

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال الله تعالى

إِنَّ اللَّهَ وَمَلَائِكَتَهُ يُصَلُّونَ عَلَى
النَّبِيِّ يَا أَيُّهَا الَّذِينَ آمَنُوا صَلُّوا
عَلَيْهِ وَسَلِّمُوا تَسْلِيمًا

صدق الله العظيم

سورة الأحزاب الآية 56

Dedication

To my

Father,

Mother,

Brothers& sisters,

Supervisor,

Teachers

And those who suffer from

schistosomiasis

I dedicate this humble study

Acknowledgment

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Abstract

This study aimed to determine the sensitivity and efficiency of various techniques that are used for the diagnosis of intestinal and urinary schistosomiasis and aimed to compare the results obtained by these techniques with the routine wet preparation method. The rate of prevalence concerned with age and sex were comparable for the different methods.

The study determined the levels of infection by *S.mansoni* in New Halfa scheme and *S.haematobium* in three different areas in Khartoum North during the period from January to April 2009. The study included 400 specimens (200 stool samples for *S.mansoni* and 200 urine samples for *S.haematobium*). The overall prevalence of *S.mansoni* in New Halfa scheme was found to be 74%, and more frequent among the school children at the age group < 15years (87.7%).

The overall prevalence in Khartoum North was found to be 46% and the highest rate was found in Tibet Alahamda (61%) and more seen in school children (48.5%).

Amongst the diagnostic methods used for stool examination, the formal ether concentration technique proved to be the most sensitive method (74%) for detection of infection and to determine the mean egg count, followed by the modified Kato-Katz technique (68.5%) which gave results relatively similar to that obtained by the formal ether concentration technique. Both methods are suitable for field work. Other methods showed variably less sensitivity and quantitative efficiency. The study recommended that wet preparation is not suitable for detection of mild and chronic infections.

For the diagnosis of *S.haematobium*, the sedimentation and filtration techniques showed the same sensitivity (46%) but the filtration technique sometimes gave false positive results due to improper washing of filters. The hatching viability test gave weak results which attributed to immunity and to the fact that most of the children subjected to treatment during the past few months. So, this test can be used to assess the of the treatment and to determine

the effective dose. Efficiency showed less sensitivity and can be used in qualitative diagnosis and to determine the effectiveness of treatment.

مستخلص الدراسة

هدفت هذه الدراسة الى تحديد حساسية وكفاءة مختلف التقنيات المستخدمة في تشخيص البلهارسيا المعوية والبولية. كما هدفت ايضا الى المقارنة بين النتائج التي تم الحصول عليها من خلال هذه التقنيات مع طريقة المسحة اللينة الروتينية . وقد تضمنت الدراسة مقارنة معدل الاصابة في الفئات العمرية وجنس المريض مع النتائج المتحصل عليها بالتقنيات المختلفة.

حددت الدراسة مستويات الاصابة بالبلهارسيا المنسوية في مشروع حلفا الجديدة والبلهارسيا الدموية في ثلاث مناطق مختلفة بالخرطوم بحري خلال الفترة من يناير الى ابريل 2009. وشملت الدراسة 400 عينة (200 عينة براز للبلهارسيا المنسوية و 200 عينة بول للبلهارسيا الدموية). كان معدل انتشار الاصابة في حلفا الجديدة (74%) معظمها في الفئة العمرية 15-34 سنة (47.1%) ومعدل انتشار الاصابة في الخرطوم بحري (46%) ووجد اعلى معدل انتشار في منطقة طيبة الاحامدة معظمها في اطفال المدارس (48.5%).

من بين الطرق المستخدمة في تشخيص البلهارسيا المنسوية اثبتت طريقة الفورمال ايثر انها اكثر الطرق حساسية (74%) للكشف عن الاصابة وتحديد متوسط حساب البيض متبوعة بطريقة كاتو - كاتز المعدلة والتي اعطت نتائج مقاربة للنتائج المتحصل عليها بواسطة طريقة الفورمال ايثر. كلا الطريقتين تناسبان العمل الحقلي. اظهرت الطرق الاخرى اقل حساسية وكفاءة نوعية. وتوصي الدراسة بان تقنية المسحة اللينة غير مناسبة للكشف عن الاصابات الخفيفة والمزمنة.

لتشخيص البلهارسيا البولية اظهرت طريقتي الترسيب والترشيح نفس الحساسية (46%) ولكن طريقة الترشيح قد تعطي احيانا نتائج ايجابية خاطئة بسبب غسيل المرشحات غير الصحيح . وقد اظهرت نتائج طريقة التفقيس اقل حساسية ويمكن استخدامها في التشخيص النوعي ولتحديد كفاءة العلاج.

Abbreviations

BNHP	Blue Nile Health Project
Epg	Egg per gram
ELISA	Enzyme Linked Immuno Sorbent Assay
FDCT	Formal Detergent Concentration Technique
FECT	Formal Ether Concentration Technique
MKATO	Modified Kato Technique
OKATO	Original Kato Technique

Contents

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