

SUDAN UNIVERSITY OF SCIENCE & TECHNOLOGY  
COLLEGE OF GRADUATE STUDIES

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# **MICROBIAL CAUSES OF OTITIS MEDIA IN SUDANESE PATIENTS**

*Presented by*

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A thesis Submitted to Graduate College, in partial fulfillment for the  
requirements of the Master Degree in Medical Microbiology

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال الله تعالى

اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ (1) خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ (2) اقْرَأْ وَرَبُّكَ  
الْأَكْرَمُ (3) الَّذِي عَلَّمَ بِالْقَلَمِ (4) عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ (5)

صدق الله العظيم

سورة العلق الآيات 1-5

## **Preface**

This work has been carried out in Ibn Sina Hospital Laboratories, Microbiology Department, under supervision of Professor Hassan Abdulaziz Musa.

# Dedication

*This thesis is dedicated to the great faithful man, who is prophetale in behaviour, saled all his life following the foot prints of our prophet (may peace be upon him), one of the pillars of Alla's faith, the late sayed/Ali Zain Al AbiDeen  
Awad Osman*

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## ABSTRACT

This descriptive study was conducted in Khartoum State at E.N.T Hospital, Out-patient Clinic, in the period, from April 2001 to March 2002.

The aim of the study was to see the prevalence of the different aerobic bacteria causing otitis media in Khartoum.

The required data was collected through questionnaire and laboratory cultures were used as a tool of investigation. Fifty ear swabs samples were randomly collected in the study from different patients of different ages and sexes.

Samples were collected from patients with ear discharge, and the study revealed that, *Staphylococcus* species were responsible for infections in otitis media (31.4%), *Proteus* species (23.0%), *Streptococcus species* (14.4%), *Pseudomonas* species (11.4%), *E. coli* (11.4%), *Klebsiella* species (2.8%), *Providencia* Species (2.8%) *Morganella morganii* (2.8%) of the cases.

*In vitro* sensitivity test: on all isolated organisms was performed for the different types of antimicrobial agents. Most *Staphylococcus* species were sensitive to gentamicin, norfloxacin and ciprofloxacin respectively, and resistant to ampicillin, sulphatriad, colistin sulphate, co-trimoxazole, tetracycline, cephalothin, streptomycin.

*Proteus* species were sensitive to gentamicin, ciprofloxacin, norfloxacin, cefixime (suprax), respectively, and resistant to ampicillin, tetracycline, cephalothin, co-trimoxazole, sulphatriad, colistin sulphate, streptomycin, and ceftriaxone. Most of the other isolates in this study

were sensitive to gentamicin, least sensitive to co-trimoxazole, and resistant to ampicillin, tetracycline and streptomycin.

## ملخص الأطروحة

أجريت هذه الدراسة فى ولاية الخرطوم بمستشفى الأذن والأنف والحنجرة بالعيادة الخارجية فى الفترة من أبريل 2001م إلى مارس 2002م.

وهدف هذه الدراسة هو معرفة مدى انتشار الميكروبات الهوائية المسببة لالتهاب الأذن الوسطى فى الخرطوم.

وقد جمعت البيانات المطلوبة عبر استبيان، واستخدمت زراعة العينات بالمعمل لاختبارها معملياً.

خمسون مسحة من الأذن الوسطى قد جمعت عشوائياً فى هذه الدراسة من مختلف المرضى بغض النظر عن أعمارهم وجنسهم (ذكر أم أنثى).

العينات جمعت من مرضى يعانون من التهاب صديدي بالأذن الوسطى، وقد أظهرت الدراسة على تلك العينات أنواع من الميكروبات المسببة لالتهاب الأذن الوسطى: استافيلوكوكس (31.4%)، بروتيس (23%)، استربتوكوكس (14.4%)، سودومونس (11.4%)، ايشريشيا كولاى (11.4%)، كلبسيلا (2.4%)، بروفدنشيا (2.8%)، مورقاناىلا مورقناى (2.8%) من الحالات.

وتم اختبار حساسية هذه الميكروبات للمضادات الحيوية باختبار معلمي يجرى بالمعمل لمعرفة حساسية الميكروبات المعزولة ومقاومتها للمضادات الحيوية، وكانت البكتريا العنقودية التى تعرف بالاستافلوكوكس حساسة للجنتاميسين (Gentamicin)، النورفلوكساسين (Norfloxacin)، والسبروفلوكساسين (Ciprofloxacin) على التوالى، ومقاومة للامبيسلين (Ampicillin)، السلفاتريد (Sulphatriad)، الكوليستين سلفيت (Colistin sulphate)، السبترين (Co-trimoxazole)، التتراسيكلين (Tetracycline)، الكيفالوثين (cephalothin) والاستربتومييسين (streptomycin).



وأظهرت البكتريا التى تسمى بروتيس (Proteus) حساسية  
للجنتاميسين (Gentamicin) ، سبروفلوكساسين (Ciprofloxacin) نور  
فلوكساسين (Norfloxacin)، سيفكسيم (Cefixime)، الكيفالوثين ( )  
cephalothin) والاسترتوميسين (streptomycin) على التوالى. كما  
أظهر نفس الميكروب مقاومة للامبسلين (Ampicillin)، التتراسيكلين ( )  
Tetracycline)، السـبـتـرين (Co-trimoxazole)، السـلـفـاـتـريد ( )  
Sulphatriad)، والاسترتوميسين (streptomycin) والسيفتراياكسون ( )  
Ceftriaxone .

أما بقية الميكروبات المعزولة من العينات كانت بصفة عامة  
حساسة للجنتاميسين (Gentamicin) ، مقاومة للامبسلين (Ampicillin).

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