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 Session: Antibiotic Resistance
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 Room: Ballroom

Antibiotic activity assessment of bacterial strains isolated from urine samples at Butare University Teaching Hospital (Buth) Laboratory



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Background: Urinary tract infections (UTI) are common worldwide and affect all sexes and age groups. An estimated 20% or more of the female population suffers from some form of UTIs in their lifetime. Although antibiotics are the first choice of treatment for many urinary tract infections, antibiotic-resistant strains of bacterial species commonly associated with UTIs, are increasing worldwide. The purpose of this study was to determine the pathogen antimicrobial sensitivity trends of bacterial pathogens associated with UTIs.

Methods & Materials: A retrospective study was carried out on bacteria isolated from the urine of patients at the BUTH laboratory between January 2006 and December 2010.

Results: A total of 1611 pathogens have been found. The most commonly isolated bacteria were *Escherichia coli* (876 strains), *Klebsiella* Species (190 strains), Coagulase negative *Staphylococcus* (114 strains), *Streptococcus* species (97 strains), *Proteus* species (90 strains) and *Staphylococcus aureus* (86 strains). Most of isolates were resistant to aminopenicillins (ampicillin and amoxicillin) and to trimethoprim- sulfamethoxazole (TMP-SMZ). Strains were rarely resistant to more expensive antibiotics (imipenem and cefotaxime). The most effective antibiotic to almost all isolates was imipenem, which is not commonly used in treatment of UTIs in Rwanda.

Conclusion: The rate of amoxicillin and trimethoprim-sulfamethoxazole resistance to Enterobacteriaceae implies that another antibiotic should be used for empirical treatment and that there is a need for new generic drugs in Rwanda. Imipenem could be included as a reasonable alternative for the therapy of UTIs in Rwanda.

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Antimicrobial resistance of *H. pylori* strains isolated in University Clinic of Infectious Diseases, Zagreb in 2008-2012 period



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Background: In a five year period 4505 patients underwent gastroscopy in Endoscopic Unit of the Clinic and biopsy specimens for determination of *H. pylori* infection were taken. Gender ratio was 2663 (59,11%) female versus 1942 male patients (40,89%). All gastric specimens were Gram stained, urease tested and cultivated on Columbia agar enriched with supplement and 5% addition of citrated equine blood. 56,93% specimens were *H. pylori* positive and 43,07% negative. Urease positive specimens were E tested on four antimicrobials - amoxicillin, clarithromycin, tetracycline and metronidazole. Isolation of *H. pylori* and antimicrobial susceptibility testing were successful in 1013 specimens (39,49%).

Methods & Materials: All gastric specimens were Gram stained, urease tested and cultivated on Columbia agar enriched with supplement and 5% addition of citrated equine blood. 56,93% specimens were *H. pylori* positive and 43,07% negative. Urease positive specimens were E tested on four antimicrobials - amoxicillin, clarithromycin, tetracycline and metronidazole.

Results: Isolation of *H. pylori* and antimicrobial susceptibility testing were successful in 1013 specimens (39,49%). Not a single isolated strain was resistant to amoxicillin, resistance to tetracycline varied from 4,77% to 8, 22% and showed no tendency of increase from 2008 to 2012. Metronidazole resistance decreased from 29,00% in 2008 to 22,83% in 2013. Percentage of clarithromycin resistant strains rose from 8,25% in 2008 to 19,75% in 2012.

Conclusion: We attribute the rise of clarithromycin resistance to overall use of the drug in triple eradication regimens together with amoxicillin and proton pump inhibitors. Metronidazole resistance in our patients in late 90s was about 65% due to abuse of the drug in multiple eradication attempts without prior susceptibility testing. Further administration of clarithromycin in eradication regimens should be considered and indications should be very strict. Either metronidazole again or levofloxacin can replace clarithromycin but after several years of unprudent administration we can expect that percentage of resistant strains will prohibit the use of those agents as well.

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