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Journal of Pharmacy and Bioallied Sciences [Open Access](#)
Volume 11, Issue 2, April-June 2019, Pages 162-169

Relationship between antimicrobial prescribing and antimicrobial resistance among UTI patients at Buraidah Central Hospital, Saudi Arabia (Article)

[\(Open Access\)](#)

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Abstract

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Introduction: Most of the decisions regarding diagnosis and treatment are based on laboratory test results. Urinary tract infections (UTIs) are among the most common infections in humans. The changing antimicrobial sensitivity in UTI requires appropriate antibiotics. Antimicrobial resistance is an emerging problem in the Kingdom of Saudi Arabia where the complete reversal of antimicrobial resistance is difficult due to irrational use of antibiotics. **Objectives:** This study aimed to determine the most common bacterial agents causing UTI in different seasons among patients who were admitted to Buraidah Central Hospital (BCH), Saudi Arabia. The study also evaluated the link between prescribing and resistance toward antimicrobials. **Materials and Methods:** A 6-month retrospective study was conducted among adult patients who were admitted to the inpatient department at BCH. A total of 379 files were collected from microbiological laboratory for inpatients. **Results:** Most UTI-causing bacteria prevailed in the same season. Of 15 bacterial strains, 12 were significantly correlated with 20 (of a total of 40) antibiotics that were used. Most bacteria were gram-negative. Gram-negative bacilli including *Escherichia coli*, *Klebsiella* spp., and *Pseudomonadaceae* and gram-positive *Enterococcus faecalis* were most frequently causing UTIs. **Conclusion:** Overall prevalence of antibiotic resistance was negative in bacterial isolates. However, the relationship between antimicrobial prescribing and antimicrobial resistance was significantly negative among UTI patients in BCH, Saudi Arabia. © 2019 Journal of Pharmacy and Bioallied Sciences.

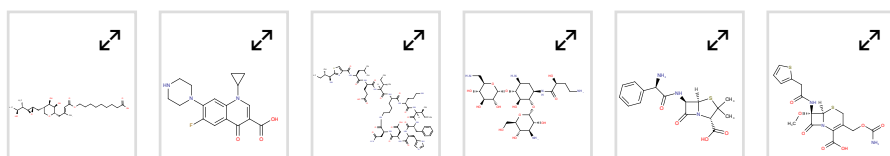
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EMTREE drug terms:

amikacin amoxicillin plus clavulanic acid ampicillin bacitracin cefotaxime cefoxitin
 ceftriaxone cefuroxime chloramphenicol cilastatin plus imipenem ciprofloxacin
 gentamicin levofloxacin meticillin neomycin polymyxin B pseudomonic acid
 tetracycline

EMTREE medical terms:

Acinetobacter adult antibiotic resistance antibiotic sensitivity Article
 bacterial infection bacterial strain bacterium culture Citrobacter koseri
 Enterococcus faecalis Enterococcus faecium Escherichia coli female hospital patient
 human Klebsiella Klebsiella pneumoniae major clinical study male prescription
 priority journal Providencia stuartii Pseudomonadaceae Pseudomonas aeruginosa
 retrospective study Saudi Arabia seasonal variation Staphylococcus aureus
 Staphylococcus capitis Staphylococcus epidermidis Staphylococcus haemolyticus
 Streptococcus agalactiae urinalysis urinary tract infection

Chemicals and CAS Registry Numbers:

amikacin, 37517-28-5, 39831-55-5; amoxicillin plus clavulanic acid, 74469-00-4, 79198-29-1; ampicillin, 69-52-3, 69-53-4, 7177-48-2, 74083-13-9, 94586-58-0; bacitracin, 1405-87-4; cefotaxime, 63527-52-6, 64485-93-4; cefoxitin, 33564-30-6, 35607-66-0; ceftriaxone, 73384-59-5, 74578-69-1; cefuroxime, 55268-75-2, 56238-63-2; chloramphenicol, 134-90-7, 2787-09-9, 56-75-7; cilastatin plus imipenem, 92309-29-0; ciprofloxacin, 85721-33-1; gentamicin, 1392-48-9, 1403-66-3, 1405-41-0; levofloxacin, 100986-85-4, 138199-71-0; meticillin, 132-92-3, 38882-79-0, 61-32-5; neomycin, 11004-65-2, 1404-04-2, 1405-10-3, 8026-22-0; polymyxin B, 1404-26-8, 1405-20-5; pseudomonic acid, 12650-69-0, 40980-51-6, 71980-98-8; tetracycline, 23843-90-5, 60-54-8, 64-75-5, 8021-86-1

ISSN: 09757406

Source Type: Journal

Original language: English

DOI: 10.4103/JPB.S.JPBS_217_18

Document Type: Article

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