Enferm Infecc Microbiol Clin. 2017;35(3):139–140

Enfermedades Infecciosas y Microbiología Clínica

www.elsevier.es/eimc

Joint Document of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC) and the Spanish Society of Preventive Medicine, Public Health and Hygiene (SEMPSPH) for Combating Antimicrobial Resistance

Documento compartido de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (SEIMC) y la Sociedad Española de Medicina Preventiva, Salud Pública e Higiene (SEMPSPH) para combatir la resistencia antimicrobiana

Steering Committees of the Spanish Society of Preventive Medicine, Public Health and Hygiene (SEMPSPH) and of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC)

ARTICLE INFO

Article history:
Available online 27 February 2017

January 2017

Infectious diseases have undergone extraordinary changes in the past 30 years. Highly lethal infections have in the past been confined to middle and low income countries, where malaria, cholera and the Ebola virus have caused considerable mortality in native populations. In contrast, infections in developed countries have mostly been curable diseases, thanks to vaccines, antibiotics and modern hospitals. However, the influx of emerging infections (such as those caused by the human immunodeficiency virus, avian influenza, Ebola and Zika), antimicrobial-resistant microorganisms and the globalization of these pathogens have transformed this scenario.

The rising antimicrobial resistance has been so consistent that in less than one generation, the scientific community has gone from envisioning the end of microbial infections to being unable to help patients with severe microbial infections due to a lack of effective antimicrobials. We are now witnessing how these infections occupy the top positions among the most significant causes of death.

This is a tragic irony, even more so when we consider that the antimicrobial arsenal is the most powerful and numerous we have ever had. It is also a lesson in humility for the humans, which, at the height of its technical scientific capacity, is being defeated by such primitive beings. Although multi-drug resistant infections affect patients wherever they are (homes, hospitals and other institutions), the epicenter of the problem lies in hospitals where the considerable majority of severe infections and deaths caused by these bacteria occur. Hospitals are also where the microbes are transmitted with greatest efficiency.

We have reached this dire situation, among other reasons, because of the improper use of antimicrobials and infection control. The quality indicators for both procedures attest to this situation; 1 in 2 antimicrobial prescriptions is inadequate, and hand hygiene compliance is less than 50%, this despite the years-long work to improve them.

This problem has already been recognized by the Director of the World Health Organization who stated that antimicrobial resistance was one of the greatest global public health threats.[1] In May 2016, the economist Jim O'Neill published the document "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations",[2] which was commissioned by the ex-prime minister of the United Kingdom David Cameron. The document analyzed the problem of resistance, described its magnitude, proposed 10 recommendations to resolve them (which included reducing and optimizing the use of antimicrobials and improving control over the spread of infection) and estimated a cost of 40 billion dollars to achieve these recommendations. The problem achieved worldwide recognition in the General Assembly of the United Nations, in a high level meeting held on September 21, 2016, in New York, during which (with votes in favor from all member states) the Global Action Plan for Combatting Antimicrobial Resistance was approved.[3]

http://dx.doi.org/10.1016/j.eimc.2017.02.001

Having achieved this recognition, we now need to get the United Nations plan into effect in most countries. A number of countries (such as the United States, United Kingdom and France) have launched plans to combat antimicrobial resistance with millions in funding and with the explicit support of its political leaders.[4–6] Although Spain has had the National Plan Against Antibiotic Resistance (*Plan Nacional frente a la Resistencia a los Antibióticos*, PNRA) since November 2013, for now it is no more than a document without results and without funding.[7] The funding is the responsibility of the various national, territorial and local health authorities, in accordance with their obligation to protect the health of citizens and the commitment undertaken in signing the United Nations document. These authorities must also consider that the problem is even more severe in Spain, given that Spain is one of the top consumers of antibiotics and has one of the highest levels of antimicrobial resistance.[8,9] However, we lack information on Spain's problem. One estimate based on data from the US Centers for Disease Control calculated at least 3500 deaths per year in Spain due to infections caused by these microorganisms, a number 3-fold larger than the number of traffic deaths in 2015.[10,11] The difficulty in obtaining funding in Spain to combat antimicrobial resistance has recently been analyzed.[12]

Implementing the recommendations of the national and global plans for combating resistance[3,7] requires not only funding but also professional leadership, which is our task. The SEMPSPH and SEIMC assume the responsibility for leading the fight against antimicrobial resistance, because the prevention, diagnosis and treatment of infectious diseases form the core of our specialties' expertise: preventive medicine, public health, microbiology and infectious diseases. In 2012, in conjunction with the Spanish Society of Hospital Pharmacy (SEFH), we wrote the consensus document on optimization programs for the use of antimicrobials in Spanish hospitals (*programas de optimización del uso de los antimicrobianos en los hospitales españoles*, PROA).[13]

