

Results: Quinolones at all tested concentrations increased bacterial surface hydrophobicity. The highest impact manifested EN, NOR and PFL in strain 10/116. The hydrophilic character of the exposed strain was changed to a hydrophobic state. Strain 84/233 showed only slight increase of hydrophobicity. Production of bacterial biofilm was lowered in dependence on strain and antibiotic, too. NOR at all tested concentrations and PFL at two ones in strain 84/233, EN and PFL at two concentrations in strain 10/116 were the most effective. In this case, production of biofilm in the strain 84/233 was in the range of 65.0–86.0%, in strain 10/116 of 66.1–87.7% of the control levels. Motility of antibiotic exposed strains exhibited various degrees of changes. EN and PFL at all tested concentrations decreased motility both of the strains (to 66.8–89.7% in 84/233 and to 47.1–86.5% in 10/116 of the control levels). The other antibiotics only slightly reduced or increased bacterial motility. The exposed strains in the majority of cases manifested higher sensitivity to hydrogen peroxide (with the exception of OFL in 84/233 and EN in 10/116). Lipase activity both of the strains was suppressed, more significantly in strain 84/233. The bacterial proteolytic activity was only minimally inhibited (to 96.8–99.9% of the control levels).

Conclusion: Quinolones at sub-MICs interfered with possible virulence traits of *V. cholerae* non-O1. The alterations were strain and drug concentration dependent.

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Study of Urinary Tract Infection and Antimicrobial Susceptibility Pattern Among Patients Referred to Imam Khomani Hospital Ahwaz, Iran

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Keywords: Urine culture; Colony count; Urinary tract infections; Antimicrobial susceptibility

Background: Urinary tract infections (UTI,s) are among the most common bacterial infections in humans, and *Escherichia.coli* is the predominant causative species. Although a wide variety of antimicrobial agents are used in the treatment of UTI,s, but a growing problem of worldwide concern is the increasing resistance of pathogens to conventional antibiotics. The aim of this survey was study of urine cultures for the most predominant bacteria recovered and investigation of their antimicrobial susceptibility pattern.

Methods: In total 7056 urine specimens were collected from patients referred to Imam Khomeini hospital whom suspected to have UTI. The specimens were cultured on Mac-Cankey agar, Blood agar and Muller Hinton agar and colony count was performed for the isolates. All the isolates with

standard biochemical tests, and the positive cases were tested for sensitivity to different antibiotics by standard disk diffusion method.

Results: From total collected samples, 553 (7.8%) were positive in culture and had a colony count of >105 CFU/ml. These were belong to 376 female (68%) isolated organisms were *E.coli* with 326 cases (59%), and *Klebsiella* with 62 (11.2%). The isolated organisms showed the most antibiotics resistance to AM (92%), CF (82%), TE (81%), SXT (70). **Conclusion:** Based on the results, we concluded that the majority of causes of UTI were *E.coli* in females and *pseudomonas* spp. in male patients. The most antibiotics resistance was seen to Ampicilin (AM), Sulfamethoxazole (SXT), and Cephalothin (CF) respectively.

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Human Brucellosis in the Region of Strumica, Macedonia

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Background: Brucellosis is still a significant health problem on the Mediterranean basin, Balkan countries, including the region of Strumica.

The aim of study is to describe incidence of morbidity of human brucellosis cases in the Department of Infectious Diseases - Strumica and to shown that brucellosis have endemic character in our region.

Methods: Retrospective analysis of histories from patients who were treated in the department. The diagnosis based of clinical signs of the disease, serum agglutination tests (Wright, Coombs), and laboratory results.

Results: The first case of the disease in Strumica is registered in 1988.

During the 15 years 1992–2006 have been registered 975 patients with acute form of brucellosis. The highest morbidities was registered in 1992 with 190 patients, followed by 162 in 1993, 1994–69 patients, 1995–92, 1996–80, 1999–109. The last six years the number of new cases per year is decreased, and in 2006 was registered 18 patients.

Our pars research has shown that morbidity is highest in the age group under 35. Men get infected more often (69,8%). The way of infection by contact was more often trough alimentation. Most of infected patients (98% from 975) with acute brucellosis originated from the rural settlements. Brucellosis has stressed seasonal character and the maximal number of patients was seen in the March, April, and May. The clinical signs in our patients are: high temperature, sweating, pain in the joints, most of them located in the pelvic and extremity joints, lost weight, general weakness, hepatomegaly, orchiepididymitis. The main duration of hospitalization was 21 days.

