بسم الله الرحمن الرحيم

قال تعالى :

﴿لَقَدْ أَرْسَلْنَا رُسُلَنَا بِالْبَيِّنَاتِ وَأَنزَلْنَا مَعَهُمُ الْكِتَابَ
وَالْمِيزَانَ لِيَقُومَ النَّاسُ بِالْقِسْطِ وَأَنزَلْنَا الْحَدِيدَ فِيهِ
بَأْسٌ شَدِيدٌ وَمَنَافِعُ لِلنَّاسِ وَلِيَعْلَمَ اللَّهُ مَن يَنصُرُهُ
وَرُسُلَهُ بِالْغَيْبِ إِنَّ اللَّهَ قَوِيٌّ عَزِيزٌ﴾

صدق الله العظيم

الحديد اية (25)

Dedication

To my ……. Parents

To my …… Wife and daughters

To my …… Brother and sister

To my … Friends

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List of Contents

الآية	I
Dedication	II
Acknowledgement	III
List of contents	VI
List of abbreviations	VII
List of figures	VIII
List of tables	IX
English abstract	X
Arabic abstract	XII
Chapter One Introduction and Literature Review	
1.1 General Introduction	1
1.1.1 Classification of Anemia	2
1.1.1.1 Morphologic Approach	2
1.1.1.2 Pathophysoilogic (Function or Kinetic)	3
1.1.2 Symptoms and Sings of Anemia	3
1.2 Iron Metabolism	4
1.2.1 Amount and Distribution	4
1.2.2 Distribution of Iron in the Body	4
1.2.3 Hemoglobin Iron	4
1.2.4 Tissue Iron	5
1.2.4.1 Storage or Available Iron	5
1.2.4.2 Non-available Iron	6
1.3 Plasma (Transport) Iron	6
1.4 Absorption of Iron	7
1.5 Dietary Iron	8
1.5.1 Heme Iron	8
1.5.2 Non- Heme Iron.	8
1.6 Iron Requirement	9
1.7 Factors Modulating Iron Absorption.	10
1.7.1 Influence of Iron Stores.	10
1.7.2 Influence of Erythropoietic Activity.	10
1.8 Excretion.	10
1.9 Iron Balance	11
1.10 Introduction to (ID)	12
1.11 Sequence of Events	13
1.11.1 Depletion of Iron Stores	13
1.11.2 Iron deficiency erythropoiesis	13
1.11.3 Tissues Effects of Iron Deficiency	15
1.12 Pathogenesis of IDA	16
1.12.1 Increase Physiological Demand for Iron	17
1.12.2 Pathological Blood Loss	17
1.12.3 Inadequate Intake	17

1.13 Classification of IDA	18
1.14 Causes of IDA	18
1.15 Pervious study	19
1.16 Rational	21
1.17 Objectives	22
1.17.1 General Objective	22
1.17.2 Specific Objectives	22
Chapter Two: Materials and Methods	
2.1 Study Approach	23
2.2 Study Design	23
2.3 Study Population	23
2.4 Study Area	23
2.5 Ethical Consideration	23
2.6 Study Samples	23
2.7 Study Duration	23
2.8 Data Collection Method and Tools	24
2.9 Data Presentation	24
2.10 Laboratory Procedures	24
2.10.1 Collection of Blood Sample	24
2.10.2 Serum Iron	24
2.10.2.1 Principle	24
2.11 Reagent	25
2.12 Reagent Preparation	25
2.13 Serum Ferritin	25
2.13.1 Principle	25
2.13.2 A 25 Bio system Analyzer	25
2.13.2.1 Working Theory	25
2.13.2.2 Operation Procedure	26
2.14 Complete Blood Cell Count	26
2.14.1 Principle	26
2.14.2 Hemoglobin Measurement	26
2.14.3 Erythrocytes Analysis	27
2.14.4 Reagents	27
2.15 Procedure	27
2.16 Preparation of Blood Film	27
2.17 Equipments	28
2.18 Reagents	29
Chapter Three: Result	
3.1 Result	30
Chapter Four: Discussion, Conclusion and Recommendation	
4.1 Discussion	46
4.2 Conclusion	46
4.3 Recommendation	49
Chapter Five: References and Appendices	
5.1 References	50
5.2 Appendices	55

