Sudan University of Science and Technology

College of A graduate Studies

In vitro activity of Cephalexin on Bacterial Urinary Isolates

By

Amira Saad Eldin Mohammed

A thesis submitted in partial fulfillment for the requirements of the Master Degree in Clinical Microbiology

Supervisor

Dr. Humodi Ahmed Saeed

Associate Professor of Medical Microbiology
College of Medical Laboratory Science
Sudan University of Science and Technology

December, 2005

بِسْمِ اللّهِ الرَّحْمَنِ الرَّحِيمِ

قال الله تعالى

وَفِي أَنفُسِكُمْ أَفَلا تُبْصِرُونَ

صدق الله العظيم

سورة الذاريات الآية 21

LIST OF TABLES

LIST OF FIGURE

LIST OF PLATES

Dedication

To my parents.

Acknowledgements

First of all thanks for Allah that giving me the power and will to complete this study.

I would like to acknowledge the help provided by the staff of Postgraduate Studies in the Field of Clinical Microbiology, Sudan University of Science and Technology in their efforts done in establishment of higher studies in such important field. In particular I would like to acknowledge my supervisor Dr. Humodi Ahmed Saeed, Dean College of Medical Laboratory Science, for his close supervision, advice, enthusiasm and endless guide.

Thanks are extended to Ibn Sina, Military hospitals and National Health Laboratory staff for their help and support.

Finally thanks to Miss Widad A. Magsood for typing.

ABSTRACT

This study was carried out in Khartoum State during the period from October 2003 to December 2005. The study was designed to evaluate the activity of cephalexin by using National Committee for Clinical Laboratories Standard (Nccls) modified Kirby-Bauer Disc diffusion technique against urinary isolates. The total numbers of urinary isolates were 140 species. The species were identified as *E. coli* 93 (66.4%), *Klebsiella* spp 20(14.3%), *Proteus* spp. 12(8.6%), Pseudomonas spp. 10(7.1%), *Staph. aureus* 3(2.1%) and *Strepto. faecalis* 2 (1.4%).

The results obtained from this study showed that urinary pathogens had high rate of resistant to cephalexin 75 (53.6%), susceptible rate were 34 (24.3%) and 31(22.1%) were intermediate.

The study showed that cephalexin had no activity against *Pseudomonas* spp and was more effective against *Staph. aureus* (100%) and *Strepto. faecalis* (100%).

The rate of resistance among isolates recovered from males was 59.6% and among isolates recovered from females was 49.4%. Susceptibility rate to cephalexin in females was 25.3% being higher than in males 22.8%. Intermediate susceptibility rate in females was 25.3% being higher than in males (17.5%)

ملخص الأطــروحـة

أجريت هذه الدراسة فى ولاية الخرطوم فى الفترة من أكتوبر عام 2003م وحتى ديسمبر عام 2005م.

صممت هذه الدراسة لتحديد كفاءة المضاد الحيوي سفالكسين بإستخدام طريقة كيربي-بور لعمل اختبارات الحساسية ضد سلالات البكتريا المعزولة من عينات البول.

فى هذه الدراسة تم عزل 140 سلالة بكترية كانت كالآتي:الاشريشيات القولونية 93 سلالة (66.4%) الكليبسات 20 سلالة (14.3%)، المنقلبات 12 سلالة (6.8%)، الزوائف 10 (1.7%)، العنقوديات الذهبية 3(2.1%) والمكورات المعوية 2 (1.4%).

فى هذه الدراسة كان عدد الإناث 123 (61.5%) والذكور كان 77 (438.5%)، عدد الإناث كان أعلى من عدد الذكور.

أوضحت الدراسة إن السلالات المرضية المعزولة من عينات البول كانت ذات مقاومة عالية للسفاليكسين 75 (53.6%) وكان معدل الحساسية 34 (24.3%) ومتوسط معدل الحساسية 31(22.1%).

كذلك أوضحت الدراسة أن المضاد الحيوى سيفالكسين ليس له تأثير ضد سلالات الزوائف وكان اكثر فعالية ضد سلالات العنقوديات الذهبية (100%) والمكورات المعوية (100%). أن معدل مقاومة السلالات المعزولة من الذكور كان 59.6% و الإناث 49.4%. معدل الحساسية للسيفالكسين فى الإناث كان 25.3% أكثر منه فى الذكور 22.8%، ايضاً متوسط معدل الحساسية فى الإناث كان 21 25.3% أعلى منه فى الذكور 15 (17.5%).

TABLE OF CONTENTS