

Letter to the Editor

Apropos “Antibiotic screening of urine culture as a useful quality audit”

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We commend the work done by the investigators at the Hamad Medical Corporation, Doha, Qatar, who did antibiotic screening of urine samples that were being processed for culture [1]. Their results were very encouraging. We feel that screening urine samples by the urine antibacterial substance assay (UABA) should be mandatory in all hospitals as it would assist in a more precise interpretation of the urine culture results.

This would not be an insurmountable task. Antibacterial substance screening of urine samples was already feasible at the All India Institute of Medical Sciences, New Delhi, India, more than four decades ago [2], where 426 urine samples were screened by employing the standard *Staphylococcus aureus* Oxford strain. There was demonstrable antibacterial activity in 127 samples, accompanied by bacterial growth in 63 samples. Isolates included *Escherichia coli*, 28 isolates; *Klebsiella* species, 13; *Pseudomonas aeruginosa*, 10; *Proteus* species, 6; *Staphylococcus aureus*, 3; *Alkaligenes faecalis*, 2; and *Streptococcus faecalis*. 1. A history of prior antibiotic usage could be obtained in 25 cases though there was no relevant information on the laboratory request forms. In seven cases, it was also possible to identify the antibiotics being used by the patients. The isolates in the urine samples were resistant *in vitro* to the prescribed antibiotics. Even with an adequate amount of antibiotic in the urine, there was little benefit to the individual.

Urinary tract infections (UTI) are the most common bacterial infections. According to the 1997 US National Ambulatory Medical Care Survey and National Hospital Ambulatory Medical Care Survey, UTI accounted for nearly 7 million clinic visits and one million emergency department visits with

100,000 hospitalizations. Financially, the estimated annual cost of community-acquired UTI in the US is significant, at approximately \$1.6 billion [3].

Rather than an ad hoc search for the presence of antibacterial substances in urine samples at different hospitals [1,2,4,5], it would be preferable to mandate regular global UABA screening concurrently with every urine culture. This would be useful for the patient, the laboratory personnel, and the clinicians. An accurate diagnosis of UTI depends on both the presence of symptoms and a positive urine culture [3]. Obviously, any sterile urine culture concurrent with a positive UABA could be fallacious unless a subsequent urine sample is found to be sterile without a positive UABA result. Laboratory personnel would not ignore patients with a rather low bacterial count in their urinary sample and a concurrent positive UABA result. Such isolates might represent either a declining population of susceptible bacteria or an ascending antibiotic-resistant bacterial population. Moreover, the UABA results of any cultured urine sample would inform the clinicians precisely about the prospective success or failure of the chemotherapeutic interventions.

In conclusion, the success of any chemotherapy for the most common bacterial urinary infections [3] should be established only after obtaining a sterile urine culture along with a negative UABA result [1]. Additional expenditure for UABA screening [1] would be cost-effective and would lead to better management of urinary tract infections which would not only serve as a useful quality audit [1] but would also lead to a rational UTI management.

References

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