

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ اللَّهُ تَعَالَى

(اَفَرَأَوْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ (1

صَدَقَ اللَّهُ الْعَظِيمُ

سورة العلق الآية 1

Dedication

To my kind mother and father

To my fiancé Ibrahim

To my sisters and brothers

And my fiancés family

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First of all, thanks for Allah who gave me the power for preparation and completion of this study.

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ABSTRACT

This study aimed to determine the frequency of *Nocardia* species among tuberculous patients.

It is a cross-sectional laboratory-based study in which sputum samples were collected from patients attending Abu-Anga Teaching Hospital, El Shaab Teaching Hospital and the Tuberculosis Reference Laboratory at the national Health Laboratory in Khartoum, Sudan, during the period from January to March 2010. Patients were consented and informed. All sputum samples that showed AFB-positive results were included.

Two tubes of the Lowenstein-Jensen medium were inoculated with 20 μ l of the neutralized sputum sample that was obtained from the digestion and decontamination. One of the tube contained pyruvic acid to isolate *Mycobacterium bovis* if encountered. All the cultures were incubated at 37 °C.

158 samples showed the growth of *Mycobacterium tuberculosis* and showed the appearance of AFB when stained again (indirect smear) with Ziehl-Neelsen for confirmation.

Seven (4.2%) of the LJ slopes revealed the growth of small orange filamentous colonies, which were tentatively considered to be *Nocardia*. biochemical tests showed that all the strains were catalase positive. Five isolates (71%) grow at 45°C and were positive for rhaminose. four isolates (57%) showed the stander patterns of mycolic acid components when using thin layer chromatographic technique, and also were positive for urea. Three isolates (42%) were positive for tyrosine, starch and citrate. Two isolates (28%) were positive for xanthine. One isolate (14%) was positive for casein and sorbitol, whilst all the isolates were negative for manitol and salicin.

These results showed significant numbers of isolates (4.2%) were found to having phenotypic properties typical of members of the genus *Nocardia*, and revealed clearly the importance of conventional methods in the diagnosis of pulmonary patients especially if there is other invader like *Nocardia* species.

ملخص الأطروحة

هدفت هذه الدراسة لتحديد تردد النوكارديا بين مرضى السل الرئوي هي عبارة عن دراسة معملية شاملة للقطاعات، تم جمع عينات التفاف من مستشفى أبو عنجة التعليمي، مستشفى الشعب التعليمي، والمعمل المرجعي للدرن بالخرطوم، السودان، في الفترة من يناير إلى مارس 2010.

تم تنوير المرضى بالبحث وأخذ موافقتهم، جميع عينات التفاف المتضمنة في البحث أظهرت نتيجة موجبة لصبغة العصويات المقاومة للأحماض تم تزريع عينات التفاف في أنبيوبين من وسط ليؤوستين جنسين بعد إزالة التلوث منها. واحد من الأنبيوبين يحتوي على حامض البايرفيك لعزل المنفطرة البقرية إذا وجدت، وقد حضنت العينات في درجة حرارة 37 درجة مئوية.

أنبوبة أظهرت النمو المثالي للبكتيريا المنفطرة الدرنية، وكانت 185 موجبة بصبغة العصويات المقاومة للأحماض التي أجريت لتأكيد النتائج وكشفت سبعة أنابيب عن نمو المستعمرات البرتقالية الخيطية التي اعتبرت مبدئيا نوكارديا.

وأظهرت النتائج الحيوكيمائية أن جميع السلالات موجبة للكتاليز، وخمسة (71%) قادرة على النمو في درجة حرارة 45 درجة مئوية وموجبة للرامينوز، و 4 (57%) أظهرت الخصائص المعيارية لحمض المايوكوليك عن استخدام طبقة رقيقة من تقنية الكروماتوغرافي، وكانت أيضا موجبة لليوريا، وثلاثة (42%) كانت إيجابية للتيروسين واختبار النشا والسيتريت، اثنين (28%) كانوا موجبين للزانثين، وواحدة (14%) للكازين والسوربيتول، بينما أظهرت كل السلالات نتيجة سالبة للمانitol والسالينيين.

وأظهرت أن (4.2%) لها خصائص النوكارديا. وكشفت بوضوح عن أهمية الأساليب التقليدية في تشخيص مرض الرئة خاصة إذا كانت هناك أنواع أخرى مثل النوكارديا.

