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Editorial

Prudent use of antimicrobials: Have we done the best we can? The SEIMC and REIPI statement

Uso prudente de los antibióticos: ¿hemos actuado de la mejor manera posible? el informe SEIMC y REIPI

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The use of antimicrobials has had undoubted benefits in the fight against infectious diseases. Nevertheless, due to the intense use of antimicrobials over the years, bacteria have reacted in a Darwinian way against the selective force exerted by the antimicrobials. Resistance to these compounds has risen to prominence and has become a major threat to public health. Clinical microbiologists have documented how this response was accelerated, not only by selection processes of resistant mutants, but also by different genetic events involving transfer of factors that determine resistance. As a result, clinicians have limited antimicrobial options and in certain cases there are no alternatives available within the current armamentarium for the treatment of specific infectious diseases.

Different terms have been coined to define this situation, including multi-drug resistance, extensive-drug resistance or even, pan-drug resistance. Modern organization of healthcare has made it easier for resistant bacteria to spread among the different health care settings. The nosocomial setting has blurred its borders with the extra-hospital setting, and resistant bacteria often escape from the former or, on the contrary, outpatients, colonised or infected with resistant bacteria, are admitted into the hospital. Furthermore, it has been clearly demonstrated that it is not just the use of antimicrobials in humans that is responsible for the presence of resistant bacteria. The emergence in the veterinary setting has been extensively documented, as well as the exchange of these resistant bacteria with humans through the food chain. As a consequence, resistant bacteria and the corresponding determining factors have also invaded the natural environment, thus facilitating the exchange of the resistance genes.

Within this scenario, the pharmaceutical industry has decreased its efforts to develop new antimicrobials and the lack of a robust

pipeline of new compounds has been suggested. Moreover, a pessimistic view that all struggles will be won by the bacteria has spread among certain areas of the scientific community, and different researchers have warned that we are entering in a “post-antibiotic era” with no return. Nevertheless, different experiences have demonstrated that the rational use of antibiotics can help to stop or minimise resistant bacteria from developing, and that promoting strict adherence to established infection control practises can curtail the spread of these bacteria.

In 2008 the European Centre for Disease Control (ECDC) (<http://www.ecdc.europa.eu>) outlined a common European strategy to fight against resistant bacteria and established November 18th as the European Antibiotic Awareness Day. The aim of this campaign is to provide an annual opportunity for increased awareness on the threat to public health of antibiotic resistance and how to use antibiotics responsibly. Previous editions have focused their efforts on the general population and primary care prescribers, while this year it will be on hospital prescribers.

The SEIMC (Spanish Society of Infectious Diseases and Clinical Microbiology) (<http://www.seimc.org>) and REIPI (Spanish Network of Research in Infectious Diseases) (<http://www.reipi.org>) have joined their efforts with the Spanish health authorities to promote this campaign in Spain. This strategy consists of different initiatives, including educational meetings for practitioners, press releases, and key messages for the public domain. Moreover, the “Enfermedades Infecciosas y Microbiología Clínica” journal has produced a special supplement entitled “Prudent use of antimicrobials in clinical practice”, and a series of three consecutive editorials from different experts will also be published in this journal (October, November, and December issues)^{1–3}. These editorials will cover key topics on the prudent

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use of antimicrobials and bacterial resistance containment. With these initiatives SEIMC and REIPI will try to promote awareness on antimicrobial use and influence all players responsible for antimicrobial resistance. Optimising the use of antimicrobials will minimise the selective pressure of these compounds, and the emergence and spread of resistant bacteria. We all need to do our best to preserve antimicrobial susceptibility in bacterial populations to ensure effective infectious disease management in the near future.

References

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