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Antimicrobials: Antibiotic usage

Antimicrobial use in Serbia: first results of the WHO/Europe-ESAC project

V. Radonjic¹, A. Versporten², G. Bolokhovets³, H. Bak Pedersen³, H. Goossens²

¹Medicines and Medical Devices Agency of Serbia, Belgrade, Serbia ; ²Laboratory of Medical Microbiology Vaccine and Infectious Diseases Institute, University of Antwerp, Antwerp, Belgium ;

³Health Technologies and Pharmaceuticals Division of Health Systems and Public Health, the WHO Regional Office for Europe, Copenhagen, Denmark

Objectives

There is no reliable data on antimicrobial use in non-European-Union (EU) south-eastern European countries (SEE) and newly independent states (NIS). We aimed to collect valid, representative, comparable total national wholesales data on systemic antimicrobial use in Serbia, a SEE country with a population of 7.310.000 (<http://cia-world-fact-book.findthedata.org/d/d/2011>).

Methods

Valid 2011 total antimicrobial use data of Serbia were analysed according to the WHO Anatomical Therapeutic Chemical (ATC)/Defined Daily Doses (DDD) methodology and expressed in DDD/1000 inhabitants/day (DID). Wholesales data on antibacterials (ATC group J01), antimycotics (J02) and antifungals (D01BA) were provided by the Medicines and Medical Devices Agency of Serbia, covering 100% of the population.

Results

Total (outpatients and hospital care) antibacterial use was 25.6 DID. The top 5 antibacterial subgroups (ATC level 3) were: penicillins, ATC group J01C (11.1DID, 43.2% of all antibacterials); macrolides, lincosamides and streptogramins, ATC group J01F (5.0 DID, 19.5%); other beta-lactam antibacterials, ATC group J01D (3.6 DID, 14.2%); quinolones, ATC group J01M (2.6 DID, 10.1%) and tetracyclines, ATC group J01A (2.3 DID, 9.0%). The top 5 antibacterials (ATC level 5) were: amoxicillin (6.6 DID, 25.8%); amoxicillin and enzyme inhibitor (co-amoxiclav, 3.8 DID, 14.8%); azithromycin (2.7 DID, 10.4%); cephalexin (2.3 DID, 8.8%) and doxycycline (2.2 DID, 8.7%). Serbia reported considerable use of piperimidic acid (0.9 DID, 3.7%) and of the oral third-generation cephalosporin cefixime (0.5 DID, 2.1%). Use of sulphonamide and trimethoprim in Serbia was low (0.2 DID, 0.8%). Use of nitrofurantoin was not reported. Total antimycotic and antifungal use was low (0.36 DID). The top 3 were: ketoconazole (0.24 DID, 67.3% of all antimycotics and antifungals), itraconazole (0.06 DID, 17.4%) and fluconazole (0.04 DID, 11.0%).

Conclusions

We present for the first time a standardised and validated data set of systemic antimicrobial use in Serbia. Particular for Serbia is the high use of macrolides, mainly of the long-acting macrolide azithromycin, and piperimidic acid, which is common to many former Yugoslavian countries. These data offer opportunities for antimicrobial quality target setting. Sustainable surveillance data will facilitate auditing of antimicrobial use and evaluation of the implementation of guidelines and public health policies to promote its judicious use.