

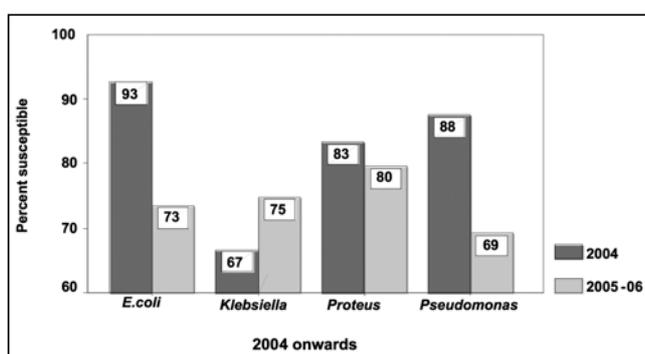
## SURVEILLANCE OF ANTIMICROBIAL SUSCEPTIBILITY OF URINARY PATHOGENS IN A TERTIARY CARE HOSPITAL

Dear Sir,

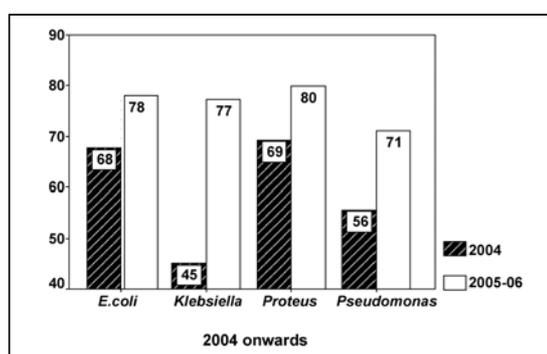
Investigators at the Nepalese teaching tertiary care hospital investigated one-year frequency of microbes responsible for urinary tract infection. Their recommendation to watch antibiotics susceptibility pattern of the urinary isolates from hospitalised cases<sup>(1)</sup> would be worth emulation. Nevertheless, for the ultimate goal of judicious use of antibiotics in hospitals, it would be desirable to involve clinicians also. Such retrospective data<sup>(1)</sup> should endeavour to streamline clinicians' chemotherapeutic interventions in urinary infections. Furthermore, an uninterrupted analysis on antimicrobial susceptibility pattern on the local isolates would keep the clinicians up-to-date towards ideal pilot antimicrobial prescriptions. Scrutiny on the susceptibility pattern of the urinary isolates from the outpatient and hospitalised cases, and frequent dialogue with clinicians have been operational at a private, tertiary care, multi-specialty hospital for the past two years.

During the period October to December 2004 and September 2005 to August 2006, urinary isolates at Sant Parmanand Hospital, Delhi, India, had been scrutinised for trends in antimicrobial susceptibility. The 140-bed multi-specialty, tertiary care hospital caters to the population in the capital metropolis and adjoining townships. Among the 147 and 1,172 isolates during the respective periods, October to December 2004 and September 2005 to August 2006, the respective isolates included *Escherichia coli* (*E. coli*), 103,644; *Klebsiella*, 20,342; *Proteus*, 13,147; and *Pseudomonas*, 11, and 39. Their antimicrobial susceptibility was determined using disk diffusion method for Amoxycillin-clavulanic acid, Ampicillin-sulbactam, Cefaclor, Cefuroxime, Ceftriaxone, Ceftazidime, Cefotaxime, Ceftizoxime, Amikacin, Gentamicin, Netilmicin, Ciprofloxacin, Ofloxacin, Pefloxacin, Norfloxacin, Nalidixic acid, Chloramphenicol and Nitrofurantoin.

During 2004, outstanding oral and parenteral antimicrobial agents were selected on the basis of the previous quarterly susceptibility pattern. Using a cut-off value of 75% or more for in vitro susceptible isolates, the oral agents recommended for pilot therapy by clinicians were Amoxycillin-clavulanic acid, Chloramphenicol and Nitrofurantoin; systemic agents being Amikacin, Netilmicin and Ceftazidime.<sup>(2)</sup> Consequently, during September 2006, based on identical data computation during the previous year, no significant change was manifested in the ratio of isolates susceptible to Amoxicillin-clavulanic acid, Chloramphenicol, Nitrofurantoin, Amikacin and Netilmicin. Nevertheless, there was a significant decline in the isolates susceptible to Ceftazidime with several *E. coli* strains acquiring in-vitro resistance (Fig.1). Concurrently, there was a significant rise in the number of susceptible isolates to Gentamicin; dominant in *E. coli* and *Klebsiella* isolates (Fig. 2). That data had been shared with the clinicians.