Abbreviations

CBC:	Complete Blood Count
cm	Centimeter
DW:	Distilled Water
EDTA :	Ethylene Diamine Tetra – Acetic Acid
Fl:	Femto Liter
Hb:	Haemoglobin
ID:	Iron Dificiency
IDA :	Iron Dificiency Anemia.
MCH:	Mean Cell Haemoglobin
MCHC:	Mean cell Haemoglobin Concentration.
MCV:	Mean Cell Volume.
nm:	nano meter
P/B:	Peripheral blood
PCV:	Packed Cell Volume
Pg:	pico gram
RBCs:	Red Blood Cell
SUST:	Sudan University of Science and Technology
TIBC :	Total iron binding capacity
TWBCs:	Total White Blood Cell.
WHO:	World Health Organization

List of Figures

Figures name	Title	Page
Fig (3.1)	Distribution of students group according to age	31
Fig (3.2)	Mean of hemoglobin concentration (g/dl) among different age groups.	32
Fig (3.3)	Mean of PCV (%) among different age groups.	33
Fig (3.4)	Mean erythrocyte count (106/ul) among different age groups.	34
Fig (3.5)	Mean of MCV (fl) among different age groups.	35
Fig (3.6)	Mean of MCH (pg) among different age groups.	36
Fig (3.7)	Mean of MCHC (%) among different age groups.	37
Fig (3.8)	Mean of TLC (10^3/ul) among different age groups.	38
Fig (3.9)	Mean of platelets (10^3/ul) among different age groups.	39
Fig (3.10)	Mean of serum iron in the study population ($\mu g/dl$) among different age groups.	40
Fig (3.11)	Mean of serum ferritin ($\mu g/l$) among different age groups.	41
Fig (3.12)	Morphology of red blood cells	42
Fig (3.13)	HB Concentration in the study group	43

List of tables

Tables number	Title	Page
Table (1.1)	Classification of anemia based on RBCs size	3
Table (1.2)	Causes of IDA	19
Table (3.1)	Group statistics	44
Table (3.2)	Hematological values for normal individuals	45

Abstract

This is a descriptive, and cross – sectional study conducted to detect Iron Deficiency Anemia in male primary school children in Karari locality, Khartoum state in the period between November 2008 to May 2009.

One hundred samples were collected from male students from different schools of Karari locality, Khartoum state with varying age between 6 to 18 years.

The students were classified into three groups according to age.

Group one with age varying between 6 to 10 years, group two between 10 to 14 years, and group three, between 14 to 18 years .

2.5 ml of blood was collected from each student into EDTA test tube, and then analyzed for CBC using sysmex automated blood analyzer.

Other 2.5 ml of blood was collected into plain tubes which without anticoagulant serum was separated using centrifuge, and then analyzed for serum iron, and serum ferritin using A 25 Bio system analyzer.

Blood films were prepared and examined for red cells morphology. The results showed the following.

Group one the mean of hemoglobin was 12.0 g/dl, mean of PCV was 36.6%, mean of RBCs count was 4.8 X 10^{12}/L, mean of MCV was 78.4 fl, mean of MCH was 25.8pg, mean of MCHC was 33.1%, mean of serum iron was 39.7µg/dl and mean of serum ferritin was 137.3 µg/l.

Group two mean of hemoglobin was 12.7 g/dl, mean of PCV was 38.9 % , mean of RBCs count was 4.7×10^{12}/L , mean of MCV was 82.7 f/l, mean of MCH was 26.6 pg mean of MCHC was 32.3% , mean of serum iron was 56.1 µg/dl , and mean of serum ferritin was 129.5 µg/l.

