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LETTER TO THE EDITOR

S. C. Arya · S. Kapoor · N. Agarwal · R. Bhasin · S. George

Comments on use of a disk diffusion method with cefoxitin (30 μg) to detect of methicillin-resistant *Staphylococcus aureus*

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In their evaluation of the cefoxitin disk diffusion method compared to the gold standard PCR for the detection of the *mecA* gene in 155 clinical isolates of *Staphylococcus aureus* screened for the methicillin resistance profile, Cauwelier et al. [1] found that cefoxitin disk diffusion proved better than the oxacillin disk diffusion method. At the Sant Parmanand Hospital in New Delhi, India we have identified MRSA isolates using the growth inhibition diameter for cefoxitin of <20 mm for methicillin-resistant *S. aureus* (MRSA) and a diameter of ≥24 mm for methicillin-sensitive *S. aureus* (MSSA).

Located in the northern part of the city, the 140-bed multi-specialty hospital caters to the local population as well as the adjoining townships. During August 2004, cefoxitin screening of 16 *S. aureus* isolates revealed seven to be MRSA and nine as MSSA. The MRSA infections were found in six hospitalised patients and in one individual seeking treatment as an outpatient. The cefoxitin inhibitory zone ranged between 6 mm and 8 mm for MRSA and between 24 mm and 30 mm for MSSA. The antibiotic sensitivity profiles of the isolates were forwarded to the attending clinicians of the seven MRSA patients, and the possible failure of various β-lactam antibiotic regimens to treat the MRSA infections was discussed. An exclusive non-β-lactam antibiotic regimen was expected to be effective. The utility of the sensitivity profiles obtained with the cefoxitin method as a basis on which antimicrobial therapy should be switched from a β-lactam to a non-β-lactam regimen was demonstrated in the following two cases of MRSA infection affecting patients in surgical intensive care units.

The first patient was a 62-year-old male who underwent sapheno-femoral ligation with a perforator ligator. Subsequent MRSA infection of the wound was accompanied by purulent discharge and high fever. A therapeutic shift from a cephalosporin to a lincosamide (clindamycin) was associated with remarkable clinical improvement and clearance of MRSA from the wound. The second patient was a 63-year-old female who underwent laparotomy to treat pancreatitis and purulent material in the pelvis. Ventilator support and cephalosporins were administered, but a progressive rise in the total leukocyte count occurred nonetheless. MRSA was isolated from the bronchial drainage tube. A shift in the antimicrobial regimen from cephalomycin to clindamycin led to an effective response with dramatic improvement. Both patients recovered from their MRSA infections prior to being discharged from the hospital.

MRSA is a major cause of nosocomial infection worldwide, and it poses a growing threat to public health [2]. In India, 54.8% of 549 *S. aureus* strains isolated at one tertiary care health centre were found to be MRSA [3], while in a clinic for babies MRSA nasal carriage was detected among healthy adults, with 17 of 94 *S. aureus* isolates being MRSA [4]. Obviously, MRSA screening employing cefoxitin disk technology [1] would be an asset for healthcare establishments whose funds are too limited to routinely perform the slide agglutination test or PCR to detect the *mec*A gene. Irrespective of the genetic diversity of MRSA in any location, cefoxitin disk assays should help improve the clinical picture of MRSA patients in intensive care units. Such a screening procedure, coupled with a dialogue between the clinical microbiologists and clinicians responsible for managing MRSA patients, is bound to be useful, as demonstrated clearly in the two cases presented here. In addition, employment of the cefoxitin disk diffusion method reported by Cauwelier et al. [1] would simplify MRSA screening for nasal carriage among healthcare personnel. Establishments with meager resources for otherwise multi-step MRSA screening techniques would be well-advised to watch developments in the procedures designed to control MRSA proliferation in hospitals.

S. C. Arya (✉) · S. Kapoor · N. Agarwal · R. Bhasin · S. George
Sant Parmanand Hospital,
18 Alipore Road,
Delhi, 110054, India
e-mail: subhashji@homail.com

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