

بسم الله الرحمن الرحيم

قال الله تعالى

(اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ 1)

صدق الله العظيم

سورة العلق الآية 1

Dedication

To my kind mother and father

To my fiancé Ibrahim

To my sisters and brothers

And my fiancé's 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 20µl 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 تزرع عينات التفاف في أنبوبين من وسط ليثوستين جنسين بعد إزالة التلوث منها. واحد من الأنبوبين يحتوي على حامض البايروفيك لعزل المنفطرة البقرية إذا وجدت، وقد حضنت العينات في درجة حرارة 37 درجة مئوية.

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

وأظهرت النتائج الحيوكيمائية أن جميع السلالات موجبة للكتاليز، و خمسة (71%) قادرة على النمو في درجة حرارة 45 درجة مئوية وموجبة للرامينوز، و 4 (57%) أظهرت الخصائص المعيارية لحمض المايكوليك عن استخدام طبقة رقيقة من تقنية الكروماتوغرافي، وكانت أيضاً موجبة لليوريا، وثلاثة (42%) كانت ايجابية للتيروسين واختبار النشا والسيترت، اثنين (28%) كانوا موجبين للزانتين، وواحدة (14%) للكازين والسوربيتول، بينما أظهرت كل السلالات نتيجة سالبة للمانيتول والساليسين.

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

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