Gonorrhoea epidemiology and antimicrobial resistance

009.1 TRENDS AND REGIONAL DIFFERENCES OF NEISSERIA GONORRHOEAE ANTIMICROBIAL RESISTANCE IN THE NETHERLANDS, 2013–2019

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Gonococcal antimicrobial resistance is emerging worldwide, and is monitored in the Netherlands in 18 out of 24 Sexual Health Centres (SHC) that perform culture and susceptibility testing for patients with gonorrhea. This study describes trends, determinants and regional differences in azithromycin resistance and ceftriaxone decreased susceptibility in 2013–2019.

Data on person characteristics, STI diagnoses and MIC values (Minimum Inhibitory Concentration, measured by E-test) for gonorrhea were reported by participating SHC. We describe azithromycin resistance (AZI-R, MIC >1 mg/L) and ceftriaxone decreased susceptibility (CEF-DS, MIC >0.032 mg/L) over time and per SHC. We use multilevel logistic regression analysis to describe determinants of AZI-R/CEF-DS among MSM and heterosexuals, correcting for SHC region. A separate multilevel model was made to quantify the effect of population differences on the regional variance of AZI-R and CEF-DS.

A total of 13,000 isolates were included from 2013–2019. AZI-R significantly increased from 2.8% (95% Confidence Interval 2.1–3.9%) to 9.3% (8.2–10.5%). CEF-DS significantly decreased from 7.0% (5.7–8.3%) to 2.9% (2.3–3.6%). Overall, regional differences were seen between SHC: AZI-R varied from 0.0% to 16.9%, CEF-DS from 0.0% to 7.0%. Regional variance could not be explained by population characteristics. Regression analyses found pharyngeal strain origin and year of consultation significantly associated with AZI-R and CEF-DS among MSM and heterosexuals. Among heterosexuals also a high number of partners was associated with AZI-R and CEF-DS.

No resistance or decreasing susceptibility was found for ceftriaxone, the first line gonorrhoea treatment in the Netherlands. However, azithromycin resistance is increasing, similar to trends worldwide. Differing levels of resistance/decreased susceptibility per SHC could not be explained by differences in population characteristics. This indicates the need for nationwide surveillance and reporting of results on a regional level. The association of pharyngeal strain origin with resistance/decreased susceptibility underlines the importance of including extragenital infections in gonococcal antimicrobial resistance surveillance.