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ETHICAL ASPECTS OF ANTIMICROBIAL RESISTANCE

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Abstract

With the increase of antibiotic use, certain bacterial strains evolved developing resistance to the drugs to which they were initially sensitive. The fight against antimicrobial resistance is based on an ethical principle for the protection of human, animal and environmental health. In this paper, we aim to provide an overview on the ethical challenges that arise in the context of antimicrobial resistance. Who should have access to antibiotics? Who should get antibiotics? Should current use of antibiotics be restricted? These are just some of the ethical questions that need to be addressed. A report of the World Health Organization (WHO) shows that drug resistance - particularly antibiotic resistance - is a growing threat to human health, food security and modern medicine. When people recklessly use antibiotics to fight a common cold, when farmers use antibiotics to boost animal productivity, the bacteria that the drugs are designed to kill become immune. Unfortunately, this is a scary reality. In conclusion, antimicrobial resistance has been described as one of the main threats to individual health and population in the 21st century, and national and international organizations have repeatedly emphasized the urgent need for action.

Keywords: antibiotics, resistance, bacteria, health.

Introduction

Antibiotics have a profound impact on human health, by their ability to prevent and reduce the transmission of several infectious diseases (Bernaz, 2016). On the other hand, the emergence of the antimicrobial resistance (AMR) phenomenon limits the wide use of this group of drugs (Goossens et al., 2005). This is due to the use of antibiotics and how they are consumed (Guillemot et al., 1998). As a result, AMR is a threat to global health that affects all countries, increasing antibiotic resistance threatens the effectiveness of current and future antibiotics (Cars et al., 2008).

Taking into account the given circumstances and not only, several evaluation programs (Ansari et al., 2010; Davey et al., 2013) and strategies (Berrington, 2010; Polk, Hohmann, Medvedev & Ibrahim, 2011) have been developed and implemented for the prudent use of antibiotics and control over antimicrobial resistance. Despite the measures listed, the negative impact on human health due to antimicrobial retention and irrational use of antibiotics is a huge one and currently impossible to estimate (Pinner et al., 1996).

All of these have raised ethical issues around the best path forward. For example, is it better to treat patients now with antibiotics right away and in high dosages, while risking the development of a resistance to the treatment? Or is it better to treat current patients with alternatives to antibiotics and in lower dosages so as to prevent future generations of patients from having to deal with higher frequencies of resistant bacteria? Should we be making it easier to develop drugs in order to promote the production of new antibiotics (Littmann & Viens, 2015)?

These, and not only, are some of the ethical questions that need to be addressed in order to find a solution to combat antibacterial resistance.

Material and methods

The purpose of this paper is to present a systematic review of the literature concerning major aspects of the ethical challenges that arise in the context of antimicrobial resistance. We tried to point out why antimicrobial resistance is an ethical issue, who is responsible for controlling AMR, what specific moral issues raise and how we should broadly address the ethical issues raised by AMR.

For the present study, we analyzed the specialized literature in the field over the last 10 years.

Results and discussions

Since the first warnings about AMR in 1945, many researches have focused on strategies to combat antibiotic resistance. As AMR has a global impact that persists over time, new ethical issues always arise. In contrast with science, which is descriptive, ethics is normative. Ethics deals with what we ought to do or ought not to do. It tries to distinguish right from wrong using an ethical framework (Littmann, Buyx & Cars, 2015).

Why is AMR an ethical issue?

It is well known that AMR occurs as a result of the complications of treating infectious diseases. But what is not fully understood is the fact that AMR is a complex, multifaceted global challenge affecting the environment, human and animal health, agriculture and the economy. In the short term, it is an ethical problem (Gerber et al., 2013). And here comes the responsibility to act, to slow down resistance tendencies to give time to find new ways to treat the infection. If nothing is done, then future patients will be deprived of life-saving drugs. This is unacceptable, especially after humanity has experienced a "golden age of antibiotics (Frenk, Gómez-Dantés, & Moon, 2014).

Who is responsible for controlling AMR?

Due to the speed and scale with which we must react in order to prevent a post-antibiotic age, we are also faced with what constitutes a proportionate response and, crucially, who has the responsibility to act (Davey et al. 2013). From general practitioners, veterinary doctors, patients to pharmaceutical companies, hospitals or government institutions, everyone is responsible for controlling AMR.

Healthcare prescribers make a significant contribution to antimicrobial stewardship. According to the Centers for Disease Control and Prevention (CDC), 1 of 3 antibiotics prescriptions is unnecessary, because prescribers are unsure of the diagnosis (Leung, Weil, Raviglione & Nakatani, 2011). This category also includes antimicrobial prophylaxis for "at risk" healthy people.

Another issue that contributes to the increased AMR is that of antibiotics purchased from the pharmacy, without prescription. A 2014 survey conducted by the World Health Organization (WHO) reported that of 43 European countries, 19 allowed certain antibiotics to be purchased from pharmacies (WHO, 2014). The report concluded that pharmacists could do more to restrict and improve antibiotic use for the public.

There are also additional ethical considerations for AMR involving veterinary and agricultural industries. Restrictions for farmers can endanger the quality and quantity of food production with economic consequences (Parsonage et al., 2017).

Without choosing a certain ethical system, studies show that the right to health is a human right no matter who we are or where we live. This means that the distribution of antibiotics in a fair and sustainable manner is a moral obligation (Dawson & Jennings, 2012).

The effectiveness of antibiotics depends on the type and location of the infection, the mode of administration and the appropriate dose, the establishment of the appropriate number of days of treatment. Failure to follow the recommendations can lead to inactivation of antibiotics. Therefore, it is imperative that actions to combat antibiotic resistance be concerted on a global scale (Dancer, 2016).

With more clarity on why AMR is itself a moral issue and the number of significant ethical issues it raises, the question remains how we should proceed. What is certain is that finding solutions will involve many individuals and institutions that will contribute to the development of strategies, policies and criticisms in this field, and contributions and efforts from at least four areas are required: (i) ethics, (ii) policy, law and regulation, (iii) public health practitioners and health care workers, and (iv) civil society and industry (Dawson & Jennings, 2012).

Conclusion

Antimicrobial resistance (AMR) will remain one of the key threats to global health in the years and decades to come. It is already costing thousands of lives every year. The European region is not spared and unless AMR is tackled rapidly, it will likely become one of the top causes of death, globally and in Europe.

As a result, the approach of AMR becomes an ethical obligation, as the prospect of diminishing the effectiveness of the treatment of infectious diseases affects everyone. Without preventive action, the loss of drugs that have saved lives in the last century will condemn us, people we know and people we do not know, to an unacceptable risk of untreatable infections.

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