

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى :

سَنُرِيهِمْ آيَاتِنَا فِي الْآفَاقِ وَفِي أَنْفُسِهِمْ حَتَّىٰ يَتَبَيَّنَ لَهُمْ
أَنَّهُ الْحَقُّ ۖ أَوَلَمْ يَكْفِ بِرَبِّكَ أَنَّهُ عَلَىٰ كُلِّ شَيْءٍ شَهِيدٌ

صدق الله العظيم
سورة فصلت الآية 53

Dedication

I dedicate this study
to my beloved parents,
my brothers, little sister
and my friends.

ACKNOWLEDGEMENT

All praise and thanks are due to Almighty God.

I am deeply indebted to my parents for their love, wisdom, guidance, support and encouragement.

My deepest gratitude and appreciation to my supervisor **Professor Humodi Ahmed Saeed** for his invaluable support, patience encouragement and supervision throughout this work.

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ABSTRACT

Stethoscopes are a potential factor for dissemination of bacteria from patient to another and thus recognized as critical public health problems.

This study was conducted during the period from March to June 2014 to assess Gram positive bacterial contamination on stethoscopes.

The stethoscope diaphragms were sampled by moistened cotton swab. The swabs were rotated over the internal and external surface of diaphragm. Each swab was soaked in 2 ml of sterile normal saline. The swabs were examined for bacterial load by Pour Plate Method. Gram-positive bacteria were identified by colonial morphology, Gram stain and biochemical tests.

A total of 200 swabs were examined. Of these 179 (89.5%) were contaminated with bacteria. The range of bacterial load was 2×10^4 - 1126×10^4 cfu/diaphragm with average 210.2×10^4 cfu/diaphragm. The total number of Gram-positive bacteria was 140 isolates. These were coagulase-negative staphylococci 84 (60%), followed by *Bacillus* species 43 (30.7%) and *Staphylococcus aureus* 13 (9.3%).

It is concluded that the stethoscopes were highly contaminated. Potential pathogens were isolated. Stethoscope's diaphragm cleaning and disinfecting before and after use are highly recommended. Further studies are required to validate the results of this study.

المستخلص

السماعات الطبية هي عامل محتمل لنشر البكتيريا من مريض لآخر والتي تعتبر مشكلة صحية عامة حرجية.

أجريت هذه الدراسة في الفترة من مارس إلى يونيو 2014 لتقويم البكتيريا الموجبة جرام على السماعات الطبية.

أخذت العينة من غشاء السماعة الطبية بواسطة مسحة قطن مبللة بمحلول ملحي معقم التفتت على الجزء الداخلي والخارجي للغشاء ثم وضعت في 2 مل محلول ملحي معقم. تم عد الحمل البكتيري للمسحات بواسطة طريقة الصحن المصبوب وتم التعرف علي البكتيريا الموجبة جرام من شكل المستعمرة وصبغة جرام والإختبارات الكيميائية الحيوية.

من بين 200 عينة شخصت أظهرت 179 عينة عزلاً بكتيرياً. تراوح الحمل البكتيري بين $10^4 \times 2$ و $10^4 \times 1126$ وحدة تشكيل مستمرة للغشاء مع متوسط $10^4 \times 210.2$ وحدة تشكيل مستعمرة للغشاء. كان العدد الكلي للبكتيريا الموجبة جرام 140 كانت عزلات المكورات العنقودية السالبة لانزيم التلزن 84 (60%) البكتيريا العصوية 43 (30.7%) والمكورات العنقودية الذهبية (9.3%) 13.

خلصت الدراسة الى أن تلوث السماعة الطبية عالي. تم عزل عدد من الممرضات المحتملة. نظافة وتطهير السماعة الطبية قبل وبعد الاستخدام يوصي به بشدة وأن إجراء المزيد من الدراسات مطلوب لتأكيد صحة نتائج الدراسة.

TABLE OF CONTENTS

Topic	
الآية.....	I
Dedication.....	II
Acknowledgement.....	III
Abstract.....	IV
المستخلص.....	V
Table of contents.....	VI
List of tables.....	IX

CHAPTER ONE

INTRODUCTION AND OBJECTIVES

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

LITERATURE REVIEW

2.1. Literature review.....	4
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CHAPTER THREE

MATERIALS AND METHODS

3.1. Study design.....	13
3.1.1. Type of study.....	13
3.1.2. Study area	13
3.1.3. Study duration.....	13
3.2. Sampling technique.....	13
3.3. Collection of samples.....	13
3.4. Laboratory investigation.....	14
3.4.1. Bacterial load.....	14
3.4.2. Bacterial identification.....	15
3.4.2.1. Gram stain.....	15
3.4.2.2. Biochemical tests.....	15

CHAPTER FOUR

RESULTS

4.1. Results.....	18
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CHAPTER FIVE

DISCUSSION

5.1. Discussion..... 23

5.2. Conclusion 25

5.3. Recommendation 25

References..... 27

APPENDICES

Appendix 1.....31

LIST OF TABLES

Table 1. Distribution of samples.....	19
Table 2. Frequency of contamination.....	20
Table 3. Bacterial load.....	20
Table 4. Frequency of Gram- positive according to hospitals.....	21
Table 5. Frequency of Gram- positive species.....	21
Table 6. Frequency of <i>Staphylococcus</i> species according to hospitals.....	22