

R231

Publication Only

Antimicrobials: Antibiotic usage

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

N. Maqsudova¹, A. Versporten², S. Isupov³, G. Bolokhovets⁴, N. Sautenkova⁴, H. Goossens²

¹Avicenna Tajik State Medical University, Dushanbe, Tajikistan ; ²Laboratory of Medical Microbiology Vaccine and Infectious Diseases Institute, University of Antwerp, Antwerp, Belgium ; ³Pharmaceutical Research Centre, Ministry of Health, Dushanbe, Tajikistan ; ⁴Health 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 Tajikistan, a NIS with a population of 7.501.200 (Public health and health care in the Republic of Tajikistan in 2011. Ministry of Health, Dushanbe, 2012. p.41-45).

Methods

Valid 2011 total antimicrobial use data of Tajikistan 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 Medicinal Agency, covering 97.7% of the population.

Results

Total (outpatients and hospital care) antibacterial use was 34.8 DID. The top 5 antibacterial subgroups (ATC level 3) were: penicillins, ATC group J01C (18.2 DID, 52.3% of all antibacterials); other beta-lactam antibacterials, ATC group J01D (5.9 DID, 17.0%); quinolones, ATC group J01M (3.6 DID, 10.2%); sulfonamides/trimethoprim, ATC group J01E (2.0 DID, 5.6%) and other antibacterials, ATC group J01X (1.8 DID, 5.0%). The top 5 antibacterials (ATC level 5) were: amoxicillin (10.5 DID, 30.1%); ampicillin (5.4 DID, 15.5%); ceftriaxone (4.7 DID, 13.5%); ciprofloxacin (2.0 DID, 5.7%) and sulfamethoxazole and trimethoprim (1.7 DID, 5.0%). Use of amphenicols was 0.6 DID (1.7%). Total macrolide, lincosamide and streptogramin use (0.7 DID; 2.1%) and co-amoxiclav use (0.2 DID; 0.5%) was low. Parenteral antibiotic use was very high (11.5 DID; 31.1% of total antibiotic use) and included ceftriaxone, 2.1 DID of ampicillin and 1.0 DID of cefazolin. Tajikistan mainly imported antibiotics manufactured in India (12.0 DID, 34.4% of all antibacterial use) followed by Russia (6.6 DID, 19.0%) and China (5.9 DID, 17.0%). Total antimycotic and antifungal use was 0.63 DID and represented fluconazole (0.63 DID, 99.8%) and terbinafine (0.001 DID, 0.2%).

Conclusions

We present for the first time a standardised and validated data set of systemic antimicrobial use in Tajikistan. High volumes of antibacterial use were observed. The high use of amoxicillin could primarily indicate the need for quality improvement (reduce quantity of antibiotic use). More in depth studies are needed to understand the remarkably high parenteral use of antibacterials, especially ceftriaxone, 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 poor quality of antimicrobials. 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.

