regulation under the influence of sodium chloride or glucose which may be resolved if a larger series is studied.

The other important finding of our study was the variability of adherence of the strains to the polymer surfaces. Although the isolates were all from plastic catheters, they showed varying ability in their adherence potential to polystyrene surface in vitro. It seems likely that there may be strain to strain variation in the expression of genes responsible for PIA production and/or protein adhesins which play an important role in biofilm formation. Another probable explanation is the more complex milieu existing in the inserted catheter under in vivo conditions where various host proteins may form a coating on the catheter surface. The organisms can anchor themselves directly to those proteins and other substances using multiple receptors and surface proteins.

Further studies are needed to elucidate the factors influencing ica expression and the different mechanisms involved in biofilm formation among methicillin susceptible/resistant strains. This will give a more comprehensive picture of Staphylococcus induced catheter related infection and effective therapeutic interventions.

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* A Chaudhury, M Nagaraja, AG Kumar
Department of Microbiology, SV Institute of Medical Sciences, Tirupati, Andhra Pradesh -517 507, India
*Corresponding author (email: <ach1964@rediffmail.com>)
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Laboratory Microbiology to Clinical Microbiology: Are we Ready for a Transition?

Dear Editor,

We read with interest the guest editorial in the April 2009 issue of IJMM.[1] The author has succinctly brought out the need for bridging the divide between clinical care and laboratory work in microbiology.

We in India appear to be in a state of transition as we attempt to adopt this ‘service delivery model’. The concept and approach, however, is not entirely unfamiliar to us. Through this letter we would like to share our experience in this regard.

The department has undertaken an initiative to build a clinical association with physicians and intensive care experts in our hospital. As part of this effort, postgraduate students along with faculty members attend daily medical and surgical ICU rounds with the respective treating physicians. This approach revealed several benefits in a short span of time. For microbiologists — first hand patient information, clinical correlation, treatment trends and suggestions for additional / alternate tests were a few.

For healthcare providers, direct liaison with laboratory personnel, guidelines on specimen collection, update on new findings (ESBLs / MBLs) and feedback on antibiotic susceptibility patterns proved invaluable. Subsequently, we also extended this service to the pediatric ward, Oncology and Hematology Units.

Marked reduction in MRSA infections in the ICU, return of susceptibility patterns in certain Gram negative pathogens and investigation and source tracking of a nosocomial outbreak of neonatal septicemia were other notable benefits.

Other proactive efforts included a study of the bacteriological profile of air in the ICU / Operating Units, up-to-date antibiotic policy recommendations and liaison with anesthetists, to resolve doubtful cases of ventilator associated pneumonia.

Although the experience has proved to be mutually rewarding and educative, we continue to face certain challenges. Shortage of staff to cover all units and the ability to sustain the effort on a long-term basis are some
of them. Suggestions for increasing the number of annual MD microbiology seats and reframing the curriculum to include clinical rotations may help overcome these challenges.[2]

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K Kapila, *K Kaushik

Department of Microbiology, Armed Forces Medical College,
Pune – 411 040, India

*Corresponding author: (email: <mahakaroo@yahoo.com>)
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Cefoxitin Disk Diffusion Test - Better Predictor of Methicillin Resistance in Staphylococcus aureus

Dear Editor,

Cefoxitin, a cephamycin, is a more potent inducer of the mecA regulatory system than are the penicillins.[1] Several studies have reported that the Cefoxitin disk diffusion (DD) test is a good alternative method for detection of Methicillin resistance *Staphylococcus aureus* (MRSA) though Oxacillin is the agent recommended by the CLINICAL AND LABORATORY STANDARDS INSTITUTE (CLSI).[2,3] This study was undertaken to assess the usefulness of Cefoxitin DD in predicting MRSA.

This study included 155 strains of *S. aureus*, isolated from various clinical samples in the department of Microbiology, GTB Hospital, Delhi. These isolates were studied to evaluate Cefoxitin DD test for routine detection of MRSA. All the strains were screened for methicillin resistance by Oxacillin (1µg) and Cefoxitin (30 µg) DD test as per standard guidelines. Zone diameters as recommended by CLSI were read both at 18h and 24 h.

To assess the reproducibility of the Cefoxitin DD method, 10 strains each of MRSA and MSSA (both by Oxacillin and Cefoxitin disk) were taken and the inhibition zone diameters were obtained consecutively on 30 occasions. In addition, five strains of *S. aureus* which were sensitive by Oxacillin DD and resistant by Oxacillin MIC (between 4-6µg/ml), Cefoxitin DD and Cefoxitin MIC (>8µg/ml) were also taken.

The CLSI broth macro dilution (BMD) reference method was used to determine the MIC of Oxacillin and Cefoxitin. (MIC cut off criteria as recommended by CLSI for Oxacillin less than or equal to 2 µg/ml for susceptible and greater than or equal to 4 µg/ml for resistance. Modified breakpoint criteria for Cefoxitin less than or equal to 4 µg/ml for susceptible and greater than or equal to 8 µg/ml for resistance). Isolates that had MIC value of greater than or equal to 4 µg/ml for Oxacillin and greater than or equal to 8 µg/ml for Cefoxitin were taken as Methicillin resistant.

Of the 155 strains which were tested, 48.39% strains were Methicillin resistant by Oxacillin DD method compared to Oxacillin agar screen method which detected 50.32% strains including three strains of *S. aureus* which had Oxacillin zone diameters of 11-12 mm. These strains were further tested by Cefoxitin DD method. 54.54% strains were found to be resistant. No difference in zone diameters was seen at 18hrs and 24hrs. Cefoxitin MIC’s are shown in Table. No benefit of added salt was noticed.

*Staphylococcus aureus* is human pathogen with a remarkable propensity for development of antibiotic resistance. Previous CLSI recommendation for detecting MRSA included agar dilution, BMD, DD, the Oxacillin screen test and detection of *mecA* or product of *mecA* gene, PBP2a, by PCR and latex agglutination respectively. All these methods used for *S. aureus*, aside from *mecA* detection by PCR, are prone to errors. The laboratories that cannot afford to perform the PBP2a, latex agglutination test or do not have access to PCR, need alternative methods for detecting *mecA*-mediated resistance. Several studies have been done to investigate the utility of Cefoxitin DD for detection of MRSA.[2,3] In our study, Oxacillin DD test detected Methicillin resistance in 48.39% strains whereas Cefoxitin DD method detected 54.54% MRSA strains including 10 strains which had intermediate resistance to Oxacillin. The Cefoxitin DD zones were distinct and easy to read. Oxacillin agar screen detected three additional MRSA strains which were not detected by Oxacillin DD method but were detected resistant by Cefoxitin DD test. Moreover, Oxacillin agar screen is cumbersome to perform. Oxacillin MIC detected 52.26% MRSA strains as compared to Cefoxitin MIC, which could detect 54.54% MRSA strains.