

AMR: moving beyond a laboratory-focused, microbiological outcome

We commend the authors for highlighting the plight of migrants in Europe and alerting us to potential increased risk from antibiotic resistance that increased migration may bring.(1) However, we would be cautious about interpreting these findings for a number of reasons.

Firstly, antibiotic resistance is a complex issue that depends on the type of bacterial microorganism, specific patient factors, nutrition, vaccination, social determinants of health and antibiotic exposures.(2) Put simply, “antibiotic resistance” is a phenomenon that is measured in-vitro in a laboratory and based on technical guidelines that are usually determined through consensus, whilst the effects of resistant bacteria occur in-vivo and are seen in hospitals and the community.(3,4) This distinction is important when discussing the impact of antibiotic resistance because a laboratory-focused, microbiological definition of antibiotic resistance is often incorrectly interpreted as the clinical effects of infections caused by resistant bacteria. In this review, the majority of studies included asymptomatic patients who were screened opportunistically. Therefore, the clinical relevance of antibiotic resistant infections is of far greater relevance – and assessing this requires moving beyond a laboratory-focused, microbiological outcome. We appreciate that the number of included studies might have been insufficient to avoid lumping carriage of resistant organisms together with evidence of resistant infectious diseases. Indeed, a more meaningful pooled prevalence estimate of antibiotic resistant infections of 3% might give a better indication of the actual burden of antibiotic resistance.

Secondly, the emergence of resistant bacterial carriage is likely to be specific to each drug and to each organism combination, with varying implications for risk from future symptomatic infections. Therefore, aggregated resistance data can be unhelpful, and overinflated prevalence estimates can give a confused impression of clinical importance.

Thirdly, we accept migrants are heterogeneous groups of people across different settings. However, some included studies are so small that they may not be representative even of the broader group from which they were sampled. In order to make a valid comparison, we would also have preferred the authors to put their prevalence estimates into context by comparing these with non-migrant community-based populations in their host counties and sampled during the same season. Therefore, we may have an ecological fallacy where we compare resistance data amongst migrants to aggregate group data from non-migrant hospitalised patients who may or may not have been exposed to antibiotics.

Lastly, the authors have focussed on skin and soft tissue infections or diarrhoea. This is an important limitation. Data were unavailable for respiratory tract infections (excluding TB), which are by far the commonest presented infection in migrant and indeed indigenous communities even in high-income countries.

The authors highlight an important global issue: the prevalence of antibiotic resistance in migrants. Their results are important. However, if we are going to highlight the burden of antibiotic resistance, we feel their results speak to the prevalence of antibiotic resistant infections, rather than the prevalence of antibiotic resistance.

Declaration of interests

We declare no competing interests.

References

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