Reviewer’s report

Title: Gonorrhoea epidemiology, antimicrobial susceptibility/resistance and genetic characteristics of Neisseria gonorrhoeae isolates from Poland, 2010-2012

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Reviewer: Jo-Anne R Dillon

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The purpose of the research reported by Mlynarczyk-Bonikowska et al was to develop baseline data from Poland on the antimicrobial susceptibilities of Neisseria gonorrhoeae isolates (collected between 2010 and 2012) to a number of antibiotics; to determine possible emerging mechanisms of resistance to third generation cephalosporins by obtaining and analyzing the sequences of penA in isolates with reduced susceptibility; and, to ascertain the molecular epidemiology of the isolates by NG-MAST typing. As well, the authors report on trends in gonococcal incidence since 1970. The questions addressed are of utmost importance as it seems that Poland has changed neither its treatment guidelines since the 1940s (penicillin is still the recommended antibiotic for gonococcal infections) nor has there been any undertaking to ascertain what the status of gonococcal susceptibility might be. This is especially important since the threat of possibly untreatable gonorrhea infections is becoming an increasing possibility. The authors also emphasize that information from Poland on this important question has never been published in the international literature. As such, and despite the lack of really novel information, this paper represents an important first step.

The methods used are appropriate; specific comments to improve their description are detailed below. The data overall are sound and, again, comments on their presentation are listed below.

The major disappointment with the paper is that, even in view of the important, first time results obtained, a lack of commitment for continuation is evident. Despite the lack of a national program in Poland and the complete inappropriateness of the treatment guidelines for gonococcal infections, the authors have been unable to engage appropriate authorities for the action needed. i.e. on-going prospective surveillance and a review of treatment guidelines. They state “A national surveillance of AMR will HOPEFULLY be initiated in the future…” This type of statement is no longer good enough and I hope that in a revised version of the paper the authors will outline what concrete steps are being taken to address this.

Specific comments are as follows (major compulsory revisions):

1. The authors state that they describe the “epidemiology” of gonorrhea in
Poland. This is not really the case as only gonorrhea incidence from 1970 is reported. Figure 1 should include information going back to 1948. Client descriptors for gonorrhea isolates collected (age, sex) are not really epidemiological data and do not enhance the quality of the paper. The method of collection of the later data is not described, nor is any ethics approval indicated in the manuscript.

2. The methods for the identification of N. gonorrhoeae isolates should be better described. What specific sugar utilization test; what selective culture media; how were fresh clinical isolates shipped between laboratories; what medium was used for Etest (this should be clearly specified)?

3. There are a number of English grammar errors throughout the text. In some cases the font size differs and the format for the presentation of the text is different (e.g. figures and tables embedded in the text making it hard for the reader to distinguish text body from footnotes). Numbering the lines and pages would have made it easier to indicate exactly where these errors occurred.

4. Tables 2 and 3 overlap on most information and could be combined. As well, the presentation of MIC data in Table 3 is confusing. No statistics have been applied to these observations and furthermore, one is tempted to try to reconcile numbers in Table 2 with numbers in Table 3. Both of these Tables need to be rethought. Perhaps NG-MAST strain types with less than 5 isolates could be aggregated.

5. The conclusion section is repetitive and could be a brief paragraph.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

No competing interests whatsoever.