

Impact of a Structured Antimicrobial Stewardship Program in a North-East Italian Hospital

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Abstract : A National Action Plan to fight antimicrobial resistance was launched in Italy in 2017. In order to reduce inappropriate exposure to antibiotics and infections from multi-drug resistant bacteria, it is essential to set up a structured system of surveillance and monitoring of the implementation of National Action Plan standards, including antimicrobial consumption, with a special focus on quinolones, third generation cephalosporins and carbapenems. A quantitative estimate of antibiotic consumption (defined daily dose - DDD - consumption per 100 days of hospitalization) has been provided by the Pharmaceutical Service to the Hospital of Cittadella, ULSS 6 Euganea - Health Trust (District of Padua) for the years 2019 (before the pandemic), 2020 and 2021 for all classes of antibiotics. Multidisciplinary meetings have been organized monthly by the local Antimicrobial Stewardship Group. Between 2019 and 2021, an increase in the consumption of carbapenems in the Intensive Care Unit (from 12.2 to 18.2 DDD, + 49.2%) and a decrease in Medical wards (from 5.3 to 2.6 DDD, - 50.9%) was reported; a decrease in the consumption of quinolones in Intensive Care Unit (from 17.2 to 10.8 DDD, - 37.2%), Medical wards (from 10.5 to 6.6 DDD, - 37.1%) and Surgical wards (from 10.2 to 9.3 DDD, - 8.8%) was highlighted; an increase in the consumption of third generation cephalosporins in Medical wards (from 18.1 to 22.6 DDD, + 24,1%) was reported. Finally, after an increase in the consumption of macrolides between 2020 and 2019, in 2021, a decrease was reported in the Intensive Care Unit (DDD: 8.0 in 2019, 18.0 in 2020, 6.4 in 2021) and Medical wards (DDD: 9.0 in 2019, 13.7 in 2020, 10.9 in 2021). Constant monitoring of antimicrobial consumption and timely identifying of warning situations that may need a specific intervention are the cornerstone of Antimicrobial Stewardship programs, together with analysing data on bacterial resistance rates and infections from multi-drug resistant bacteria.

Keywords : carbapenems, quinolones, antimicrobial, stewardship

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