Background Pharyngeal Neisseria gonorrhoeae (NG) infections are common among men who report sex with men (MSM). The pharynx is an important anatomic reservoir for the development of antimicrobial resistance due to the potential for exchange of genetic material between NG and other commensals of this niche, including other Neisseria species. We investigated whether there was an association between pharyngeal infection and reduced susceptibility (RS) or resistance to antimicrobials used to treat NG compared to genital and rectal infection.

Methods Logistic regression of odds ratios (OR) was used to model the association between the anatomical site of infection and RS or resistance to azithromycin, ceftriaxone, cefixime, and ciprofloxacin using isolates from MSM in England and Wales collected within the Gonococcal Resistance to Antimicrobials Surveillance Programme (GRASP), 2012–2017.

Results Among 5,448 isolates from MSM, 729 (13.4%) were pharyngeal, 2,365 (43.4%) were rectal and 2,354 (43.2%) were genital samples. Pharyngeal infections were more likely to be associated with azithromycin resistance (minimum inhibitory concentration (MIC) >0.5 mg/L (adjusted OR (aOR) 1.62, 95% CI: 1.13–2.31, P<0.001)) and RS to ceftriaxone (MIC ≥0.015 mg/L (aOR 1.25, 95% CI: 1.03–1.52, P=0.023)) compared to genital infections. Pharyngeal infections were also more likely to be associated with azithromycin resistance (aOR 1.49, 95% CI: 1.06–2.11, P<0.001) and RS to ceftriaxone (aOR 1.21, 95% CI: 1.00–1.47, P=0.045) compared to rectal infections. No significant association was found between site of infection and cefixime or ciprofloxacin resistance.

Conclusion Pharyngeal NG infection among MSM are more likely to be RS to ceftriaxone and resistant to azithromycin compared to rectal and genital infections. Poor pharyngeal tissue drug penetration may lead to persistent infections, which would provide more time for exchange of genetic material that confer AMR. This highlights the importance of extra-genital testing and antimicrobial susceptibility testing in this population, to reduce the risk of treatment failure and onward transmission of resistant strains.

Disclosure No significant relationships.