الاية

بسم الله الرحمن الرحيم

قال تعالى ((**فَتَعَالَى اللَّهُ الْمَلِكُ الْحَقُّ وَلَا تَعْجَلْ بِالْقُرْآنِ مِنْ قَبْلِ أَنْ يُقْضَى إِلَيْكَ وَحْيُهُ وَقُلْ رَبِّ زِدْنِي عِلْمًا**)) (١١٤)

صدق الله العظيم

(١١٤)سورة طه الاية

Dedication

I dedicate my research with love and appreciation to

My Father The candle of knowledge

My Mother the river of kindness

My Brothers, Sisters, Friend and my colleagues for their continuous and unconditional support

I wish them all great success and happiness in their lives

Acknowledgement

I would like to thank God for lightened my way ,vanishing all barriers that I faced, giving me power and determination to complete my study.

I would like to express my thank and grateful to my supervisor Dr.sana Eltahir Consultant hematologist Associated professor Alneelain University for her guidance, encouragement and continuous support during conducting this study.

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I would like to thank all newborns and their mothers who participated in this study

Finally my thanks and appreciations extended to everyone who encouraged, advised and help me to complete this study

Abstract

This is a cross sectional study that aimed to measure some hematological parameters of neonatal cord blood. This study was conducted in Khartoum and Ibrahim Malik teaching hospitals during a period of four months (from February to June 2011) .Total of 100 Blood samples were collected from the umbilical cord of the newborns babies into sample bottles containing EDTA anticoagulant adequate for 2.5 ml of blood. All samples were analyzed for different haematological parameters complete blood count and reticulocyte count by using an automatic multi-parameter blood cell counter (Sysmex KX-N21) for CBC, and special reticulocyte stain (Brilliant creysl blue) for reticulocyte count. The data entry and analysis was done on computer package SPSS (Statistical Packages of Social Sciences).The study showed that hemoglobin mean value of healthy newborn cord blood at birth was (15.0 ± 1.6)g/dl with range of (11.8 -18.2)g/dl Where as the mean of total WBCs count was (11.4±4.3)x10^9/l with range of (2.8-20.0) x 10^9/l. The mean of RBCs was (4.43±0.48)x10^{12}/l with range of (3.47-5.39)x10^{12}/l and Platelet count mean(239 ±60) x10^9/l with range of (119-359) x10^9/l. Hct mean was (47.8± 5.3)% with range of (37.2-58.4)%. MCV mean (107.7±6.8)fl with range of (94.1-121.3)fl, MCH mean (33.9±2.1)pg with range of (29.7-38.1)pg and MCHC mean (31.5±1.6) g/dl with rang of (28.3-34.7)g/dl. Neutrophil mean(55±8)% with range of (39-71)%,lymphocyte mean(40±8)% with range of (24-56)%, monocyte mean (3 ±3)with range of (0-9)%, eosinophil mean (3±2)% with range of (0-7)% and basophil mean (0.04±0.2)% with range of(0-1%) . Reticulocyte count mean (4.9±4.3)% with range of (2.3-7.5)% and NRBCs mean was (4.3±5.2)/100WBCs with range of (0-14.7)/100WBCS.

ملخص الدراســــــــــــة

هذه دراسة مـ قطعية هدفت لـ قياس معدلات نسب الدم من الحبل السري للاطفال حديثى الولادة .اجريت هذه الدراسة لتكوين قاعدة معلومات لمعدلات نسب الدم عند الاطفال حديثى الولادة .أجريت هذه الدراسة في مستشفى الخرطوم التعليمى ومستشفى ابراهيم مالك التعليمى خلال فترة أربعة أشهر فى.الفترة من فبراير حتى يونىو 2011 .تم تجميع مائة عينة دم من الحبل السري للأطفال المواليد الجدد.تم سحب 2.5 مل من الدم في حاويات تحتوي على مادة مانعة للتجلط EDTA. تم تحليل جميع العينات لمختلف معدلات الدم الكامل العد والفرز وعدد الخلايا الشبكية واستخدام صبغة خاصة لتعداد الخلايا الشبكية. ،CBCل (Sysmex KX-21 N) الدم باستخدام الحزم الإحصائية للعلوم) SPSS و قد تم إدخال البيانات وتحليلها على جهاز الكمبيوتر الحزمة .(الاجتماعية

(أظهرت الدراسة ان متوسط خضاب الدم عند الاطفال حديثي الولادة (15.0 ± 1.6 g/dl ومداها

(متوسط تعداد كريات الدم البيضاء كان(11.4±4.3 , 18.2- 11.8)) x10^9/l ومداها g/dl ((متوسط تعداد كريات الدم الحمراء(4.43±0.48 (20.0-2.8 x10^9/l ومداها (3.47- x10^{12}/l ومتوسط حجم كرات الدم الحمراء المحشوة كان(47.8± 5.3)% ومداها (37.2- x10^{12}/l 5.39) ومتوسط fl(ومداها (121.3-94.1 fl(58.4)% ومتوسط حجم كرة الدم الحمراء الواحدة (107.7±6.8 ومتوسط pg(ومداها (38.1-29.7 pg(تركيز خضاب الدم فى كرة الدم الحمراء الواحدة (33.9±2.1 g/dl(ومداها (34.7-28.3 g/dl (تركيز خضاب الدم فى كرات الدم الحمراء بالعينة (31.5±1.6 ومتوسط عدد صفائح الدم

ومتوسط الخلايا المتعادلة 55±8) %) ومداها x10^9/l (ومداها (359-119 x10^9/l (60 ± 239) ومتوسط اللمفاويات(40±8)% ومداها (56-24)%.ومتوسط الوحيدات ((3 ±3 ومداها %(71- 39) (9-0)%.ومتوسط الخلايا الحمضية (3±2)% ومداها (7-0)%, ومتوسط الخلايا القاعدية (0.04± 0.2)% ومداها (1-0%) ومتوسط عدد الخلايا الشبكية (4.9±4.3) (7.5-2.3)% ومداها ومتوسط WBCs .ومداها (4.3±5.2)/100 WBCs كريات الدم الحمراء ذات الانوية (4.3±5.2)/100 WBCs

List of abbreviation

2,3-BPG	2,3-bisphosphoglycerate
C.S	Cesarean Section
C.TWBCs	Corrected Total White Blood Cells
DC	Direct Current
DNA	Deoxyribonucleic acid
2,3-DPG	2,3-bisphosphoglycerate
EPO	Erythropoietin
Fl	Femtoliter
GM.CSF	Granulocyte Megakaryocyte Colony Stimulating Factor
Hb	Hemoglobin
Hct	Hematocrit
HDN	Hemolytic Disease of New borns
HGB	Hemoglobin
IL	Interleukin
MK	Megakaryocyte
MCH	Mean Corpuscular Hemoglobin
MCHC	Mean Corpuscular Hemoglobin Concentration
MCV	Mean Corpuscular Volume
nRBCs	Nucleated Red Blood Cells
NVD	Normal Vaginal Delivery
RBCs	Red Blood Cells
RNA	Ribonucleic acid
SD	Standard Deviation
SLS	Sodium Lauryl Sulfate
TPO	Thrombopoitein
UCB	Umbilical Cord Blood
WBCs	White Blood Cells

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