Chapter 6

Conclusion

Bacterial infection of the urinary tract is one of the common causes for seeking medical attention in the community. In the present study, the bacteriological profile among 1823 UTI patients was studied. This work found that a majority of the positive cases were in females while the remaining were males. These results show prevalence and higher susceptibility to of UTIs in female when compared to males.

We concluded that the Gram-negative bacteria were more prevalent than Gram-positive bacteria. This can be attributed to the fact that Gram-negative bacteria have several properties to attach and invade urothelium in comparison to gram-positive pathogens. The present study shows that *E. coli* is the significant cause of UTI amongst the outpatients as well as inpatients.

The rise of drug resilient bacterial strains is a global crisis and the current study underscores this trend. In present study a high percentage of isolates showed resistance to sulfa drugs such as Cotrimoxazole. The commonly used antibiotics such as Nitrofurantoin, Ampicillin/sulbactum and Co-trimoxazole were poorly effective against majority of the organisms isolated in this study while these antibiotics were found to be effective in similar studies conducted outside India. This is an important and worrying find for developing countries such as India. Over prescription or weaker drug controls could lead to antibiotics abuse and speed creation of antibiotic resilient super strains. The presence of bacterial isolates with very high resistance to the commonly prescribed drugs leaves few alternatives options of drugs for the treatment of UTIs.

The evaluation of plants’ antimicrobial properties is the first step toward eco-friendly management of infectious diseases by searching for new bio-molecules of plant origin. Considering these, *aloe vera* plants were screened *in vitro* for antibacterial activity against human pathogenic bacteria known to cause diseases in humans. *Aloe vera* was selected based on traditional medicine knowledge. On the basis of zone of inhibition, the antibacterial activity of plant extracts was evaluated. The zone of inhibition indicates the effectiveness of plant extracts in inhibiting the growth of bacteria. Generally, the larger the zone, the more sensitive the bacterium is to the plant extracts.
Results obtained in the present study show that plant extracts possess potential antibacterial activity against the tested strains. These strains were highly resistance to common antibiotics but, showed good sensitivity against plant extract. Plants such as *Aloe vera* have regularly featured in Ayurveda, the alternate and medicine system of the Indian subcontinent. The effectiveness of *Aloe vera* plants in this study against bacterial strains lands credence to ancient wisdom. As the race to find new antibiotics rages on, alternate and ancient medicine systems such as Ayurveda could prove to be treasure coves.