7. SUMMARY

From July 2010 to June 2011, 100 urine samples were collected and processed for isolation of pathogens. Totally 64 samples yielded the various pathogens and which samples yielded 89 isolates. The bacterial isolates screened from the urinary tract infected individuals were identified as *E. coli* with 28.09% isolate had the highest frequency followed with *Pseudomonas aeruginosa* (15.73%), *Enterococcus faecalis* (14.61%), *Staphylococcus aureus* (12.36%), *Streptococcus pyogenes* (12.36%), *Klebsiella pneumonia* (8.99%) and *Protease vulcaricus* (7.87%).

Urinary tract infection is one of the most common bacterial infections in women the prevalence is highly dependent on age and gender. As per the age wise prevalence patterns of *E.coli* associated UTI, this study showed as interesting pattern, among 100 samples, 25 were obtained, the distribution of isolates from different age groups of male and female. The leading etiologic agent of *E.coli* was mostly showed in 11 to 20 age groups (58.34%) and lowest in above 50 age peoples (30%).

According to the age wise of the UTI patients, virulent factor prevalence patterns of *E. coli* associated UTI like beta lactamase production; slime production and cell surface hydrophobicity were tested. In the present study, 100% of beta lactamase producers were observed. In case of cell surface hydrophobicity analysis, the highest percentage was obtained in female (88.54%) in 37 years of age and lowest (75.23%) in 27 years of age. In male, highest percentage (86.95%) was observed in 53 years of age and lowest (75.29%) in 35 years of age.
Prevalence of *E. coli* for the slime production (Positive) was detected higher in female (60.87%) than male (39.13%). In female, among 6 types of age groups, the highest prevalence (100%) was recorded in the age groups of 0-10, 11-20, 31-40, 41-50, above 50 and lowest in the age group between 21-30 years (80%). In case of male, 100% of slime producers were observed in the age groups of 11-20, 21-30, 41-50 and above 50 and lowest incidence observed in 31-40 years (66.67%) and no production in 0-10 years. In overall results the highest resistance percentage (96.67%) were observed in female samples.

The antibiotic resistance rates of *E.coli* isolates detected from urine culture was found to be 100% Cefpodoxime (CPD) and Novobiocin (Nv), 96% Vancomycin (Va), 88% Ceftizoxime (CZX), 84% Ampicillin (A) and 80% Erythromycin (E), Bacitracin (B), Nitrofurantoin (NF) and Tetracycline (T) respectively. Additionally, the most sensitivity rates were reported for 72% cefamandole (Cef). The most resistance rates of *E. coli* detected from urine culture were found to 100% resistance to Cefpodoxime (CPD) and Novobiocin (Nv) and 28% to Cefamandole (Cef) while the least resistance rate.

16srRNA gene of representative *E.coli* isolate was amplified by PCR. The amplified 16S rRNA gene product was sequenced and analysed for the phylogenetic relationship.

In this study, ESBL genes were detected by PCR amplification in *E. coli* isolates. The result revealed that presence of TEM (56%), CTXm (64%), SHV (40%) and OXA (60%). CTXms are the most prevalent ESBLs among *E.coli* isolates. In addition, the presence of CTXm subgroups in *E.coli* isolates was detected by multiplex PCR.