

Antimicrobial Susceptibility Profiles of *Neisseria Gonorrhoeae* in British Columbia, Canada, 2023

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INTRODUCTION & AIM

- Nowadays, molecular testing is the gold standard for laboratory diagnosis of gonorrhea due to its superior sensitivity compared to culture.
- However, unlike culture, specimens collected for molecular testing cannot have susceptibility testing performed.
- The current study aimed to show the antimicrobial susceptibility profiles of *Neisseria gonorrhoeae* isolates identified by culture in British Columbia (BC) communities.
- The data helps answering whether the Canadian Guidelines on Sexually Transmitted Infections empiric preferred treatment (ceftriaxone monotherapy) or alternative treatment (cefixime plus doxycycline or cefixime plus azithromycin) require amendment.

METHOD

- An audit was conducted on the susceptibility profiles of all culture-positive *Neisseria gonorrhoeae* isolates identified by LifeLabs BC regional microbiology laboratories, connected with 129 community collection centres, the largest network in the province of British Columbia, Canada.
- In 2023, 98 culture-positive *Neisseria gonorrhoeae* isolates, collected any body sites, underwent antimicrobial susceptibility testing in the provincial laboratory.
- The clinical breakpoints for interpretation of susceptible, intermediate, and resistant results were from the Clinical and Laboratory Standard Institute (CLSI) M100 Performance Standards for Antimicrobial Susceptibility Testing.
- Data were collated using the guidance from the CLSI Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data.

RESULTS & DISCUSSION

Table 1: Antimicrobial Susceptibilities of *Neisseria gonorrhoeae* isolates (n = 98) collected in communities of British Columbia, Canada, 2023

- azithromycin 97%
- cefixime 100%
- ceftriaxone 100%
- ciprofloxacin 27%
- penicillin 7%
- tetracycline 39%

(As per CLSI, organisms that are susceptible to tetracycline are also considered susceptible to doxycycline and minocycline..)

CONCLUSION

- Ceftriaxone monotherapy, as per the Canadian Guidelines on Sexually Transmitted Infections preferred treatment, is likely effective *against* *Neisseria gonorrhoeae* in the BC communities as 100% sensitivity was observed.
- Combination therapy with cefixime and azithromycin are also likely effective as 100% and 97% sensitivities were observed, respectively.
- Doxycycline should not be recommended as a monotherapy treatment or post-exposure prophylaxis of *Neisseria gonorrhoeae*, as its sensitivity was only 39%.
- Penicillin and ciprofloxacin did not appear to be effective treatment options in most cases.

REFERENCES

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