
Dedication

This Study is Dedicated

To

**My dear mother, who strived all nights attending to me
and seeking my comfort and well-being;**

**My dear father, who endured hardships to ensure my
success,,,,,,,,,,,,,**

**My revered doctors and teachers My dear brothers and
sisters who always support me,,,,,,,,,,,,,**

**My friend, soul-mate and path fellow, my beloved
husband Mohammed and our two kids Asim and
Amro,,,,,,,,,,,,,**

To the pure soul of martyr Anwar,,,,,,,,,,,,,

**To my colleagues in the National Council for Strategic
Planning and the Clinic Unit,,,,,,,,,,,,,**

A knowledge

The greatest thank to AllAH.

I would like to express my deep gratitude and thanks to everyone who helped me through this work.

I would like to express my appreciation to my supervisor **Dr. MohiEldin Abass** faculty of Medical laboratory Science Sudan University of science and technology. for his guidance and support during conducting this study, his keen supervision, valuable advice, and continuous encouragement to make this research possible .I am deeply indebted to **Dr. ELyassa Mustafa**.

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My appreciation to all those who helped me to realize importance of this research.

Abstract

A hospital-based analytical descriptive study was conducted in Mohammed Salih Idress center from March 2011 to June 2011, to determine the morphological and physiological patterns of anemia among Sudanese patients with Gastro intestinal bleeding

Hundred Gastro intestinal patients were those who fulfilled the clinical diagnosis of Gastro intestinal bleeding of both gender, from different region of Sudan and different tribe, were informed about the study expected outcome and agreement of participation was obtained. The controls were normal not receive any treatment or transfusion in their life. A structured questionnaire was used to collect information about patients age, gender, tribe, blood vomiting, passing of black stool, history of bilharziasis, presence of splenomegaly and hepatomegaly, and laboratory investigations. Blood sample were collected from all patients and controls for use in laboratory investigation. Statistical package for social science (SPSS version 11.5) computer software was used for data analysis.

The results showed significant difference between the mean level of patients and control in the following parameters haemoglobin level, hematocrite, RBCs count, TWBCs, platelet count and RBCs indices (p value < 0.05).

The study explained that the patterns of peripheral blood picture among study group 46(46%) were normocytic normochromic type and consider to be highest prevalence morphological type of anemia among Gastro intestinal patient, 30(30%) were microcytic hypochromic comes in second class and 24(24%) were dimorphic picture.

Reticulocytes was significantly increase in compared to control group (p .value < 0.05)

The result showed significantly decrease in the mean level of haemoglobin , hematocrite, RBCs count, platelet count and RBCs indices among Chronic and acute gastro intestinal bleeding patients compared to control group(p.value <0.05)

The results showed insignificant difference between Mean Cell volume,Mean cell haemoglobin and Mean cell haemoglobin concentration.in patients with normocytic normochromic RBCs and control group(p.value>0.05),while they showed significantly decreased in patient with microcytic hypochromic RBCs and with dimorphic picture (p.value < 0.05).

اجريت هذه الدراسة الوصفية التحليلية بمركز محمد صالح إدريس في الفترة من شهر مارس 2011 وحتى شهر يونيو 2011 لتحديد نماذج فقر الدم الشكلي والوظيفي وسط المرضى السودانيين الذين يعانون من نزيف المسك المعوي

و قد أستوفت مائة مريض نزيف مسك معوي من كلا الجنسين ومن مختلف أقاليم و قبائل السودان التشخيص السريري حيث تم إخطارهم بنتائج الدراسة المتوقعة وتم الحصول على موافقتهم للمشاركة في الدراسة. كانت المجموعة الضابطة طبيعية حيث لم يتلقوا أي علاج أو نقل دم خلال حياتهم. تم استخدام إستبيان مصمم لجمع بيانات المرضى وتشمل العمر والذوع/الجنس والقبيلة والإستفراغ الدموي والفسحة السوداء وتاريخ الإصابة بالبلهارسيا وتضخم الطحال وتضخم الكبد تم أخذ عينات دم من كل المرضى مع ضوابط إستخدامها للفحص المعملية. وتم إستخدام الحزمة الإحصائية للعلوم الإجتماعية (الإصدارة 11.5) لتحليل البيانات.

أظهرت النتائج فرق واضح بين المستوى الدنيوي للمرضى والمجموعة الضابطة في معلمات مستوى الهيموغلوبين التالية ، ونسبة الخلايا الحمراء وعدد الخلايا الحمراء وعدد الخلايا البيضاء والصفائح الدموية (مستوى المعنوية أقل من 0.05).

أظهرت النتائج إختلاف واضح بين الخلايا الدموية الحمراء غير الناضجة من المرضى ومجموعة الضبط (مستوى المعنوية أقل من 0.05)

أظهرت النتائج فرق واضح في متوسط مستويات الهيموغلوبين والهيماتوكريت وعدد خلايا الدم الحمراء والبيضاء والصفائح الدموية لدى مرضى نزيف المسك المعوي المزمن والحاد (مستوى المعنوية أقل من 0.05)

أظهرت النتائج عدم وجود فرق بين قياس حجم خلايا الدم الحمراء عند المرضى اصحاب الخلايا الطبيعية ومجموعة الضبط (مستوى المعنوية أكبر من 0.05) بينما أظهرت إنخفاضاً واضحاً لدى المرضى اصحاب الخلايا الصغيرة والمزدوجة مستوى المعنوية أقل من 0.05).

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List of Abbreviations

Abbreviation: Full text

Hb: Haemoglobin

CBC : Complete blood count

Hct: Hematocrite

RBCs: Red blood cells

WBCs :White blood cells

PCV : Paked cell volume

RDW:Red cell distribution width

MCV: Mean cell volume

MCH: Mean cell haemoglobin

MCHC:Mean cell haemoglobin concentration

fl: femtolitter

Pg: Pico gram

RPI :Reticulocytes production index

LDH: Lactate dehydrogenase

TIBC:Total iron binding capcity

CLL : Chronic lymphocyte leukemia

G6-PD: Glucose6 phosphate dehydrogenase

CHr: Reticulocytes haemoglobin content

BUN: Blood urea nitrogen

NSAIDs: Non steroidal anti inflammatory drug

IDA : Iron deficiency anemia

GI : Gastro intestinal tract

HICN: Cyanomethemoglobin

LCD: Liquid crystal display

CRC : Corrected reticulocytes count

ARC: Absolute reticulocytes count