DEDICATION

To the heart of my life my mother and Soul of my father. To my brothers and sister, to my teachers and colleagues. I dedicate this work.

ACKNOWLEDGEMENT

First of all thank to my **GOD** for being whom am I , and help me to participate in M.Sc program.

I would like to express my sincere thanks and gratitude to my learned supervisor Dr. Malik Hassan Ibrahim Alfadni , Head department of Hematology , SUST, college of medical laboratory , for his close supervision , encouragement, support, advise and helpful.

I am also emphasize my hearty thanks to my brother &colleague Nazar Abdelhafiz Osman for his helpful in samples collection , and my dear brother Salah Ahmed Mustafa for the typing& organization of the thesis.

I am also extend my thanks to all people in hejlij areas for their helpful in sampling collection. And to any one assisted me in whatever needed.

الخلاصة

هذة دراسة وصفية تحليلية مقطعية **هدفت لمعرفة أنتشار نقص الدم المنجلى فى قبيلة المسيرية . وتم تجميع العينات من مائة شخص من المسيرية (بطن أولاد عمران)واجريت الدراسة فى منطقة الهجليج جنوب كردفان فى الفترة من اكتوبر 2008وحتى فبراير 2009وقد هدفت الى معرفة وجود مرض نقص الدم المنجلى وحامليه الاصحاءوعددهم فى قبيلة المسيرية وفحصت لجميع العينات صورة الدم الكاملة والفحص المنجلى والرحلان الكهربائى.**

نتائج الفحوصات أظهرت أن تردد مرض نقص الدم المنجلى هو 12% وحاملى المرض 35% والاصحاء 53%. وقد خلصت هذه الدراسة الى أن : المصابين بالمرض مستوى الهيموغلوبين لديهم أقل من 12جرام فى ديسيللتر وأغلبهم فى سن أصغر من 30سنة . وأن حاملى المرض من أولاد العمومة و الدم الواحد مرتفع جدا تصل 77% نتيجة التزاوج بينهم ونقص المعرفة عن هذا المرض وطريقة أنتقاله.

وان متوسط خضاب الدم فى كرية الدم الواحدة فى المرضى 25.39 وحاملي المرض 24.62 متقارب وكذلك متوسط حجم الخليةفى المرضى 87.1 وحاملي المرض 77.03 ومتوسط تركيز خضاب الدم فى الخلية الواحدة عند المرضى 31.97 وحاملي المرض 31.89وعدد الصفائح الدموية فى المرضى 394000و حاملي المرض 238000وهى نسب متقاربة . ولكن يكمن الاختلاف بين المرضى وحاملي المرض فى عدد كريات الدم البيضاء الذى يكون مرتفع عند المرضى وطبيعى عند حاملي المرض . وكذلك الاختلاف يكمن فى حجم الكريات الحمراء المضغوطة وعدد الكريات الحمراء اللذان متوسطهما منخفض عند المرضى وطبيعى عند حاملي المرض.

وعند اجراء الفحص المنجلى لحاملي المرض كانت نسبة النتيجة السلبية 36.4% ونسبة النتيجة الايجابية 63.6% مما يعنى ان الفحص المنجلى ليس دقيق وانما هو فحص مبدئى فقط.

ABSTRACT

This was cross-sectional, analytical and prospective study conducted in El hejlij area during period of October 2008 to February 2009 .The study was aimed to determine the occurrence of Sickle cell disease and Sickle cell traits among Messira tribe.

The study was carried out in 100 predetermined random samples: from Messira tribe (Old Omran). All Samples were tested for the hemoglobin S using Complete blood count(CBC), Sickling test and Hb-electrophoresis.

Results were showed that the frequency of Hb SS was 12%, Hb AS was 35% and Hb AA was 53%.

The conclusion of the study was that Hemoglobin levels in sickler patients (Hb SS) always under 12g/dl , and these patients were under 30 years of age .The frequency of Hb AS among consamuinity cousins was very high due to marriage between them and absent of education about sickle cell disease.

The means of MCH in Sickle cell disease(SCD) was25.39pg, MCV was 87.15fl, MCHC was 31.97g/dl, PLT was 394×10^3. parameters were so close to the Sickle cell trait(SCT) which was MCV 77.03fl, MCH 24.62pg, MCHC 31.89g/dl, PLT238×10^3 .The difference was in WBC which was high in SCD, but normal in SCT. RBC and PCV were very low in SCD, normal in SCT.

In Sickle cell trait patients Sickling test showed 36.4% negative results, and 63.6% positive results, which meant that Sickling test insignificant for detection of Sickle cell disease, but only Screening test.

List of Contents

Chapter one

Introduction & Literature Review

CHAPTER TWO

Materials and Method

List of tables

List of figures

List of abbreviations

Abbreviations	Meaning
Hb	Hemoglobin
SCD	Sickle cell disease
O_2	Oxygen molecule
Hb S	Hemoglobin of sickle cell
Hb A	Hemoglobin of normal person
Hb AS	Hemoglobin of sickle cell Trait
Hb C& Hb D &Hb E	Hemoglobinopathy
CBC	Complete Blood Count
NaCl	Sodium Chloride
TWBC	Total of white blood cell count
RBC	Red blood cell count
PCV	Packed cell volume
MCH	Mean cell Hemoglobin
MCV	Mean cell volume
MCHC	Mean cell Hemoglobin Concentration
PLT	Plate let count

L%	Percentage of lymphocytes in 100 WBC
N%	Percentage of Neutrophil in 100 WBC
M%	Percentage of Monocytes& Esinophil &Basophil in 100 WBC
SD	Standard Division