Laboratory diagnosis of methicillin resistance in *Staphylococcus aureus*: Genotypic or phenotypic methods?

Sir,

Bhutia *et al*. add information to the clinical microbiology literature with one more study addressing the accuracy of different laboratory methods for the detection of methicillin resistance in *Staphylococcus aureus*,[1] reporting, as other authors, limitations in accuracy of the phenotypic methods.

We have also previously published on this subject, reporting very good accuracies for Etest and oxacillin agar screening plate, but relatively low accuracies for oxacillin and cefoxitin disk diffusion.[2,3] Although *mecA* polymerase chain reaction seems to be the most accurate method, it is still not available throughout the world due to financial and technical issues. In addition, it does not detect the other rare but possible mechanisms of oxacillin resistance, including other modified penicillin-binding proteins and beta-lactamase overproduction.[4]

As we have previously proposed,[2,3] a more appropriate option for increasing the sensitivity of methicillin resistance detection would be the concomitant use of two phenotypic methods, such as oxacillin and cefoxitin disk diffusion, or oxacillin agar screening plate and cefoxitin disk diffusion.Any isolate resistant by at least one of the tests should be reported as resistant. In our opinion, this combination approach would, with low cost, increase the sensitivity without decreasing the specificity significantly.

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References

1. Bhutia KO, Singh TS, Biswas S, Adhikari L. Evaluation of phenotypic with genotypic methods for species identification and detection of methicillin resistant in *Staphylococcus aureus*. Int J Appl Basic Med Res 2012;2:84-91.
2. Mimica MJ, Berezin EN, Carvalho RL, Mimica IM, Mimica LM, Sáfadi MA, *et al*. Detection of methicillin resistance in *Staphylococcus aureus* isolated from pediatric patients: Is the cefoxitin disk diffusion test accurate enough? Braz J Infect Dis 2007;11:415-7.
3. Mimica MJ, Carvalho RL, Berezin EN, Damaceno N, Caiaffa-Filho HH. Comparison of five methods for oxacillin susceptibility testing of *Staphylococcus aureus* isolates from cystic fibrosis patients. Rev Inst Med Trop Sao Paulo 2012;54:305-6.
4. Chambers HF. Methicillin resistance in staphylococci: Molecular and biochemical basis and clinical implications. Clin Microbiol Rev 1997;10:781-91.

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