

Dedication

*To all patients who sustain the pain and their
hope to become well and fit*

*To those persons who burns to give a strong light
for the life of others*

To my lovely family with best wishes

To those who have made it possible:

My supervisor

Dr.Ali Suliman

My teachers

To whom encouraged me

My brothers

&

My friends

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Abstract

The study was carried out in Khartoum and Omdurman teaching hospitals to determine the effect of *Giardia lamblia* on hemoglobin level and total white blood cells. The study start in May 2007 to end July 2007, one hundred and half stool samples were collected and divided into three groups according to the questionnaire and microscopic examination of stool to non infected, infected before, and infected groups. Stool samples wee examined by wet preparation and concentration techniques; subsequently 150 blood samples were collected and analyzed using colorimetric method for haemoglobin level. The total white blood cells counts was done by using neubauer chamber. Differential leukocytes counts was used leishman stain to stain thin blood film.

In *Giardia Lamblia* the haemoglobin level was found to be 12.07 g\dl, 11.90 g\dl and 11.30 g\dl in non infected, infected before and infected groups respectively. The haemoglobin level decreased in infected group with *Giardia Lamblia* and show significant differences between non infected and infected group at $P<0.05$. Haemoglobin were found to be higher in males than those of females in all groups. The level of haemoglobin in males was found to be 12.9 g\dl, 12.3 g\dl and 11.6 g\dl in non infected, infected before and infected groups respectively. Whereas the level in females was found to be 11.30 g\dl, 11.6 g\dl and 10.9 g\dl non infected, infected before infected groups respectively.

Mean of total leukocyte counts was found to be 4800 c\cumm³, 5300 c\cumm³ and 6190 c\cumm³ in non infected, infected before and infected groups respectively. These results showed that *Giardia Lamblia* infected group had higher leukocyte count which exceed the mean of normal value. There was very highly significant differences at $p<0.01$ level between the non infected and infected group.

The mean of neutrophils count was found to be 58.86%, 57.88% and 65.02% in non infected, infected before and

infected groups respectively. There was very highly significant difference $P < 0.01$ between the non infected and infected groups.

Giardia lamblia had lower lymphocytes count 27.06% in infected group than 35.48% in infected before and 34.98% in non infected groups. The means showed that very highly significant difference $P < 0.01$ between the non infected and infected groups.

Infected group with *Giardia lamblia* had higher monocytes cells count 7.54% than those of infected before 4.76% and non infected group 4.80%. The means were very highly significant difference $P < 0.01$ between the non infected and infected groups.

Eosinophils had higher cells count 2.3% of individuals who were infected with *G.Lamblia*, than those of Infected before 0.43% and non infected group 0.20%, with very highly significant differences $p < 0.01$ between infected and infected before groups.

Finally the means of Basophils cell counts were found to be higher in individuals who were infected with *G.Lamblia* 0.40% than those who had previous infection 0.24%, and 0.10% in those who had no infection. There was significant different $p < 0.05$ between the infected and infected before groups.

الخلاصة

اجريت هذه الدراسة في مستشفى الخرطوم و امدرمان التعليمي بغرض التعرف على مرض الجارديا واثرها على الهيموغلوبين وخلايا الدم الالبيض فى الفترة مابين مايو ويوليو 2007.حيث تم فحص عينه تمثل مجتمع البحث(77 من الذكور و73 من الاناث) قسمت الى ثلاثة مجموعات بناءا على الاستبيان والفحص المجهرى للفسحه ، المجموعة الاولى لم تصاب من قبل بمرض الجارديا والثانية اصببت من قبل وتمت معالجتها اما الثالثة كانت حديثه الاصابه بالجارديا. كذلك تم جمع 150 عينه دم لمعرفة مستوى الهيموغلوبين، قياس مجموع خلايا الدم الأبيض وقياس خلايا الدم الأبيض.

أظهرت النتائج أن هنالك علاقة مابين المرضى حديثى الاصابه بالجارديا مع المجموعه التى لم تصاب من قبل ،فكانت متوسطات نتائج الهيموغلوبين لدى المصابين 11.30g/dl وهى اقل من نتائج المجموعه غير المصابه حيث كانت قيمتها 12.07g/dl واقل من المجموعه المصابه من قبل حيث كانت قيمتها 11.90g/dl بدرجة اختلاف معنوي $p<0.05$ بين الغير مصابين و المصابين.

