A TALE OF TWO HALVES; LOW EXTENDED-SPECTRUM CEPHALOSPORIN AND HIGH AZITHROMYCIN RESISTANCE IN NEISSERIA GONORRHOEAE IN EUROPE, 2015

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Introduction The European Gonococcal Antimicrobial Surveillance Programme aims to monitor rates of antimicrobial resistance in Neisseria gonorrhoeae and provide data to inform the European gonorrhoea treatment guidelines; currently ceftriaxone 300 mg plus azithromycin (Az) 2 g as dual-therapy. This analysis reports on Euro-GASP resistance patterns in 2015 vs. 2014.

Methods For 2015, antimicrobial susceptibility testing (Etest or agar dilution) was performed on 2134 isolates from 24 European countries and interpreted using EUCAST breakpoints. Patient variables associated with resistance were established using univariate logistic regression to estimate odds ratios (ORs).

Results Cefixime resistance (Cef-R) was 1.7% in 2015 vs. 2.0% in 2014. Ceftriaxone resistance was detected in one isolate in 2015, compared with 5 in 2014. The proportion of isolates showing Az resistance (Az-R) decreased slightly to 7.1% (7.9% in 2014). Five isolates displayed high-level Az-R (MIC ≥256 mg/L) compared with one in 2014. Ciprofloxacin resistance remained high at 49.4% (50.7% in 2014). Cef-R among MSM and females continued to decline to 0.3% and 1%, respectively, but increased among heterosexual males (4.1% vs. 1.7% in 2014), which was mainly attributable to two countries with high Cef-R (11%). MSM and heterosexual males had higher levels of Az-R (both 8.1%) compared with females (4.9%), but this difference was not significant. Az-R in females increased to 4.9% from 2.2% in 2014. An association between previous gonorrhea infection and Az-R, first observed in 2014 remained in 2015 (OR 2.1, CI 1.2–3.5, p<0.01).

Conclusion The low cephalosporin resistance likely reflects the effectiveness of the current first-line dual-therapy. However, the Az-R is concerning and threatens the effectiveness of this regimen. Furthermore, the increasing cef-R in heterosexual males needs close monitoring. Increasing Az-R and decreasing cephalosporin resistance is occurring globally. Whether the global use of Az in mono- or dual-therapy is contributing to this picture remains to be elucidated.