

Antibiotic Susceptibility Pattern and Bacterial Spectrum Among Patients with External Eye Infections at Menelik II Referral Hospital in Addis Ababa, Ethiopia [Response to Letter]

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Dear editor

We would like to thank the readers and their valuable comments suggested. We have carefully reviewed their comments and responded to each comment one by one as follows:

1. We thank you Dr. Ketaki and Brig Dr. Sourav Sen for their knowledgeable comments on our study.

Responses: We agree that each experiment should be carried out by the CLSI and EUCAST criteria, which were just released. At the time of the data collection, the new version was not available freely. Unless there was a modification in the amended version of the guideline, which did not result in any changes, whether we use the new version or the old one. The study was carried out from January to April 2019.

2. One concern was about susceptibility testing of Vancomycin for *Staphylococcus aureus* by the disk diffusion method.

Responses: As clearly indicated in Table 3 of paper,¹ the column under vancomycin against *Staphylococcus aureus* isolates was left blank. It means the isolates were not tested against vancomycin by the Disk diffusion method. Here is the stated percentage (92.9%) that was not included in *Staphylococcus aureus* isolates rather it considered other gram positives for vancomycin AST.

3. The second concern was the reporting of Tobramycin susceptibility results for the *Staphylococcus species* and *CONS* are not mentioned in current CLSI guidelines which is mentioned in the present study.

Responses: Thank you for pointing out this comment. This is well documented in EUCAST guideline Clinical Breakpoint.^{2,3} This is separately indicated for both *Staphylococcus aureus* and *CONS*. One point we want to mention here, the study was carried out from January to April 2019. At this time the free available CLSI guideline was 2017, which was used as a reference in this study. However, recent CLSI s and EUCAST guidelines recommend testing tobramycin against *Staphylococcus species* including *CONS*.^{2,4}

4. The CLSI guidelines have not given any comment on the reporting of Vancomycin resistance in *Streptococcus spp. Viridians* group though the same has been highlighted in this study in Table 3.

Responses: This is clearly indicated in CLSI guidelines (page 26, Table 1B),⁴ (Page 24, Table 1B),⁵ (page 22, Table 1B),⁶ and (page 62, Table 2c).⁷

5. Lastly, computing the 100% susceptibility from a single *P. stuartii* isolate to Gentamicin in Table 4 is not in line with the current CLSI as well as EUCAST guidelines which mention that *P. stuartii* should be considered resistant to Gentamicin, Netilmicin, and Tobramycin and though appearing as susceptible in vitro; they should be reported as resistant.

Responses: Thank you for your insightful comments. Notably, *Providencia stuartii* is a known drug resistance opportunistic pathogen. However, no documented evidence reveals *Providencia stuartii* is intrinsically resistant to stated antibiotics (Ampicillin, Gentamicin, and Tobramycin). There is a text on CLSI guidelines that states *Providencia stuartii* should be considered resistant to gentamicin and tobramycin but not intrinsically resistant to amikacin. This sentence means that if the organism is resistant to ampicillin, Augmentin, cephalosporin I, tetracycline, Nitrofurantoin, Polymixin, and colistins, the organism should be considered drug-resistant.^{4–7} This evidence is supported by a recently published work with 51.3%, and 51.3% of sensitivity for Gentamicin, and Tobramycin among 76 isolates, respectively.⁸ More than 60% of *P. stuartii* isolates were found to be resistant to aminoglycosides (gentamicin, streptomycin, and tobramycin), penicillin (amoxicillin, Augmentin, and ampicillin).^{9–12} This substantial evidence revealed that *P. stuartii* is not intrinsically resistant to the aforementioned antibiotics (Ampicillin, Gentamicin, and Tobramycin) at this time.

We are thankful and appreciate comments from the readers; however, they should be based on scientific judgments and evidence.

Disclosure

The authors report no conflicts of interest in this communication.

References

1. Woreta AN, Kebede HB, Tilahun Y, Teklegiorgis SG, Abegaz WE. Antibiotic susceptibility pattern and bacterial spectrum among patients with external eye infections at Menelik II Referral Hospital in Addis Ababa, Ethiopia. *Infect Drug Resist*. 2022;15:765–779. doi:10.2147/IDR.S352098
2. The European Committee on Antimicrobial Susceptibility Testing. Breakpoint tables for interpretation of MICs and zone diameters. Version 12.0; 2022. Available from: <http://www.eucast.org>. Accessed April 4, 2022.
3. Leclercq R, Canton R, Brown DFJ, et al. EUCAST expert rules in antimicrobial susceptibility testing. *Clin Microbiol Infect*. 2013;19:141–160. doi:10.1111/j.1469-0691.2011.03703.x
4. Clinical and Laboratory Standards Institute. Performance standards for antimicrobial disk susceptibility testing. In: *CLSI Supplement M100*. 31st ed. Vol. 41. No.3 Pennsylvania, USA: Clinical and Laboratory Standards Institute; 2021:M100–Ed 31.
5. Clinical and Laboratory Standards Institute. Performance standards for antimicrobial disk susceptibility testing. In: *CLSI Supplement M100*. 31st ed. Vol. 41. No.3 Pennsylvania, USA: Clinical and Laboratory Standards Institute; 2020:M100–Ed 30.
6. CLSI. Performance standards for antimicrobial disk susceptibility testing. In: *CLSI Supplement M100*. 28th ed. Vol. 38. Pennsylvania, USA: Clinical and Laboratory Standards Institute; 2018:M02–A12.
7. Clinical and Laboratory Standards Institute. Performance standards for antimicrobial susceptibility testing. In: *CLSI Supplement M100*. 27th ed. Wayne, PA: Clinical and Laboratory Standards Institute; 2017.
8. Liu J, Wang R, Fang M. Clinical and drug resistance characteristics of *Providencia stuartii* infections in 76 patients. *J Int Med Res*. 2020;48(10):300060520962296. doi:10.1177/0300060520962296
9. Penner JL, Preston MA. Differences among *Providencia* species in their in vitro susceptibilities to five antibiotics. *Antimicrob Agents Chemother*. 1980;18(6):868–871. doi:10.1128/AAC.18.6.868
10. Woods TD, Watanakunakorn C. Bacteremia due to *Providencia stuartii*: a review of 49 episodes. *South Med J*. 1996;89(2):221–224. doi:10.1097/00007611-199602000-00013
11. Bonfiglio G, Perilli M, Stefani S, Amicosante G, Nicoletti G. Prevalence of extended spectrum beta-lactamases among Enterobacteriaceae: an Italian survey. *Int J Antimicrob Agents*. 2002;19(3):213–217. doi:10.1016/s0924-8579(00)497-601
12. National Committee for Clinical Laboratory Standards. Performance standards for antimicrobial susceptibility testing. In: *NCCLS Document M100-S5*. Vol. 14. Villanova, PA: National Committee for Clinical Laboratory Standards; 1994.

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