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Publication Only

Antimicrobials: Antibiotic usage

Antimicrobial use in republic of Moldova: 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 Moldova, a NIS with a population of 3.544.900 <http://hdrstats.undp.org>.

Methods

Valid 2011 total antibiotic use data of the Republic of Moldova 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 Agency of Medicines of Ministry of Health, Health Insurance Company, covering 100% of the population.

Results

Total (outpatients and hospital care) antibacterial use was 21.2 DID. The top 5 antibacterial subgroups (ATC level 3) were: penicillins, ATC group J01C (7.5 DID, 35.4% of all antibacterials); other beta-lactam antibacterials, ATC group J01D (3.2 DID, 15.2%); quinolones, ATC group J01M (2.7 DID, 12.7%); macrolides, lincosamides and streptogramins, ATC group J01F (2.2 DID, 10.4%) and sulfonamides and trimethoprim, ATC group J01E (1.7 DID, 8.0%). The top 5 antibacterials (ATC level 5) were: amoxicillin (4.4 DID, 20.6%); ampicillin (1.9 DID, 9.0%); sulfamethoxazole/trimethoprim (1.6 DID, 7.7%), nitrofurantoin (1.3 DID, 6.2%) and ciprofloxacin (1.3 DID, 5.9%). Use of levofloxacin was 0.7 DID (3.3%). Total parenteral antibiotic use was 18.2% (3.9 DID) representing mainly cefazolin, a first-generation cephalosporin (0.9 DID); ceftriaxone, a third-generation cephalosporin (0.9 DID); and ampicillin (0.5 DID). 24.4% of all antibacterials were domestically produced (5.2 DID). Imported antibacterials were mainly manufactured in India (3.1 DID, 16.6% of all antibacterial use), Germany (1.9 DID, 8.8%) and China (1.6 DID, 7.5%). Total antimycotic and antifungal use was 0.8 DID. The top 3 were: fluconazole (0.6 DID, 83.1% of all antimycotics and antifungals), itraconazole (0.1 DID, 12.7%) and ketoconazole (0.03 DID, 4.2%).

Conclusions

We present for the first time a standardised and validated data set of systemic antimicrobial use in Republic of Moldova. More research is needed to understand elevated parenteral use, which cannot be explained by hospital use only. The lack of regulatory requirement of compliance of registered medicines with requirement of good manufacturing practice for some of the imported countries is a concern because it may lead to reduction of the effectiveness of antimicrobials. These data facilitate auditing of antimicrobial use and evaluation of the implementation of guidelines and public health policies to promote its judicious use.