

Dedication

For my mother

To my father

**To all members of my family
& my teachers**

To my friends

Acknowledgement

I would very much like to express my thanks and gratitude to my supervisor professor Bushra Hussein Ahmed for his keen and tireless efforts in supervising this study through out all its stages. I greatly appreciate his patience in revising and discussing all the aspects of the study. His guidance, advice and continuous encouragement were crucial for the successful completion of this work.

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Abstract

Ultrasonography has proved to be an accurate, safe, fast, reliable and cost effective imaging modality for the estimation of fetal weight at term. This study was carried out at the Ribat University Hospital and Sahiroon specialized Hospital from June 2003 to December 2004 to evaluate the relative accuracy of the three ultrasonographic measuring parameters (BPD, AC and FL).

Two hundred and thirty Sudanese healthy pregnant ladies, aged between (18 – 42) years were examined by ultrasound during gestational age (18 – 40) weeks with normal and well being, singleton fetuses. Using an Aloka (SSD- 650), Aloka 1100 real times scanners with two transducers convex and linear frequency (3.5MHz).

Twenty pregnant women from the study population were primigravida, 25.7% Para (I)=18.3% Para (II)=6.5% Para (III)=21.7% Para (IV) and 7.8% more than Para (IV),

the study showed that the mean birth weight = 3422 ± 250 mean value.

The researcher found that the Aloka's formula give accurate estimation for fetal weight intrauterine and at birth.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

ملخص الأطروحة

أجريت هذه الدراسة بمستشفى الرباط الجامعي ومستشفى ساهرون التخصصي في قسم الموجات فوق الصوتية في الفترة ما بين يونيو 2003م حتى ديسمبر 2004م وذلك لتقييم الدقة النسبية للمعادلات المعتمدة في جهاز الموجات فوق الصوتية لتقدير أوزان الأجنة للأمهات السودانيات ما قبل الولادة وعند الولادة مباشرة. تم الكشف على عدد ثلاثون ومائتين امرأة حامل في الفترة العمرية من 18 إلى 42 سنة لأمهات صحيحات ذوات حمل بجنين واحد صحيح معافى خالي من العيوب والتشوهات الخلقية في الحمل ما بين 18 أسبوع إلى فترة الولادة وشملت 23 أسبوع وذلك لحساب الأوزان حسب معادلات جهازين الموجات فوق الصوتية ماركة الوكا 650 و الوكا 1100 س س د بواسطة مبدلات طاقة 3.5 ميغا هيرز قطاعي ومستطيل.

عشرون بالمائة من مجموع الحوامل كن بكريات وذات حملين 25.7% ، وذات ثلاثة أحمال كن 18.3% ، وذات أربعة أحمال كن 6.5% ، وذات خمسة أحمال كن 21.7% ، وأكثر من خمسة أحمال كن 7.8% . أوضحت الدراسة أن تقديرات الوزن عند الولادة كان متوسط 3422 جرام \pm 250 جرام أوجد الباحث وأكد الدراسة أن معادلات جهاز الموجات فوق الصوتية ماركة الوكا يعطي التقدير المناسب من حيث الدقة والأوزان في الحمل (عند الولادة).

وأكدت الدراسة أيضاً أن هنالك علاقة مباشرة قوية بين محيط بطن الجنين ووزن الجنين.

Abbreviations

1. (AC) : Abdominal circumference
2. (AFI) : Amniotic fluid index
3. (AFV) : Amniotic fluid volume
4. (AIUM) : American Institute of Ultrasound in Medicine
5. (AP) : Anteroposterior
6. (BPD) : Biparietal diameter
7. (BPP) : Biophysical Profile
8. (CGW) : Calculated gestational weeks
9. (CH) : Head circumference
10. (CSF) : Cerebrospinal fluid
11. (CSP) : Cavum septum pellucidum
12. (CW) : Continuous wave
13. (EDC) : Expected date at confinement
14. (EVS) : Endo vaginal sonography
15. (FL) : Femur length
16. (FTA) : Fetal trunk cross sectional area
17. (FT) : Fetal tone
18. (GS) : Gestational sac
19. (HC) : Head circumference
20. (HL) : Humeral length
21. (HX) : History
22. (HZ) : Hertz

23. (KGW) : Known gestational week
24. (KED) : Known examination day
25. (LMP) : Last menstrual period
26. (LV) : Length vertebrae
27. (Obs) : Obstetric
28. (PW) : Pregnancy week
29. (U/S) : Ultrasound
30. (SOMAR) : Sound navigation and ranging
31. (TVS) : Transvesical sonography
32. (BW) : Birth weight
33. (FW) : Fetal Weight
34. (SD) : Standard Deviation

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