Dedication

To my Father

To my Mother

Who gave me a hand to lighten the way for me..

To my Teachers

To my friends

Who helped me in my life and gave me the confidence to continue..

And to whom I feel about them with beautiful emotion..

To all of them I dedicated this project as sign of thanks..

Appreciation respect and love....

Acknowledgements

Thanks to ALMIGHTY ALLAH for helping me to finish this work, also a great thanks for my supervisor **Prof. Yousif Fadlallah Hamed Elnil** for his kindness advices and without whom this piece of work would have never seen light. Also I like to thanks all the staff in Microbiology Department for helping during the work. Thanks for all for the pleasant and favorable atmosphere they have created to push the work forward. Special gratitude is due to all my friends for their patience during the period of work. I wish to express deep gratitude for all those who offered me help through the course of this work.

ABSTRACT

This study was done to detect seroprevalence of syphilis among Ethiopian residents in Khartoum. Hundred blood samples were collected from Ethiopian individuals with different ages (15-45) and in both sex, the study was carried in the period from April to November 2014.

All samples were tested by using screening method ,Immuno Chromatogrphy Test (ICT) and then confirmed by Enzyme Linked Immunosorbent Assay (ELISA).

It was found that eight (8%) of the Ethiopian residents in Khartoum positive to syphilis. The positive samples by Immuno Chromatography Test was identical to that confirmed by Enzyme Linked Immunosorbent Assay.

Antibodies were higher detected in age group of 15-25 years 3(37.5%), and 26-35 4(%50) respectively.

Twenty one (21%) of the tested patients were HIV infected, six (75%) of them were found syphilis positive, while the other two (25%) syphilis positive were non-HIV infected.

Our findings suggest that routine screening for syphilis is necessary to prevent both citizens and foreign.

ملخص الاطروحه

فى هذه الدراسه تم جمع مائه عينه من دم الاثيوبيين المقيمين بولاية الخرطوم بغرض معرفة الانتشار المصلى لمرض الزهري بينهم قد تم ذلك في فئات عمريه تتراوح بين 15الى 45 عاما في كلا الجنسين في الفتره من أبريل وحتى نوفمبر 2014.

جميع هذه العينات تم اختبارها بطريقه الفحص المناعي السريع وطريقة فحص الانزيم المناعى المرتبط بغرض التاكد .

8% اظهروا نتائج ايجابيه للاجسام المضاده لمسبب مرض الزهري كما وجد أن العينات الموجبه أظهرت تطابق في كلتا الطريقتين.

كما وجد أن الاجسام المضاده لمسبب الزهري في الفئات العمريه 15-25 كانت37.5% و26-35 كانت كما وجد أن الاجسام المضادة لمسبب الزهري في الفئات العمريه الأخرى .

كما وجد أن واحد وعشرون مريضا كانوا مصابين بفيروس عوز المناعه و سته منهم أعطوا نتائج ايجابيه لمرض الزهري بينما المصابين اللآخرين بالزهري لم يكونوا حاملي لفيروس عوز المناعه.

وهذا يؤكد أن النتائج التى توصلنا اليها تشير الى ضرورة الفحص الروتينى لمرض الزهري وذلك لمنع خطورة المرض بالنسبه للمواطنين والاجانب.

TABLE OF CONTENTS

Title	Page No	
Dedication	I	
Acknowledgments	II	
Abstract	III	
ملخص الاطروحه	IV	
Contents	V	
List of tables	VIII	
CHAPTER ONE: Introduction		
1.2.Introduction	1	
1.2. Rationale	2	
1.3. Objectives	3	
1.3.1. General objective	3	
1.3.2. Specific objectives	3	
CHAPTER TWO: Literature review		
2.1. History of syphilis	4	
2.2. Treponema pallidum	4	
2.2.1. Structure and metabolism	4	
2.2.2. Genome structure	6	
2.3. Transmission	6	
2.3.1. Sexual contact	6	
2.3.2. Vertical transmission	7	
2.3.3. Infected blood and blood products	7	
2.3.4 Period of Communicability	8	
2.4. Risk factors	8	

2.5. Signs and symptoms	8
2.6. Pathology	9
2.6.1. Primary syphilis	9
2.6.2. Secondary syphilis	9
2.6.3.Latent syphilis	9
2.6.4. Tertiary syphilis	10
2.6.5. Syphilis in pregnancy and congenital syphilis	11
2.6.6. HIV and syphilis	12
2.7. Diagnosis of syphilis	13
2.7.1 Darkfield Microscope	13
2.7.2. Histochemistry and immune histochemistry	13
2.7.3. Demonstration of antibodies	13
2.7.3.1. Nontreponemal tests	14
2.7.3.2. Specific Treponemal tests	15
2.7.4. Rabbit infectivity test	16
2.7.5. Test for congenital syphilis	16
2.7.6. Application of Enzyme Linked Immunsorbent Assay	16
2.7.7. Polymerase Chain Reaction (PCR)	17
2.8. Control	18
2.9. Treatment	19
CHAPTER THREE: Materials and Methods	
3.1. Study design	20
3.1.1. Study type	20
3.1.2. Study area	20
3.1.3. Study duration	20
3.1.4. Study population	20

3.1.4.1. Inclusion criteria	20	
3.1.4.2 Exclusion criteria	20	
3.2. Data collection	20	
3.3. Sample size	20	
3.4. Specimen collection and preparation	20	
3. 5. Laboratory Examination	21	
3. 5.1. Immuno Chromatography Test	21	
3. 5.1.1. Determination of ICT (strip method)	21	
3. 5.1.2. Principle	21	
3. 5.1.3. Procedure	21	
3. 5.2. Enzyme Linked Immuno Sorbent Assay	22	
3. 5.2.1. Determination of ELISA	22	
3. 5.2.2. Principle	22	
3.5.2.3. Procedure	23	
3. 5.2.3.1. Control	23	
3.5.2.3.2. Conjugate and samples incubation	23	
3. 5.2.3.3. Wash	23	
3. 5.2.3.4. Substrate incubation	23	
3. 5.2.3.5. Stop color development	23	
3.5.2.3.6. Reading	23	
3. 5.2.4. Calculation and interpretation of results	23	
3.5.2.4.1. Assay validation	23	
3.5.2.4.2. Cut-of- value	24	
3. 5.2.4.3. Interpretation	24	
CHAPTER FOUR: Results		
4.1. Results	25	

CHAPTER FIVE: Discussion	
5.1. Discussion	27
5.2. Conclusion	27
5.3. Recommendations	28
References	29
Appendices	34

LIST OF TABLES		
Table No	Page No	
Table 1 Distribution of population according to age group	25	
Table 2 Total positive cases by ICT and ELISA	25	
Table 3 Positive cases according to age group	25	
Table 4 Positive cases according to sex	26	
Table 5 Related risk factor (HIV infection)	26	