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Letters to the Editor

Antimicrobial resistance surveillance in Europe: regional pooling of national data from a small number of sites can be misleading



We read with interest the results of the European component of the Regional Resistance Surveillance study reported by Jones and colleagues in their online article on October 14, 2013 (Jones et al., 2013). This article presents antimicrobial susceptibility test results from a collection of European bacterial isolates with centralised determination of MICs for a large panel of antibiotics, followed by interpretation according to 2 international breakpoint definitions. The authors suggest that the results can be used to validate results from national and regional antimicrobial resistance surveillance programs, such as the European Antimicrobial Resistance Surveillance Network (EARS-Net) (ECDC, 2013).

Unfortunately, 2 important factors were not taken into account by the authors, which preclude the use of their results for validation purposes or to properly reflect the heterogeneous resistance situation in Europe. Firstly, the results were based on pooled data from only 47 hospitals in 21 countries. Secondly, the authors mentioned large variations in resistance percentages between countries, but these inter-country differences were neither thoroughly presented, nor discussed. As a consequence, the pooled estimates could be subject to bias due to poor representativeness and might not reflect the true picture of antimicrobial resistance in Europe.

Results from EARS-Net, based on routine microbiological data from approximately 1300 hospitals in Europe, have repeatedly shown that differences in antimicrobial resistance percentages between countries are substantial. As an example, the national percentage of invasive *Klebsiella pneumoniae* isolates resistant to third-generation cephalosporins varied between 2% and 75% among the 30 European countries that participated in EARS-Net in 2012. Similar significant inter-country differences can be found for many antimicrobial-microorganism combinations in the publicly available on-line EARS-Net database (ECDC, 2014).

As the authors state in their conclusions, antimicrobial resistance surveillance programs should be more widely supported to monitor emerging resistance trends and follow the impact of structured interventions at national, regional, and local levels. Moreover, although European readers may be tempted to use the data provided by the European component of the Regional Resistance Surveillance study to update their guidelines for empiric therapy of infected patients, due to the aforementioned limitations, much caution should be exercised in doing so. While national antimicrobial resistance data remain essential to describe the magnitude and trends in antimicrobial resistance in and between European countries, large variations may exist even within 1 single country (Carbonne et al., 2013; SWEDRES-SVARM, 2013; ECDC, 2013). It is, therefore, necessary for hospitals and physicians to be familiar with their local surveillance

data and use them as a basis for the creation of local guidelines as well as for empiric antimicrobial treatment of infections.

The Regional Resistance Surveillance study is indeed complementary to other surveillance programs such as EARS-Net and should, in principle, provide additional, useful information. This goal, however, is only partially achieved by this study due to the small number of participating sites and the fact that the pooled data at the regional level provide misleading information on antimicrobial resistance across Europe.

Conflicts of interest

We declare no conflict of interest.

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