

Surrogacy in Antimicrobial Susceptibility Testing of Group A *Streptococcus* [Letter]

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Dear editor

We have read the recently published study¹ with a curiosity to know about the susceptibility pattern of *Streptococcus pyogenes* strains isolated from pediatric patients with acute pharyngitis. Nevertheless, we would like to make a few observations which need to be reviewed.

1. The authors in this study have isolated and tested a total of 23 isolates of *S. pyogenes* against following antibiotics: erythromycin (15 µg), azithromycin (15 µg), tetracycline (), chloramphenicol (30 µg), clindamycin (2 µg), vancomycin (30 µg), ceftriaxone (30 µg), and penicillin (10 µg). However, CLSI guidelines states that penicillin is tested as a surrogate for cefazolin, cefepime, ceftaroline, cephadrine, cephalothin, cefotaxime, ceftriaxone, ceftizoxime, imipenem, ertapenem, and meropenem for groups A, B, C, and G beta-hemolytic streptococci. Penicillin is also surrogate for cefaclor, cefdinir, cefprozil, ceftibuten, cefuroxime, and cefpodoxime for group A beta-hemolytic streptococci.²
2. Further, the authors have reported sensitivity of *S. pyogenes* to be 100% to penicillin, 95.7% to vancomycin and chloramphenicol, 91% to clindamycin, 87% to ceftriaxone, 69.6% to azithromycin, 60.9% to erythromycin, and 43.5% to tetracycline, but the reduced susceptibility to ceftriaxone is certainly unpredicted because the CLSI guidelines state that the nonsusceptible strain of *S. pyogenes* to beta-lactams is incredibly rare and has not been reported yet. Therefore, routine susceptibility testing of penicillins and other beta-lactams is not necessary for the treatment of beta-hemolytic streptococcal infections. Moreover, each beta-hemolytic streptococcal isolate that is tested and is discovered to be nonsusceptible needs to be re-identified, retested, and, if verified, submitted to a public health laboratory.^{2,3}
3. According to the susceptibility pattern reported in this study, 91.4% (21/23) isolates of *S. pyogenes* were sensitive to clindamycin and 60.9% (14/23) were sensitive to erythromycin, which confirms that at least seven isolates were sensitive to clindamycin and resistant to erythromycin. These seven strains as per CLSI guidelines were required to be further tested for inducible clindamycin resistance (ICR) by D-zone test or broth microdilution method before reporting susceptibility to clindamycin.^{2,4}

Disclosure

The authors declare no conflicts of interest in this communication.

References

1. Tadesse M, Hailu Y, Biset S, Ferede G, Gelaw B. Prevalence, antibiotic susceptibility profile and associated factors of group a streptococcal pharyngitis among pediatric patients with acute pharyngitis in Gondar, Northwest Ethiopia. *Infect Drug Resist.* 2023;16:1637–1648. doi:10.2147/IDR.S402292

2. CLSI. *Performance Standards for Antimicrobial Susceptibility Testing: CLSI Supplement M100*. 31st ed. Clinical and Laboratory Standards Institute; 2021.
3. Leclercq R, Cantón R, Brown DF, et al. EUCAST expert rules in antimicrobial susceptibility testing. *Clin Microbiol Infect*. 2013;19(2):141–160. doi:10.1111/j.1469-0691.2011.03703.x
4. Jennifer DB. *Detection of Inducible Clindamycin Resistance in Staphylococcus Spp., Streptococcus Pneumoniae, and Streptococcus Sp. Beta-Hemolytic Group, Clinical Microbiology Procedures Handbook*. 4th ed. Washington, DC: ASM Press; 2022. DOI:10.1128/9781683670438.CMPH.ch5.9

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