Correspondence

Nosocomial urinary tract infection due to *Leuconostoc mesenteroides* at a tertiary care centre in north India

Sir,

*Leuconostoc* are catalase-negative Gram-positive cocci which are often misidentified as lactobacilli, streptococci, pediococci or enterococci as all these genera share several biochemical properties. The *Leuconostoc* are intrinsically resistant to vancomycin. These organisms were earlier considered to be nonpathogens before 1985. Though uncommonly isolated, these organisms have now gained importance as opportunistic pathogens. The reported human infections include bacteraemias, meningitis, breast abscess, peritonitis and abdominal abscess. In late 1990s, these organisms have been implicated in causing a small outbreak of nosocomial urinary tract infection (UTI). However, there are no such reports of *Leuconostoc* infections from India. In the present communication, we report an outbreak of nosocomial UTI caused by these organisms in a tertiary care centre in north India.

*Leuconostoc* isolates were recovered in pure culture, in significant numbers (>10⁵ cfu/ml) from 12 patients admitted to the Postgraduate Institute of Medical Education & Research (PGIMER), Chandigarh, during October 2000 and April 2001. A total of 9664 urine samples were cultured on cysteine lactose electrolyte deficient medium (CLED) during the period. *Leuconostoc* were incidentally found while characterizing all the significant catalase-negative Gram-positive cocci. The organisms were identified by using a battery of biochemical tests according to the conventional scheme of Facklam et al. Vancomycin susceptibility was tested by disc diffusion using 30 µg disc and vancomycin resistance was confirmed by E-test (AB Biodisk, Solna, Sweden). All the isolates were catalase-negative, pyrrolidonyl arylamidase (PYR; Sigma St. Louise, Mo) - negative, resistant to vancomycin, and did not grow at 45°C. All could grow in presence of 6.5 per cent NaCl and at 10°C. All produced acid in sucrose, maltose, raffinose, arabinose, mellibiose, mannitol and trehalose. Six of the 12 were lactose-positive and all were xylose-negative. None of the isolates deaminated arginine. These organisms were identified as *Leuconostoc mesenteroides* and were confirmed by using the BD-BBL crystal identification systems (Gram-Positive ID Kit-Sparks, Maryland, USA). Antimicrobial susceptibility was performed for amoxycillin (30 µg), penicillin (10 µl), nitrofurantoin (300 µg) and piperacillin (100 µg) by Kirby-Bauer method using *Enterococcus fecalis* ATCC 29212 as control and using antibiotic disks from Hi-Media Laboratories, Mumbai. Three of the 12 isolates were resistant to penicillin and amoxycillin, two were resistant to nitrofurantoin and one to piperacillin. Four isolates were intermediately susceptible to penicillin and one each was intermediately susceptible to nitrofurantoin and piperacillin. The clinical details of the patients were noted from the hospital records and were available for only 8 patients (5 females and 3 males). The age ranged from 2 months to 65 yr. All females were admitted in Obstetrics and Gynaecological unit. Three developed symptomatic nosocomial UTI, two of them underwent surgery for removal of fibroid and ovarian tumour and suffered from catheter related nosocomial UTI. In the other two females there were no symptoms related to UTI and therefore the organisms were considered as contaminants. Among the three male patients who had nosocomial UTI, one had malignancy of urinary bladder and another had stricture urethra. The third
The patient was a two-month old child with exstrophy bladder. All three developed symptomatic nosocomial UTI. All symptomatic patients responded to antibiotics and removal of urinary catheter (catheter was put in 3 patients). None of the patients developed features of clinical sepsis. Clustering of the cases was seen in three female patients from Gynecology ward. As these organisms are intrinsically resistant to vancomycin, infections occur more frequently in patients being treated for underlying diseases with vancomycin therapy. None of the patients in the present study had received vancomycin. Though these organisms may also be found as normal flora of alimentary tract, data supporting this contention are lacking. Handwerger and colleagues observed that neonates had a predisposition to develop bacteraemia suggesting that during delivery infants might become colonized with Leuconostoc inhabiting the maternal genital tract. In our patients the precise mode of transmission could not be known, though in another study where faecal samples were screened for vancomycin-resistant enterococci (VRE), we found many vancomycin-resistant Gram-positive cocci were actually Leuconostoc (unpublished data). Nosocomial transmission might have occurred through contaminated hands or fomites or the organisms might have entered at the time of urinary catheterization or instrumentation.

In summary, though uncommonly isolated these organisms can cause nosocomial UTI and have potential for causing outbreak. These are likely to be misidentified as enterococci in routine microbiology laboratory. Enterococci can also be vancomycin-resistant but are PYR-positive. PYR test negativity can be used as an important method to differentiate Leuconostoc spp. from VRE.

References


