

Antimicrobial Resistance and Antibiotic Consumption

Opinion

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Antimicrobial Resistance (AMR) is one of the biggest threats to the global health that affects all countries and continents. The increasing scale of international travel and trade facilitates rapid spread of resistant microorganisms worldwide. Antibiotic resistance already costs 700,000 deaths each year, and according to World Health Organization (WHO), Centre for Disease Prevention and Control (CDC) in Atlanta and European Centre for Disease Prevention and Control (ECDC) this number could rise up to 10 million by 2050. This is why there is no wonder that the WHO points antimicrobial resistance as one of the biggest health threats [1]. Overuse and misuse of antibiotics are the among the main drivers triggering the development of antimicrobial resistance. In addition, microorganisms can readily exchange resistance genes between each other [2]. Antibiotic resistance to last-line antibiotics and the spread of multidrug-resistant and even pan-resistant strains compromises the effectiveness of life saving medical interventions such as intensive care, organ transplantation and cancer treatment [3].

The COVID-19 pandemic has affected countries and societies worldwide. In addition to the direct COVID-19-related morbidity and mortality, one of the main complications of COVID-19 are secondary bacterial infections, which are also connected with the rising levels of antimicrobial resistance. The link between antibiotic consumption and AMR has attracted the attention of the scientific community since the 1960s. There is an interesting trend in the last data reported to the European Surveillance of Antimicrobial Consumption Network (ESAC-Net), collected using a standardized methodology and expressed as Defined Daily Doses (DDD) per 1,000 inhabitants per day, using the Anatomical Therapeutic Chemical (ATC) System [4].

Twenty-seven countries reported antimicrobial consumption in the community for 2019 and 2020. Twenty-six of them reported a decrease in community consumption of antimicrobial agents for systemic use in 2020 compared with 2019, while one country (Bulgaria) reported an increase during the same period. The unprecedented decrease in community antibiotic consumption noted in Europe between 2019 and 2020 is the largest in ESAC-Net's twenty-years long antimicrobial consumption surveillance history, and one example of the far-reaching consequences of the COVID-19 pandemic [5].

Surveillance of antibiotic consumption within a country is an important component of a national action plan. It allows for informed decisions on where to focus efforts to reduce unnecessary use. Information on antibiotic consumption at the national level is valuable when formulating policies or making decisions on prescribing guidelines or guidelines for prudent use of antimicrobials. Consumption data is further useful for benchmarking purposes and comparison between countries, regions and hospitals [5]. Obviously, Bulgaria is lagging behind European trends and needs to implement very quickly its strategy and action plan to combat antimicrobial resistance.

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