Table of contents

Content	page
	i
DEDICATION	ii
ACKNOLOGMENTS	iii
ABSTRACT	iv
ARABIC ABSTRACT	vi
LIST OF FIGUERS	x
LIST OF TABLES	ix
CHAPTER ONE: INTRODDUCTION AND OBJECTIVE	
1.1 Introduction	1
1.2 Rationale	3
1.3 Objectives	3
1.3.1 General objective	3
1.3.2 Specific objectives	3
CHAPTER TWO: REVIEW OF THE LITERATURE	
2.1 History of <i>NOCARDIA</i>	5
2.2 Taxonomy of the genus <i>Nocardia</i> and related <i>actinomycetes</i>	7
2.3 Epidemiologic aspects of <i>Nocardia</i> infection in humans	9
2.4 Immune Response to <i>Nocardia</i>	10
2.4.1 Humoral Response	
10	
2.4.2 Cell Mediated Immunity	
10	
2.5 Clinical significance	11
2.5.1 Pulmonary disease	12
2.5.2 Extrapulmonary diseases	13
2.5.3 Primary Cutaneous Disease	14
2.5.4 Catheter-Related Infections/Bacteremia	16
2.5.5 Other Clinical Manifestations of Nocardiosis	16
2.6 Laboratory evaluation of <i>Nocardia</i>	17
2.6.1 Direct examination: microscopic and macroscopic	17
2.6.2 Identification procedures	20
2.6.2.1 Biochemical tests	20
2.6.2.2 Chemotaxonomic methods	21
2.6.2.3 Serological methods	22
2.6.2.4 Molecular identification	
22	

2.7 Susceptibility testing	25
2.8 Treatment of <i>Nocardia</i> Infections	26
CHAPTER THREE: PATIENTS AND METHODS	
3.1 Study Design	29
3.1.1 Population	29
3.1.2 Inclusion criteria	29
3.1.3 Samples collection	29
3.2. Isolation of <i>Nocardia</i> and related actinomycetes	29
3.2.1. L.J. medium	29
3.2.2. Sub-culturing in Glucose Yeast Extract Agar (GYEA) medium	30
3.2.3. Preservation of <i>Nocardia</i> cultures	30
3.3. Identification of <i>Nocardia</i> and related Actinomycetes	30
3.3.1. Morphological and culture characteristics	31
3.3.2. Biochemical tests	31
3.3.2.1. Catalase test	31
3.3.2.2. Urease test	31
3.3.2.3. Casein degradation	31
3.3.2.4. Tyrosine degradation	32
3.3.2.5. Xanthine degradation	32
3.3.2.6. Starch degradation	32
3.3.2.7. Sugars fermentation	32
3.3.2.8. Citrate test	32
3.3.2.9. Growth at 45°C	33
3.3.2.10. Analysis of mycolic acid	33
CHAPTER FOUR: RESULTS	
4.1. Epidemiological Finding	35
4.1.1 Gender	35
4.1.2. Age Groups	35
4.1.3 Treatment Status	35
4.2. Bacteriological Results	38
4.2.1. Phenotypic characteristic	39
3.2.2. Biochemical tests	40
CHAPTER FIVE: DISCUSSION	
5.1. Discussion	43
CHAPTER SIX: CONCLUSION AND RECOMMENDITION	
6.1. Conclusions	45
6.2. Recommendations	46

LIST OF FIGUERS

Figure 1a: distribution of male and female among study population.	36
Figure 1b: gender of patients included in the study.	36
Figure 2: age group among patients in the study.	37
Figure 3: treatment status of patients.	37
Figure 4a: frequency of <i>Nocardia</i> among collected sputum samples.	38
Figure 4b: frequency of <i>Nocardia</i> among collected sputum samples.	38
Figure 5a: Growth of <i>Nocardia</i> isolates on GYEА.	39
Figure 5b: Growth of <i>Nocardia</i> isolates on GYEА.	39
Figure 6a: In direct grams stain	40
Figure 6b: Indirect ZN stain.	40
Figure 7: In the right urea positive in the left urea negative.	41
Figure 8: in the right citrate positive in the left citrate negative.	41
Figure 9: In the right tyrosine negative in the left tyrosine positive.	42
Figure 10a: mycolic acid profile with control negative in the right, and followed by control positive (reference strain of <i>N. africana</i>).	43
Figure 10b: mycolic acid profile with control negative in the right, and followed by control positive (reference strain of <i>N. africana</i>).	43

LIST OF TABLES

Table 1: Clinically relevant aerobic actionmycetes	8
Table 2: Morphological, culture, biochemical and physiological properties of <i>Nocardia</i>	44