Conclusion: The results expressed that brucellosis have endemic character in our region. We hope that with more energetic veterinarian and health measures, more information and health education activity, particularly in the rural

settlements, the number of new cases of brucellosis in the next period, will be low or eradicated.

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A Prospective Study of Risk Factors for Bacterial Vaginosis in African Women

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Background: Bacterial vaginosis (BV) is common and has been associated with increased HIV-1 susceptibility. The objective of this study was to identify risk factors for BV in HIV-1-seronegative African women at high risk for HIV-1 acquisition.

Methods: We conducted a prospective study among 151 Kenyan female sex workers. Women were eligible to enroll if they were not pregnant and did not currently have symptoms of abnormal vaginal itching or discharge. At monthly follow-up, a vaginal examination and laboratory testing for genital tract infections were performed. Multivariate Andersen-Gill proportional hazards analysis was used to identify correlates of BV.

Results: Participants completed a median of 12 follow-up visits. Compared to women reporting no vaginal washing, those who reported vaginal washing 1–14 (adjusted hazard ratio [aHR] 1.29, 95% confidence interval [CI] 0.88–1.89), 15–28 (aHR 1.60, 95% CI 0.98–2.61), and >28 times/week (aHR 2.39, 95% CI 1.35–4.23) were at increased risk of BV. Higher BV incidence was also associated with the use of cloth for intravaginal cleansing (aHR 1.48, 95% CI 1.06–2.08) and with recent unprotected intercourse (aHR 1.75, 95% CI 1.47–2.08). Women using depot medroxyprogesterone acetate contraception were at lower risk for BV (aHR 0.59, 95% CI 0.48–0.73).

Conclusions: To our knowledge, this is the first prospective study to demonstrate a significant association between vaginal washing and BV. Thus, these data provide the strongest evidence to date that this common personal hygiene practice may increase women's risk for vaginal infections and their complications including increased HIV-1 susceptibility. The dose-response relationship with vaginal washing suggests that substantial reductions in BV might be achieved by reducing the frequency of vaginal washing or by modifying specific practices such as the use of cloth even if complete cessation proves difficult.

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Microbial Competition in Oral Health

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Culture-dependent methods and culture-independent method have shown that about 600 species of bacteria inhabit the human oral cavity. Some oral microorganisms have a direct link to dental caries, periodontal disease and halitosis. These include streptococcal species, certain bacilli and candida yeasts implicated in dental caries and species such as *Bacteroides loescheii*, *Porphyromonas endodontalis*, *Porphyromonas gingivalis* and *Prevotella intermedia* that are associated with halitosis. Some opportunistic pathogens also cause systemic diseases such as bacterial endocarditis, aspiration pneumonia, osteomyelitis in children, preterm low birth weight, coronary heart disease and cerebral infarction (or stroke). The oral cavity is also the habitat for many types of lactic acid bacteria that are able to inhibit the growth of other microorganisms by producing such metabolites as hydrogen peroxide, bacteriocins and organic acids. Such beneficial oral bacteria include *Lactobacillus rhamnosus* GG, *Lactobacillus reuteri*, *Lactobacillus casei* and *Lactobacillus acidophilus*. *Bifidobacterium* and *Streptococcus oligofermentans* inhibit cariogenic *Streptococcus mutans* while species such as *Weissella cibaria* and *Streptococcus salivarius* reduce volatile sulfur compounds thereby improving the condition of halitosis in human subjects generally. The development of the oral microbial community involves competition as well as synergy among these hundreds of species. The bacterial populations in the human oral cavity are constantly in a dynamic state of change. The need to profile and characterize these microorganisms using appropriate rapid detection methods can go a long way in developing future management strategies in the clinical setting to enhance oral health in the Malaysian population. This paper presents the initial data obtained by employing standard methods in addition to a rapid detection method in profiling bacteria present in the oral cavity of healthy Malaysian volunteers. Some consequential effects of prevalence in number of beneficial lactic acid bacteria in inhibiting the undesirable inhabitants of the oral region are also highlighted.

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Prevalence and Characteristics of Shiga Toxin- Producing *E. coli* (Stec) Serotypes Isolated from Subjects with and Without Diarrhea

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Objectives: Infectious diarrheal diseases are responsible for considerable morbidity and mortality, especially in the developing countries. Infections with Shiga toxin-producing