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Antimicrobials: Antibiotic usage

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

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Objectives

There is no reliable data on antibiotic 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 Belarus, a NIS with a population of 9.481.000 (<http://belstat.gov.by/homep/ru/indicators/population.php>).

Methods

Valid 2011 total antimicrobial use data of Belarus 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 Ministry of Health and the Marketing Research Company covering 100% of the population.

Results

Total (outpatients and hospital care) antibacterial use was 17.9 DID. The top 5 antibacterial subgroups (ATC level 3) were: penicillins, ATC group J01C (7.9 DID, 38.5% of all antibacterials); tetracyclines, ATC group J01A (3.0 DID, 16.9%); other beta-lactam antibacterials, ATC group J01D (2.3 DID, 13.0%); macrolides, lincosamides and streptogramins, ATC group J01F (1.6 DID, 9.2%) and quinolones, ATC group J01M (1.5 DID, 8.3%). The top 5 antibacterials (ATC level 5) were: doxycycline (2.7 DID, 15.1%); amoxicillin (2.6 DID, 14.5%); amoxicillin and enzyme inhibitor (co-amoxiclav, 2.1 DID, 11.8%); ampicillin (2.1 DID, 11.7%); and nitrofurantoin (1.4 DID, 7.8%). Use of sulphonomides and trimethoprim was low (0.07 DID, 0.4%). Use of amphenicols was 0.4 DID (2.3%). Parenteral antibiotic use represented 14.6% of total antibiotic use (2.6 DID) and included mainly the third-generation cephalosporins ceftriaxone (1.2 DID) and cefotaxime (0.7 DID). 55.7% of all antibacterials were domestically produced (10.0 DID). Imported antibacterials were mainly manufactured in the United Kingdom (1.4 DID, 8.1% of all antibacterial use) and Ukraine (1.0 DID, 5.6%). Total antimycotic and antifungal use was 0.7 DID. The top 3 were: fluconazole (0.3 DID, 47.2% of all antimycotics and antifungals), ketoconazole (0.09 DID, 12.4%) and itraconazole (0.08 DID, 12.1%).

Discussion

We present for the first time a standardised and validated data set of systemic antimicrobial use in Belarus. Belarus is a low-antibiotic-use country. A particular finding is the high doxycycline use. Likewise ceftriaxone use is high, which is manufactured domestically and cheap. These data facilitate auditing of antimicrobial use, the evaluation of guidelines and the implementation of public health policies to promote its judicious use.