بسم الله الرحمن الرحيم

Republic of Sudan

Ministry of Higher Education and scientific Research

University of Shendi

Faculty of Graduate Studies and Scientific Research

Evaluation of Changes in Hematological Parameters and Iron Profile among School Children with Schistosoma Heamatobuim in Shendi Locality

A thesis Submitted to Shendi University for partial fulfillment of the MSC .Degree in Haematology

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الآيـــة

بسم الله الرحمن الرحيم

قال تعالى:

﴿ وَعَلَّمَ آدَمَ الأَسْمَاء كُلَّهَا ثُمَّ عَرَضَهُمْ عَلَى الْمَلاَئِكَةِ فَقَالَ أَنبِئُونِي بِأَسْمَاء هَـــؤُلاء إِن كُنتُمْ صَادِقِينَ (٣١) قَالُواْ سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ (٣٢) ﴾

الآيات (٣١ – ٣٢) من سورة البقرة

Dedication

To …….

The candle which burns to light my life

My mother

The one who supported me to realize my dream

My father

Those who have made it possible

My teachers

The one who helped me very much

My supervisor Dr .Mohammed Osman Ali

To who encouraged me

My sisters, my brothers and my friends

And special dedication to

All parents and primary school teachers

Acknowledgements

First I would like to thank Allah for blessing me

I would like to express my immense gratitude and appreciation to my supervisor **Dr. Mohammed Osman Ali** for this help full suggestion and close supervision through the study.

I am deeply indebted to the staff of faculty of Shendi University and especially to the staff of hematology department.

And finally all our thanks to everyone who supported and helped me through the study.

Abbreviations

Abbreviation	Mean
TIBC	Total iron binding capacity
HB	Hemoglobin
HCT	Hematocrit
MCV	Mean cell volume
MCH	Mean cell hemoglobin
MCHC	Mean cell hemoglobin cell
RDW-CV	Red cell distribution width coefficient variation
RDW-SD	Red cell distribution width standard deviation
PLT	Platelets
MPV	Mean platelets volume
PDW	Platelets distribution width
PCT	Plateletcrit
TWBCS	Total white blood cells
LYMPH	Lymphocytes
MID	Middle
GRAN	Granulocyte
EDTA	Ethylene diamine tetra acetic acid
SPSS	Statistical Package for The Social Sciences

ملخص البحث

أجريت هذه الدراسة الوصفية المقطعية التحليلية في مدينة شندي في الفترة من ابريل إلى سبتمبر عام ٢٠١٨م لتقييم التغيرات التي تحدث في قياس الدم الكامل ومستوى معاملات الحديد عند أطفال المدارس المصابين بالبلهارسيا البولية. في هذه الدراسة جمعت ٦٠ عينة بول ودم وريدي من تلاميذ المدارس في بعض قرى ريفي جنوب مدينة شندي. أعمارهم (١٢ – ١٥) سنة. تم فحص البول لكشف وجود بيض البلهارسيا البولية باستخدام تقنية الطرد المركزي. وأخذت ٢,٥ مل من الدم الوريدي على مضاد التجلط EDTA لقياس الدم الكامل وأخذت ٢,٥ مل في حاوية فارغة لتحضير المصل لفحص معاملات الحديد.

نتائج هذه الدراسة كشفت أن متوسط الهيموغلوبين والهيماتوكريت ومتوسط حجم الخلية تدل علي أن قيمة الاختلاف ذات أهمية وهي (.008,.003,001) علي التوالي. بينما المعاملات الأخرى ليست ذات اختلاف مهم وأيضا معاملات الحديد (حديد المصل,مجموع الحديد المرتبط وفريتيين المصل) كشفت علي أن الاختلاف ليس ذات أهمية (٠,٢ ,٠,٨ ,٠,٥) علي التوالي.

أخيرا نستنتج أن البلهارسيا البولية تتسبب في تغيير بعض معاملات الدم.

Abstract

This prospective descriptive cross sectional study was carried out in Shendi locality during the period of April to September 2018 to evaluate the changes in complete blood count (CBC) parameters and iron profile in School children infected with schistosoma heamatobuim.

A total 60 venous blood and urine samples were collected from school children from some villages which is located in south of shendi city, with age of (12-15) years. Urine samples were tested for schistosoma heamatobuim ova, 2.5 ml of venous blood sample was taken in EDTA anticoagulant for complete blood counting and 2.5 ml in plain container to prepare serum for iron profile measurement.

The results of current study revealed that the mean of (Hb), hematocrit (HCT) and mean cell volume (MCV) show significant variation with p .value of (.008,.003, .001) respectively, while other haematological parameters with no significant. Also iron profile (serum iron, TIBC and serum ferritin) revealed no significant variation with p .value of (0.2, 0.5, 0.8) respectively.

Finally we conclude that schistosoma infection can cause changes in some haematological parameter.

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