Frequently Isolated Bacteria and their Culture and Sensitivity Pattern in a Medical ICU

Sir,

This is with reference to the short communication entitled “Frequently isolated bacteria and their culture and sensitivity pattern in a Medical ICU” written by Khurrum et al., published in September 2013 issue of Journal of College of Physicians and Surgeons, Pakistan.1 The inferences from the article could be helpful in formulating empirical therapy for seriously ill patients provided the method and procedures for testing and inferences deducted are based on universally acceptable and standardized technique. For antibiotic sensitivity testing various reference techniques are followed including Clinical and Laboratory Standards Institute (CLSI), European Committee for clinical laboratory standards, working party of the British Society for Antimicrobial Chemotherapy and World Health Organization.2 Clinical laboratories use any one of these reference techniques and follow their instructions and recommendations to interpret and issue the antibiotic sensitivity results. Most of the laboratories in Pakistan are using CLSI as reference method.

We have some reservations for the sensitivity results discussed in the article under study. These flaws in the testing interpretation would result in false deductions and variations in the recommendations of empirical therapy.

1. It is recommended in CLSI that while testing third generation cephalosporins (Cefotaxime or Ceftriaxone) against Enterobacteriaceae like Escherichia coli and Klebsiella pneumoniae, any one of them should be used and the result can be extrapolated to others.3 It is not clear how does Cefotaxime and Ceftriaxone susceptibility differed against Escherichia coli and Klebsiella pneumoniae. Similarly, in vitro testing of Ciprofloxacin and Levofloxacin should reveal same results not only against Escherichia coli but also against Pseudomonas aeruginosa?

2. Moreover, Norfloxacin should have lesser activity in vitro against Enterobacteriaceae than that of ciprofloxacin but in the article Norfloxacin revealed better results than that of ciprofloxacin. Similarly, Gentamicin is revealing better sensitivity than that of Amikacin against Pseudomonas aeruginosa, which is contrary to the usual pattern. Cefotaxime and Fosfomycin are not effective against Pseudomonas aeruginosa and are not recommended to be used clinically against Pseudomonas aeruginosa infections but in the article under discussion 25% and 20% isolates of Pseudomonas aeruginosa are shown to be susceptible to Cefotaxime and Fosfomycin respectively. (Even if Pseudomonas aeruginosa is inhibited by these antibiotics on the testing plate, these are not reported as susceptible). More than 33% of Staphylococcus aureus are shown to be resistant to Vancomycin which is contradicting various published reports.4,5 Moreover, CLSI in its recent issue has recommended determining Minimum Inhibitory Concentration (MIC) of Vancomycin rather than disk diffusion testing.3

3. Methicillin Resistant Staphylococcus aureus (MRSA) are usually resistant to all the β-lactam drugs and Imipenem. It is not understood how 50% of the MRSA isolates are shown in the article to be susceptible to Imipenem.

4. There is a need to reconstruct the antibiotic sensitivity Table I of the article under study. This would not only help in correct assessment of resistant pattern of various isolates but also reconsideration of the recommendations for antibiotics for empirical and therapeutic management.

REFERENCES
Authors’ Reply:

We are thankful to the author of the letter for keen critical review of our short communication. Interesting and important points are raised in this letter to editor. Following are clarifications in this regard:

1. Our short communication was initially written as original article, however, it had to be trimmed and shortened into short communication form according to comments of the reviewer. It is why many of the points raised in the letter to the editor which are limitations and unexpected findings of the study were not discussed.

2. The short communication focuses physicians perspective of the frequently isolated bacteria and culture sensitivity pattern in Medical ICU of a public sector hospital based on the culture sensitivity reporting by Pathology Department. Majority of the patients had hospital acquired infection.

3. Clinical and Laboratory Standard Institute (CLSI) was reference technique used.

4. Confusion seems to be due to the % mentioned in Table I “Medication sensitivity pattern of commonly isolated bacteria”. Not all medications were tested against each organism. For example, it means that 6.66% and 20% of E. coli were sensitive to Cefotaxime and Ceftriaxone respectively when tested. Hope that this will clear the issue raised regarding deviation from CLSI.

5. We have not recommended Cefotaxime and Fosfomycin for Pseudomonas infection. We definitely agree with authors comments in this regard.

6. Vancomycin resistance in Staphylococcus aureus isolates is too high in our study. It is notable that results were not based on MICs. We are working on its documentation separately. Extensive and inappropriate use of Vancomycin seems responsible for our findings.1,2

7. Imipenem is not recommended for MRSA. Going through the versions of the article we admit this typographical fault in Table I.

8. Our recommendations remain the same as given in abstract in this regard as given in abstract “sulbactam potentiated Cefoperazone in combination with Amikacin seems the best empirical antibiotic regimen. Imipenem usage can be an alternative and at end of short communication “Based on these results, depending on clinical scenario, sulbactam potentiated Cefoperazone in combination with Amikacin seems best guess antibiotic regimen. Gentamycin is similarly treatment of choice when there is suspicion of PA infection. Imipenem usage can be an alternative in this regard”.

REFERENCES
