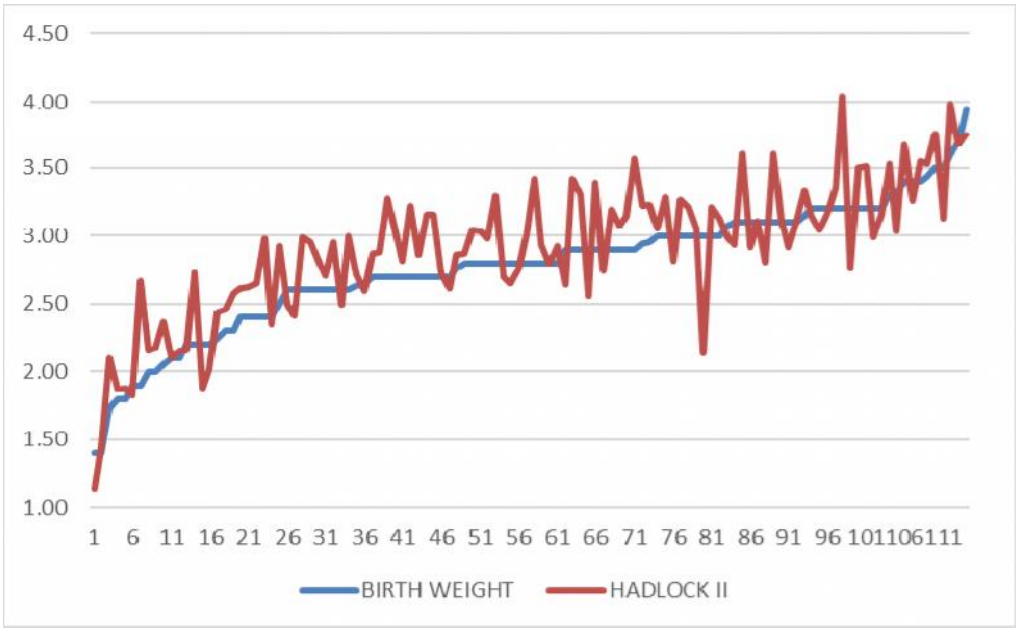
BIRTH WEIGHT
HADLOCK II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4.00
3.50
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1.00
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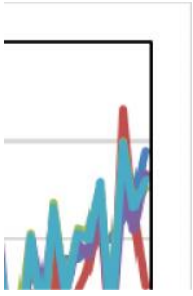
BIRTH WEIGHT
HADLOCK II



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113
LOCK IV