**Fig. 1** Bar chart shows significant decline in the isolates susceptible to Ceftazidime with several *E. coli* strains acquiring in-vitro resistance.



**Fig. 2** Bar chart shows a significant rise in the number of susceptible isolates to Gentamicin, which is dominant in *E. coli* and *Klebsiella* isolates.

Rather than data on hospitalised cases,<sup>(1)</sup> a comprehensive simplified data would be priceless. Moreover, there could be a follow-up of hospitalised cases in the outpatients. Outpatient cultures would also pick up any instances of nosocomial infection during the post-hospitalisation phase. The contribution by urinary tract infection towards nosocomial infections has been estimated around 40%.<sup>(3)</sup> Urinary tract infections are common complications of critical illness. Susceptibility data<sup>(1)</sup> on nosocomial infections would assist in selection of broad-spectrum antibiotics. Frequent dialogues between laboratory and infection control practitioners have been invaluable towards judicious usage of current broad-spectrum antibiotics: Cefepime, Pieracillin-tazobactam and Meropenem.<sup>(4)</sup> Last but not least, there has been a relative paucity of research on nosocomial urinary tract infection acquired in the intensive care units.<sup>(5)</sup> Shared

antimicrobial susceptibility profiles<sup>(1)</sup> on urinary tract pathogens among hospital professionals would sort out local and regional issues relating to urinary tract infections.

Yours sincerely,

Subhash C Arya  
Nirmala Agarwal  
Shekhar Agarwal

Sant Parmanand Hospital  
18 Alipore Road  
Delhi 110054  
India  
Tel: (91) 1198 1064 2269  
Fax: (91) 1123 974 706  
Email subhashji@hotmail.com

#### REFERENCES

1. Das RN, Chandrashekhar TS, Joshi HS, et al. Frequency and susceptibility profile of pathogens causing urinary tract infections at a tertiary care hospital in western Nepal. *Singapore Med J* 2006; 47:281-5.
2. Arya SC, Agarwal N, Agarwal S. Straightforward representation of antimicrobial chemotherapeutics susceptibility profiles in a private tertiary care hospital. *J Infect* 2005; 51:333-5.
3. Kalsi J, Arya M, Wilson P, Mundy A. Hospital-acquired urinary tract infection. *Int J Clin Practice* 2003; 57:388-391.
4. Raveh D, Muallem-Zilcha E, Greenberg A, et al. Prospective drug utilization evaluation of three broad-spectrum antimicrobials: cefepime, piperacillin-tazobactam and meropenem. *QJM* 2006; 99:397-406. Comment in: *QJM* 2006; 99:718-9.
5. Bagshaw SM, Laupland KB. Epidemiology of intensive care unit-acquired urinary tract infections. *Curr Opin Infect Dis* 2006; 19:67-71.

---

#### AUTHORS' REPLY

Dear Sir,

The authors have shared their experience about antibiotic susceptibility pattern from a private tertiary care multi-speciality hospital. As stated by the authors of this letter, there should be a frequent dialogue between the clinicians and microbiologists for the surveillance of common causative organisms and their antimicrobial susceptibility pattern. This is in practice in our setting, through the hospital infection control committee. The drug information bulletin published by the drug information centre of the pharmacology department disseminates this information to the clinicians. We agree with the authors' comment that follow-up of the hospitalised patients in outpatient department may pick up the infections that may be incubating at the time discharge from the hospital. In our study, we did not aim to include outpatients. Therefore, we may have missed such cases. In future, this practice would be adopted in our surveillance programme.

Yours sincerely,

RN Das  
TS Chandrashekhar\*  
HS Joshi  
M Gurung  
N Shrestha  
PG Shivananda

\*Department of Community Medicine  
Manipal College of Medical Sciences  
PO Box 155  
Deep Heights  
Pokhara  
Nepal  
Tel: (977) 61 521 387  
Fax: (977) 61 522 160  
Email: chandrashekharats@yahoo.com