

HIGH ANTIMICROBIAL SUSCEPTIBILITY IN *NEISSERIA GONORRHOEAE* ISOLATES FROM TERNOPIL AND DNIPROPETROVSK REGIONS OF UKRAINE, 2013-2017

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Background. Antimicrobial resistance (AMR) in *Neisseria gonorrhoeae* is a major public health concern globally. No AMR data for gonococcal strains spreading in Ukraine has ever been internationally published. We investigated the AMR in gonococcal strains spreading in the Ternopil region 2013–2017 and Dnipropetrovsk region 2013–2015 of Ukraine, to provide quality-assured AMR data to inform the national gonorrhoea treatment guidelines in Ukraine.

Methods. Gonococcal isolates were collected at the Ternopil and Dnipropetrovsk regional clinical dermatovenerological dispensaries from patients with symptoms of urogenital infections. The isolates were species confirmed as *N. gonorrhoeae* using Gram-stained microscopy, oxidase testing and MALDI-TOF. The minimum inhibitory concentrations (MIC, mg/L) of eight antimicrobials were determined by the Etest, according to the manufacturer's instructions. Resistance breakpoints from the European Committee on Antimicrobial Susceptibility Testing (EUCAST) were used. A β -lactamase test (nitrocefin test) was also performed.

Results. In total, 138 isolates were collected, 123 (89.1%) in Ternopil and 15 (10.9%) in Dnipropetrovsk. Overall, 8.7% of isolates were resistant to ciprofloxacin, 5.8% to tetracycline, 0.7% to azithromycin, and 0.7% to benzylpenicillin. No isolates were resistant to ceftriaxone, cefixime, spectinomycin, or gentamicin (**FIGURE**), and the MICs of these antimicrobials were low. However, one (0.7%) isolate had an MIC of 0.125 mg/L for both ceftriaxone and cefixime, which is bordering resistance.

Conclusions. The susceptibility of gonococcal strains spreading in the Ternopil and Dnipropetrovsk regions of Ukraine during 2013–2017 remained surprisingly high. Relatively low levels of resistance to ciprofloxacin, tetracycline, azithromycin and benzylpenicillin were found. No resistance was found to the currently recommended ceftriaxone or to cefixime, spectinomycin or gentamicin. Ceftriaxone 1 g intramuscularly can remain as first-line empiric treatment, however, continued and expanded AMR surveillance in Ukraine is essential to monitor the susceptibility to particularly extended-spectrum cephalosporins and azithromycin.

Figure. Antimicrobial susceptibility in *N. gonorrhoeae* in Ukraine, 2013–2017

