بِسْمِ اللّهِ الرَّحْمَنِ الرَّحِيمِ

قال الله تعالى

يَا أَيُّهَا النَّاسُ اتَّقُواْ رَبَّكُمُ الَّذِي خَلَقَكُم مِّن نَّفْسٍ وَاحِدَةٍ وَخَلَقَ مِنْهَا زَوْجَهَا وَبَثَّ مِنْهُمَا رِجَالاً كَثِيرًا وَنِسَاء وَاتَّقُواْ اللّهَ الَّذِي تَسَاءَلُونَ بِهِ وَالأَرْحَامَ إِنَّ اللّهَ كَانَ عَلَيْكُمْ رَقِيبًا

صدق الله العظيم

سورة النساء الآية رقم 1

Dedication

I dedicate this work with much love and appreciation:

To my family who always has been a brick wall that can lean and depend on forever.

To soul of my best uncle ever.

To my best friends, colleagues, teachers, past and present and every body I know him.

To all patients who are suffering from sickle cell anemia and their families.

Acknowledgment

First of all I would like to thank God for guide and give me the health and patience to finish this research In particularly, my thank to Dr. Malik Hassan Ibrahim Alfadani for his useful advice and patience and stimulating discussion.

I am very grateful to Dr.Bakhieta Attalla Ibrahim for her help and support; also I would like to thank my friends and colleagues for their support and encouragement during this study.

I would also thank the sickle cell anemia patient's families, without them this thesis would not have been possible.

Finally, very special thank to my family for supporting me over the period of the study, to those and who have helped in one way or another, express my gratitude.

The responsibility for this thesis's shortcoming and errors is, of course exclusively my own.

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هذة الدراسه وصفيه ، تحليليه عبر قطاعات المستشفى،وتقوم هذة الدراسة التي أتخذت في إطار دراسة حاملى مرض فا قة الدم المنجلى، من خلال دراسة 12 أسرة من أسر مرضى الانيميا المنجلية ،من قبائل غرب السودان المراجعين لعيادة الانيميا المنجلية بمستشفى جعفر بن عوف، فى الفترة من شهر سبتمبر 2008 الى فبراير 2009 بولاية الخرطوم.

تم إعلام المرضي بأهداف البحث وأخذت موافقتهم، ثم أخذت مائة عينة دم . 2.5 مل من كل مريض في حاويات تحتوي علي مانع التجلط (EDTA) . تم إجراء اختبارات تعداد الدم الكامل، اختبار التمنجل و الرحلان الكهربائي لخضاب الدم.

تم استخدام جهاز (Sysmex) ر قم (Kx 21N) يعمل أوتوماتيكيا، جهاز الرحلان الكهربائي لخضاب الدم و برنامج للتحليل الإحصائي)الحزم الإحصائية للعلوم الاجتماعية نسخة ر قم 13 (.

و قد أظهرت النتائج الإحصائية فى هذة الدراسة أن نسبة الذكور للاناث هى(53) الى(47) علي التوالي كما وجد أن فحص التمنجل أيجابى بنسبة(% 80) وسلبى (20%) ،والرحلان الكهربائى وضح أن نسبة مرضى فقر الدم المنجلى (23%)، وحاملى المرض(57%) وغير المصابين (20%) .

وجد أن متوسط أعمار المرضى هو(13.17) و حاملى المرض هو(31.48).و متوسط تركيز خضاب الدم فى المرضى((7.56وفى حاملى المرض(11.8) .

متوسط تعداد كريات الدم البيضاء(44(11. وكذلك متوسط الصفائح الدموية (434.6) عند مرضى فا قة الدم المنجلى ، و عند حاملى المرض (7.54) ، (287.3) على التوالى.

خلصنا الى أن مرض فا قة الدم المنجلى ذو تردد عالى فى قبائل غرب السودان نتيجة لكثرة تزاوج الا قارب فيما بينهم،وأعلى نسبة كانت بين قبيلة المسيرية وبلغت نسبة فا قة الدم المنجلى لديهم(%(26.09وحاملى المرض(17.54%) وأدناها كانت فى قبيلة الهوسا للمرض (4.35%)ولحاملي المرض (5.26%) فى هذة الدراسة .

Abstract

This study a hospital analytical, descriptive, cross sectional study was conducted to determine the sickle cell trait frequency in 12 families from Western Sudan referred to Gaffer Ibn Auf hospital in Khartoum state in the period from November 2008 to February 2009.

Informed concent was taken from one hundred (100) individuals from 12 families from Western Sudan and 2.5 ml of venous blood in ethylene-diamine-tetra-acetic acid (EDTA) container was collected from each and investigated for precence of HbS, complete blood count (CBC), sickling test and Hb electrophoresis.

Fully automated haematological analyzer (Sysmex Kx 21N), Electrophoresis tank, power pack and statistical package for social sciences (SPSS) computer program version 13 for data processing and analysis were used.

Participants in this study included 53 males and 47 females, sickling test showed (80%) positive and (20%) negative. Hb electrophoresis shown (57%) sickle cell trait, (23%) were sickle cell disease and (20%) had normal haemoglobin.

The mean age of the sickle cell disease patients was (13.16) and sickle cell trait (31.48). And mean of haemoglobin concentration among the (Hb SS) patients was (7.56), while in (Hb AS) patients (11.8).

The total leukocytes counts mean (11. 44) and platelets counts mean (434.6) in sickle cell disease while in sickle cell trait (7.54), (287.3) respectively.

In conclusion, the sickle cell anaemia is high frequent in Western Sudan tribes due to consanguineous marriages, Meseria tribe had the highest percentage of sickle cell disease (26.09%) and sickle cell trait(17.54%) while Howsa tribe had the lowest frequency of sickle cell disease(4.35%) and sickle cell trait(5.26%) among this study population.

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Hb	Haemoglobin
MCV	Mean cell volume
MCH	Mean cell haemoglobin
MCHC	Mean cell haemoglobin concentration
PCV	Packed cell volume
CBC	complete blood count
TWBCsC	Total white blood cells count.
TRBCsC	Total red blood cells count.
WBC	White blood cell.
RBC	Red blood cell.
LCAT	Lecithin cholesterol acyl transferase
2,3-DPG	2,3 diphosphoglycerate
Hb S	Haemoglobin S
Hb A	Haemoglobin A
Hb E	Haemoglobin E
Hb C	Haemoglobin C
Hb SC	Haemoglobin SC
SCD	Sickle cell disease
G-6-PD	Gglucose-6-phosphate dehydrogenase
Hb SE	Haemoglobin SE
HbSD	Haemoglobin SD
TEB	Tri EDTA borate
HPLC	High performance liquid chromatography
DNA	Deoxyribo Nucleic Acid
RDW	Red cell distribution wide
ESR	Erythrocytes sedimentation rate
OCHF	Optical cytometer hydro focus free
Ig	Immunoglobulin
ALL	Axis loss light
FSC	Forward side scatter
SPSS	Statistical package for social sciences

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