

Results: Microbiological examination confirmed the presence of infection among 80% of the subjects. The most prevalent pathogen isolated was *E. coli* among 34% patients followed by *Proteus* (21%), *Klebsiella* (13%), *Pseudomonas* (9%) and *Staph. aureus* (4%). In patients with UTI, the incidence of renal calculi was 17% among males and 8% among females. The incidence in terms of male to female sex distribution was 1:2 respectively. Mean age of renal calculi presentation was 30 years.

Conclusion: Renal tract infections play a vital role in formation of renal stones which are difficult to treat medically and sometimes needs urgent surgical maneuvers. Proper treatment of UTIs with suitable medications can definitely decrease the incidence of renal calculi and its further complications like renal failure which prove to be a big health burden in poor Asian countries.

OL-029 Antimicrobial activity of tropical plants in the treatment of infectious diseases

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Background: It has been claimed by the traditional practitioners that *Paderia foetida* (Family: Rubiaceae, Local name: Gondhabadhali) and *Lagerstroemia speciosa* (Family: Lythraceae, Local name: Jarul) have antimicrobial properties but there is no scientific report about their activities. This study was aimed to screen the antimicrobial activity of the crude extracts, fractions and/or isolated pure compounds of these two plants against a number of pathogenic bacterial strains.

Methods: Antibacterial activity of two semi-purified aqueous methanolic fractions (AMF-1 and AMF-2) of *Paderia foetida* extracts, one aqueous methanolic fraction (AMF) and crude methanol extract (ME) of *Lagerstroemia speciosa* was determined by disc diffusion method. Minimum inhibitory concentration (MIC) was determined by UV-Visible spectrophotometric assay.

Results: The antibacterial activity was assessed by measuring the zone of inhibition which was compared with standard Kanamycin (30 µg/disc) and Ciprofloxacin (5 µg/disc). Samples AMF-1, AMF-2, AMF and ME showed zone of inhibition in the range of 8 to 28 mm. Standard Kanamycin and Ciprofloxacin showed zone of inhibition in the range of 11 to 28 mm. MIC₁₀₀ (concentration required for 100% inhibition of bacterial growth) of AMF-1 and AMF-2 was found to be between 860.99 µg/ml to 1610.64 µg/ml and of AMF and ME was found to be between 831.76 µg/ml to 1621.81 µg/ml which were statistically significant [R=0.902–0.998, P ≤ 0.05 (significant) and P ≤ 0.01 (highly significant)].

Conclusion: Both the plants have been shown to possess antimicrobial properties from this study. The isolation of pure compounds from the fractions and extracts may lead to novel antimicrobial agents which may be used for the treatment of infectious diseases.

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OL-030 Use of 23S rDNA gene diversity for the discrimination of foodborne pathogenic bacteria by oligonucleotide microarrays

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Background and Objectives: Traditional methods for detection of foodborne pathogenic bacteria are time consuming and laborious, so there is a necessity for developing a reliable and powerful method for the rapid detection of microbial pathogens in food. We used universal primers to amplify the conserve region of 23S rDNA genes from some of bacterial species and tested the ability and efficiency of this region for discrimination of foodborne pathogenic bacteria.

Materials and Methods: The 23S rDNA sequences of 9 foodborne pathogenic bacterial species based on the GenBank database were used to design oligonucleotide probes by Vector NTI software. Oligonucleotide probes for each bacterial species (total 28 probes) were synthesized and applied to nylon membranes. Digoxigenin labeled 23S rDNAs were amplified by PCR from bacteria using universal primers, and the amplicons were hybridized to the membrane array.

Results: *Escherichia coli*, *Listeria monocytogenes*, *Enterococcus faecalis*, *Vibrio cholera*, *Shigella dysenteriae*, *Staphylococcus aureus*, *Salmonella enterica*, *Campylobacter jejuni*, and *Bacillus cereus* were used as the most common foodborne pathogens and results showed that except *Shigella dysenteriae*, the other bacterial pathogen can be detected and identified by our microarrays. The sensitivity of the microarray assay was 10³ CFU of bacteria.

Conclusion: Amplification of variable regions of 23S rDNA followed by oligonucleotide array can be used as a rapid and reliable method for detection of foodborne pathogens. Adding further oligonucleotides to the arrays can continually improve the accuracy, range and discrimination of this array. Thus, the oligonucleotide microarray is a powerful tool for the rapid detection and identification of pathogens.

Free Paper Presentation 7: Travel Medicine and Tropical Diseases

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PL-007 Cross-protection against West Nile virus in mice immunized with recombinant envelope protein domain III of Japanese encephalitis virus

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Objectives: Japanese encephalitis virus (JEV) and West Nile virus (WNV) are closely related human pathogens that cause severe encephalitic diseases of global impact. In this study, we aim to evaluate the immunogenicity the recombinant envelope protein domain III of JEV and its potential cross-protection against WNV in mice.

Methods: Firstly, the recombinant envelope domain III of JEV strain SA-14-14-2 in fusion with an N-terminal His-tag was cloned and expressed in *E. coli* by standard molecular biological technology. Then, these His-tagged proteins were purified through Ni-NTA column and identified by western blotting assay by using specific antibodies.