



بسم الله الرحمن الرحيم

Sudan University of Sciences and Technology
College of Graduate studies

**Frequency of Common Bacterial Uro-pathogens and Their
Susceptibility Patterns among Haemodialysis patients in Ahmed
Gasim Hospital, Khartoum State**

المرضى البولية البكتيرية الأكثر شيوعا واستجابتها للمضادات الحيوية لدى مرضى
الإستشفاء الدموي بمستشفى أحمد قاسم - ولاية الخرطوم

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M.Sc in Medical Laboratory Sciences (Microbiology)**

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الآية

بسم الله الرحمن الرحيم

قال تعالى :

فَاعْلَمْ أَنَّهُ لَا إِلَهَ إِلَّا اللَّهُ وَاسْتَغْفِرْ لِذَنبِكَ وَلِلْمُؤْمِنِينَ وَالْمُؤْمِنَاتِ ۚ وَاللَّهُ يَعْلَمُ مُتَقَلَّبَكُمْ وَمَثْوَاكُمْ

صدق الله العظيم

سورة محمد الآية 19

Dedication

To the Source of my Supercilious

My Mother

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

To the candle which burn to light

My Brothers

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

To those who have made it possible

Teachers & friends

To who will find it beneficial work

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

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Abstract

This study was carried out in Ahmed Gassim Hospital, Khartoum State during the period from April to June 2012. A total of 100 mid-stream urine specimens were collected, they were cultured on Cystiene Lysine Electrolytes Deficiency (CLED) agar. The identification of uro-pathogens was done according to Chessbrough (2007) which involved colonial morphology, Gram stain and biochemical identification, using catalase test, coagulase test, DNase test, mannitol salt agar, indole test, urease test, citrate test, MR test, VP test, motility test, and kligler iron agar.

Modified Kirby-Bauer disc diffusion method was used to study the susceptibility patterns of isolated bacteria against the following antibiotics: amikacin, ampicillin, cotrimoxazole, ceftizoxime, cefotaxime, chloramphenicol, ciprofloxacin, gatifloxacin, cephalixin, sparfloxcin, norfloxacin and tetracycline.

56(56%) from all urine culture were showed significant bacterial growth and 44 (44%) showed no or insignificant growth. According to the scheme of Chessbrough (2007), six different type of bacteria were isolated and identified, the most dominant species was *Escherichia coli* 23 (41%), followed by *Staphylococcus aureus* 21 (37.5%), *Proteus spp.* 5(9%), *Klebsiella spp.* 3(5.3%), *Staphylococcus epidermidis* and *Pseudomonas spp.* were represented 2 (3.6%). All isolates 6 (100%) were resistant to ceftizoxime. and most of them 5(83%) resistant to cephalixin. All isolates 6 (100%) were sensitive to amikacin, chloramphenicol, and 5(83%) of them were sensitive to gatifoxacin while tetracycline and sparfloxcin were sensitive only to *Staphylococcus spp.* the result showed that the *E.coli* and *Pseudomonas spp.* were resistant to the most used antibiotic, they were sensitive only for 4 (30%) agents out of 12 used agents.

This study showed that *Escherichia coli* is a most common causative agent of the urinary tract infection among haemodialysis patients, and Amikacin is the most susceptible antibiotic pattern.

المستخلص

أُجريت هذه الدراسة في مستشفى احمد قاسم في الفترة ما بين أبريل إلى يونيو 2012م. عدد العينات التي تم جمعها كانت 100 عينة بول (تدفق وسطي)، وزرعت في الوسط الزراعي (كلد). التعرف علي الممرضات البولية تم التعرف عليها طبقا لشسبرو (2007) اعتمادا على الشكل الظاهري للمرضة البولية، وصبغة غرام، والإختبارات الكيمياءحيوية مثل الكتليز، الكواكيلز، المنيترول، الذي أن أيه، الإندول، اليريبس، الستريت، الموتلتي، الكلفلر.

بإستخدام طريقة كيربي و بور المطورة تم تحديد أنموذج المضاد الحيوي اللائق بالمرضات البولية، والمضادات الحيوية التي استخدمت هي الأمبسلين، كوتريموكسازول، سفيتيزوكسيم، كلورمفينيكول، سفالكسين، تتراسيكلين، سبروفلوكساسين، اميكاسين، سبارفلوكساسين، قاتيفلوكساسين، نورفلوكساسين، أوفلوكساسين.

56% من العينات التي زرعت كانت بها بكتيرية ممرضة، و 44% كانت ليس بها نمو للبكتيرية الممرضة.

طبقا لجسبرو (2007) تم عزل ستة انواع مختلفة من البكتيرية الممرضة هي الإشريشيا القولونية23 (41%)، العنقودية الذهبية21 (37.5)، البروتيس5 (9%)، الكلبسيلا3 (5.3)، السودوموناس والعنقودية البيضاء2 (3.6).

كل انواع البكتريا التي عزلت6 (100%) كانت مقاومة للسفتيزوكسيم، وأغلبها5 (83%) كانت مقاومة لل، سفالكسين.

كل انواع البكتريا التي عزلت6 (100%) كانت حساسة للاميكاسين و، كلورمفينيكول، و5 (83%) منها كانت حساسة للقاتيفلوكساسين. بينما تتراسيكلين و سبارفلوكساسين فقط كانت حساسة للعنقودية الذهبية والبيضاء.

رأت الدراسة أن الإشريشيا القولونية و السودوموناس كانت مقاومة لمعظم المضادات الحيوية، حيث أنها كانت حساسة فقط ل4 (30%) من ضمن 12مضاد حيوي أُستخدم.

رأت الدراسة ان الإشريشيا القولونية هي اكثر بكتيرية مسببة لإلتهابات المجاري البولية لدى مرضى غسيل الكلى، و اميكاسين هي اكثر مضاد حيوي لائق.

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