Group three mean of hemoglobin was 12.3 g/dl, mean of PCV was 36.8 %, mean of RBCs count was 4.4×10^{12}/L, mean of MCV was 80.6 fl , mean of MCH was 27.6pg, mean of MCHC was 33.6 %, mean of serum iron was 59.7 µg/dl, and mean of serum ferritin was 105.1 µg/l.

This study concluded that IDA was not common among the students of primary schools in Karri locality.

ملخص البحث

أجريت هذه الدراسة الوصفية المقطعية لقياس وجود انيميا نقـص الحديـد بيـن الطلاب الذكور بمدارس الأساس بمحلية كرري بولاية الخرطوم في الفترة من نوفمـبر 2008 إلي مايو 2009م.

تم تقسيم الطلاب إلي ثلاث مجموعات حسب اعمارهم وذلك كالأتي:

المجموعة الأولي تتراوح أعمارهم ما بين 6 – 10 سنوات. المجموعـة الثانيـة اعمارهم ما بين 10 – 14 سنه. والمجموعة الثالثة ما بين 14 – 18 سنه. تم جمع (100) عينة دم بواسطة الحقن والسحب من الوريد في انابيب بها مادة مانعة للتجلط (EDTA) لإجراء صورة الدم الشاملة ومعاملات كـرات الـدم الحمـراء وذلـك باسـتخدام جهاز (Sysmex). كما تم جمع 100 عينة دم أخـرى فـي انـابيب ليـس بهـا مـادة مانعـة للتجلط وذلك لإجراء قياس مستوي الحديد في الـدم وتـم ذلـك باسـتخدام جهـاز (A25 Bio system). كما تم فرد أفلام من الدم لدراسة شكل كرات الدم الحمراء . وأظهرت النتائج الأتي:

في المجموعة الأولي التي أعمارها ما بين 6 -10 سنوات.

كان متوسط خضاب الدم 12 جرام/مل بينمـا كـان متوسـط حجـم خلايـا الـدم المتراصة 36.6% وكان متوسط عدد كرات الدم الحمراء هو 4.8 × 10^{12} بينما كـان متوسط حجم كرات الدم الحمراء fl78.4% وايضا كان متوسط خضاب الدم فـي كـرة الدم الحمراء هو pg25.8 بينما كان متوسط تركيز خضاب الدم في كرة الـدم الحمـراء هو 33% وكان متوسط نسبة الحديد في الدم هي 39.7 μ g/dl والفرتين 137.3 μ g/l

أما المجموعة الثانية فأظهرت النتائج الآتية:

كان متوسط خضاب الدم 12.7 جرام/ مل بينما كان متوسط حجم خلايا الـدم المتارصة 39.9% وكان متوسط عدد كرات الدم الحمراء هو 4.7 × 10^{12} بينما كـان متوسط حجم كرات الدم الحمراء fl82.7 وقد كان متوسط خضاب الدم في كرة الـدم الحمراء هو pg26.6 بينما كان متوسط تركيز خضاب الدم في كـرة الـدم الحمـراء هـو 32.3% وكان متوسط نسبة الحديد في الدم هي 12 59.1 μ g/dl والفرتين 129.5 μ g/l.

أما المجموعة الثالثة فأظهرت النتائج الآتية:

كان متوسط خضاب الدم 12.3 جرام / مل بينما كان متوسط حجم خلايا الـدم المتارصة 36.8% وكان متوسط عدد كرات الدم الحمراء هو 4.4 × 10^{12} بينما كـان

متوسط حجم كرات الدم الحمراء fl80 وقد كان متوسط خضاب الدم في كرة الــدم الحمراء هو pg27.6 بينما كان متوسط تركيز خضاب الدم في كـرة الـدم الحمـراء هـو 33.6% وكان متوسط نسبة الحديد في الدم هي 59.7 $^{\mu}$ g/dl والفرتين 105.1 $^{\mu}$ g/l.

ومن استعراض هذه النتائج للثلاثة مجموعـات يتضـح أن هـذه الدراسـة لا تظهـر وجـود لانيميا نقص الحديد في هذه المجموعات.