It seems that healthcare practitioners and politicians have at last understood that to address this formidable challenge we urgently need comprehensive actions that differ from those we have been doing so far. With this commitment document, SEMPSPH and SEIMC call on our associates' professionalism to carry out these actions without delay, through work in multidisciplinary teams led by preventivists, microbiologists and infectious disease specialists and coordinated by consensus documents until we have managed to control infections and optimize the use of antimicrobials. We exhort our leaders to facilitate the necessary tasks and funding. Only with comprehensive professional leadership and institutional support will we be able to reach the necessary level of competence and resources to defeat the extraordinary threat represented by antimicrobial resistance.

References

1. WHO. Antimicrobial Resistance Draft global action plan on antimicrobial resistance. Geneva: WHO; 2015. Available at: http://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_20-en.pdf
2. OíNeill. Tackling drugs resistant globally: final report and recommendations. London: Welcome Trust; 2016. Available at: https://amr-review.org/.
3. WHO. Global action plan on antimicrobial resistance. In: WHO. Sixty-Eighth World Health Assembly Geneva. 2016. Geneva, WHO, pp 127–144 (Document WHA64/2015/REC/1, annex 3) (Available at: http://apps.who.int/gb/ebwha/pdf_files/WHA68-REC1/A68_R1_REC1-en.pdf).
4. Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria. National Action Plan for Combating Antibiotic Resistant Bacteria. Washington, DC: White House; 2015 (Available at: http://www.microbiologiaysalud.org/wp-content/uploads/2015/04/National_Action_Plan_for_Combating_Antibotic-resistant_Bacteria.pdf).
5. Department of Health. UK Five Year Antimicrobial Resistance Strategy 2013 to 2018. London: Department of Health; 2013 (Available at: https://www.gov.uk/government/publications/uk-5-year-antimicrobial-resistance-strategy-2013-to-2018).
6. Ministère des Affaires sociales et de la Santé. 2011–2016 National antibiotic plan, English version. Paris: Ministère des Affaires sociales et de la Santé; 2011. Available at: http://social-sante.gouv.fr/IMG/pdf/presentation_plan_2011_2016_anglais_21122011.pdf
7. Spanish Agency for Medicines and Healthcare Products. Strategic and action plan for reducing the risk of selection and dissemination of antibiotic resistance. Madrid: Spanish Agency of Medicines and Healthcare Products (AEMPS); 2014. Available at: https://www.aemps.gob.es/publicaciones/publica/plan-estrategico-antibioticos/v2/docs/plan-estrategico-antimicrobianos-AEMPS.pdf
8. Laxminarayan R, Sridhar D, Blaser M, Wang M, Woolhouse M. Achieving global targets for antimicrobial resistance. Science. 2016;353:874–5.
9. Oteo J, Pérez-Vázquez M, Bautista V, Ortega A, Zamarrón P, Saez D, et al. The spread of KPC-producing Enterobacteriaceae in Spain: WGS analysis of the emerging high-risk clones of *Klebsiella pneumoniae* ST11/KPC-2, ST101/KPC-2 and ST512/KPC-3. J Antimicrob Chemother. 2016;71:3392–9.
10. Antibiotic Resistance Threats in the United States, 2013. Available at: https://www.cdc.gov/drugresistance/threat-report-2013/.
11. DGT, Statistical Yearbook of Accidents 2015. Madrid, General Directorate for Traffic 2016. Available at: http://www.dgt.es/Galerias/seguridad-vial/estadisticas-e-indicadores/publicaciones/anuario-estadistico-de-accidentes/anuario-accidentes-2015.pdf.
12. Cisneros JM, Rodríguez-Baño J. ¿Por qué es tan difícil en España conseguir financiación para luchar contra la resistencia a los antimicrobianos? Enferm Infecc Microbiol Clin. 2016;34:617–9.
13. Rodríguez-Baño J, Paño-Pardo JR, Alvarez-Rocha L, Asensio A, Calbo E, Cercenado E, et al. Programas de optimización del uso de antimicrobianos en los hospitales españoles. Documento de consenso GEIH-SEIMC, SEFH y SEMPSPH. Enferm Infecc Microbiol Clin. 2012;30, 22.e1–22.e23.