Factors associated with Neisseria gonorrhoeae azithromycin resistance in the Quebec sentinel network, 2015–2017

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Background N. gonorrhoeae azithromycin resistance (MIC ≥ 2 mg/L) increased from 1.7% to 30.9% between 2013 and 2017 in Quebec, Canada. The Quebec sentinel network aims to 1) maintain a sufficient number of cultures for antimicrobial resistance surveillance; 2) link antimicrobial susceptibility surveillance to epidemiological and clinical information; and 3) monitor treatment failures. We herein examine the associations between N. gonorrhoeae azithromycin resistance and epidemiological/clinical characteristics.

Methods Three regions participated: Montréal (two clinics recruiting mostly men having sex with men (MSM)), Montérégie (22 clinics recruiting mostly heterosexuals) and Nunavik (participated only in 2016, recruited mainly heterosexual Inuit people). One strain per year, per individual was selected. When data was presented for 2015–2017 (2015 was incomplete), the most recent strain per individual was considered. Proportions were compared using chi-square tests.

Results Between September 2015 and December 2017, 68% of episodes (840/1240) had a culture performed and 571 strains were obtained, including all duplicates. This analysis evaluated the efficacy and tolerability of gentamicin+azithromycin for treatment of uncomplicated rectal and pharyngeal gonorrhoea. However, only 10 pharyngeal infections and one rectal infection were examined. We further evaluated the efficacy and tolerability of gentamicin+azithromycin for treatment of uncomplicated rectal and pharyngeal gonorrhoea.

Conclusion Dual therapy including ceftriaxone plus azithromycin is currently the recommended first-line gonorrhoea treatment internationally. However, for gonorrhoea cases where ceftriaxone or other extended-spectrum cephalosporin can not be administered (e.g., cephalosporin resistance, allergy, or unavailability), the therapeutic options are very limited. In a previous randomized controlled clinical trial (RCT) by Kirk-caldy et al. (Clin Infect Dis. 2014), gentamicin 240 mg plus azithromycin 2 g showed 100% microbiological cure for uncomplicated gonorrhoea. However, only 10 pharyngeal infections and one rectal infection were examined. We further evaluated the efficacy and tolerability of gentamicin+azithromycin for treatment of uncomplicated rectal and pharyngeal gonorrhoea.