كذلك أثبتت الدراسة أن الهيموغلوبين اعلى عند الذكور عن أولئك الإناث في كل مجموعات الدراسة فكانت 11.6g/dl عند الذكور المصابين و 12.3g/dl عند المصابين من قبل و 12.9g/dl عند الغير مصابين، بينما مجموعهم الإناث ألمصابه 10.9g/dl والمصابين من قبل 11.6g/dl و الغير مصابه 11.3g/dl .

أما نتائج خلايا الدم الالبيض كانت اعلى عند المصابين 6190c/cumm^3 عن أولئك المصابين من قبل 5300c/cumm^3 والغير المصابين 4800c/cumm^3 بدرجة اختلاف معنوي $p<0.01$ بين المصابين و الغير مصابين.

في حالة الخلايا المتعادلة وجد أن قيمة المجموعة المصابة 65.02% بينما قيمة المجموعة الغير مصابة 58.86% والمجموعة المصابة من قبل 57.88% بدرجة اختلاف معنوي $p<0.01$ بين المصابين و الغير مصابين.

وفي حالة الخلايا الليمفية وجدت أقل قيمة في المجموعة المصابة
27.06% بينما المجموعة المصابة من قبل 35.48% والمجموعة الغير
مصابة 34.98% بدرجة اختلاف معنوي $p < 0.01$ بين المصابين و الغير
مصابين.

وفي حالة الخلايا الأكلة الكبيرة وجدت أعلى قيمة في المجموعة المصابة
7.54% بينما المجموعة المصابة من قبل 4.76% والمجموعة الغير مصابة
4.80% بدرجة اختلاف معنوي $p < 0.01$ بين المصابين و الغير مصابين.

أما في حالة الخلايا الحامضية فوجدت أعلى قيمة في المجموعة المصابة
2.3% بينما المجموعة الغير مصابة 0.20% والمجموعة المصابة من قبل
0.43% بدرجة اختلاف معنوي $p < 0.01$ بين المصابين و المصابين من قبل.

وأخيرا في حالة الخلايا القاعدية فوجدت أعلى قيمة في المجموعة المصابة
0.40% بينما المجموعة المصابة من قبل 0.24% والمجموعة الغير مصابة
0.10% بدرجة اختلاف معنوي $p < 0.05$ بين المصابين و المصابين من قبل.

List of tables

Table	page
Table(1) Relation ship between sex and infection with <i>G.Lamblia</i> .	27
Table(2) The mean value of haemoglobin in three different groups.	27
Table(3) The mean value of total white blood cells count in three different groups.	28
Table(4) The mean value of neutrophils count in different groups.	28
Table(5) Lymphocytes count in different groups.	29
Table(6) The mean value of monocytes count in different groups.	29
Table(7) The mean value of eosinophils count in different groups.	30
Table(8) The mean value of basophils count in different groups.	30

List of Contents

Subject	Page
الآية القرآنية	
Dedication	I
Acknowledgement	II
Abstract	III
الخلاصة	IV
List of Table	V
List of content	VI
CHAPTER ONE	
1. Introduction	1
1.1.The flagellates	1
1.2. Classification	1
1.3 History	1
1.4 Epidemiology	3
1.5 Morphology	4
1.6Laboratory diagnosis	5
1.6.1 Microscopical	5
1.6.2 Serological	5
1.6.3 Detection of antigens in feces	6
1.7 Transmission	7
1.8 Life Cycle	8
1.9 Symptoms and pathogenesis	9
1.10 Mortality/Morbidity	11
1.11 Other intestinal flagellates	11
1.12 Etiology	13
1.13 Diet for Giardia	13
1.14 Treatment	14
1.15 Prevention and control	14
1.15.1 Water disinfection	14
1.15.2 Practice good hygiene	15
1.15.3 Avoid water that might be contaminated	15
1.16 Immunology	15
1.16.1 Innate and adaptive immunity	15
1.16.2 Cells of the innate immune system	16
1.16.3 Immune response to <i>Giardia</i> Intestinalis	18
1.16.4 Effectors mechanisms of the immune response	19
1.16.5 Antigenic variation in Giardia lamblia and the host's immune	20

1.17 Objectives	21
CHAPTER TWO	
2. Materials and methods	22
2.1 Study population	23
2.2 Direct examination of stool (wet preparation)	23
2.3 Concentration techniques for fecal specimen	23
2.3.1 Formal ether concentration techniques	23
2.3.2 Zinc sulphate floatation techniques	24
2.4 Total white blood cell count	24
2.5 Measurement of haemoglobin concentration	24
2.6 Differential leukocyte count	25
CHAPTER THREE	
3. Result	27
CHAPTER FOUR	
4 Discussion	34
4.1 Conclusion	36
4.2 Recommendation	36
References	37
Appendix	39