Knowledge, attitude and practice of community pharmacists towards antibiotic use and resistance in Hungary

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Introduction

Infections caused by antibiotic resistant bacteria are associated with prolonged hospitalization, increased mortality rate and higher medical costs. Because of the scarcity of novel antibacterial agents, the conscious use of these drugs is of paramount importance. Community pharmacists have a pivotal role in facilitating the prudent use of antibiotics. The aim of our study was to evaluate the knowledge and attitude of community pharmacists related to antibiotic use and resistance in Hungary.

Methods

A self-administered questionnaire-based study was performed at pharmacies, as well as during postgradual training courses aiming community pharmacists throughout Hungary. The study protocol was approved by the Human Investigation Review Board at the University of Szeged (Registration number: 3688 [215/2015-SZTE]). Participants provided an informed written consent.

Statistical analyses were performed using IBM SPSS Statistics 24.0 software (descriptive and analytical statistics, χ^2-test; level of significance: $p<0.05$).

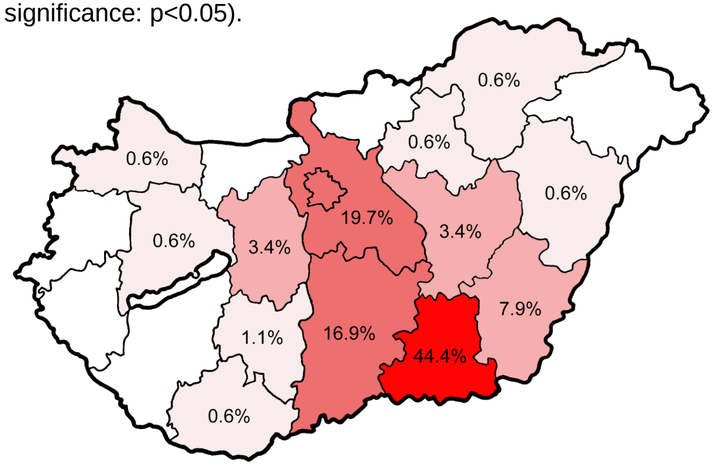

Figure 1. Distribution of participants from the various counties in Hungary (n=172)

Results

Data collection has been running since January 2016, with 172 respondents (with a rejection rate of 53.0%) involved so far. 72.1% of the respondents polled female, with an average age of 34.75±11.41 years. 34.3% of pharmacists had at least one specialty (predominantly related to pharmacology and pharmacy management).

According to 93.6% of the respondents, antibiotics are medicines of special importance, whilst all respondents agreed that the overuse and misuse of these drugs is a critical issue. 87.8% believes that pharmacists enabling non-prescription antibiotic use are a public health concern. 40.2% of medical professionals agreed with Hungary's current funding policy on antibiotics.

89.0% considered their knowledge on antimicrobial therapy appropriate, while this number was 70.3% when it comes to the mechanisms of infectious diseases and their prevention, and only 66.9% on antibiotic resistance. Those dissatisfied predominantly have no specialty ($p=0.006$). 93.0% agreed that the academic curriculum of future pharmacists should focus more on topics such as antimicrobial resistance and infectious diseases.

As stated by almost half (44.2%) of the answerers, the temperament of patients significantly influences their dispensing practices (on antimicrobials in particular), those with specialties are less prone to be influenced in this fashion ($p=0.003$). When the respondents were asked about the extension of the role of pharmacists (e.g., deciding on the treatment of uncomplicated infections following diagnosis, administering vaccinations) 51.7% disapproved (predominantly older medical professionals $p=0.003$; those without a specialty $p=0.011$).

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The authors declare that there is no conflict of interest.

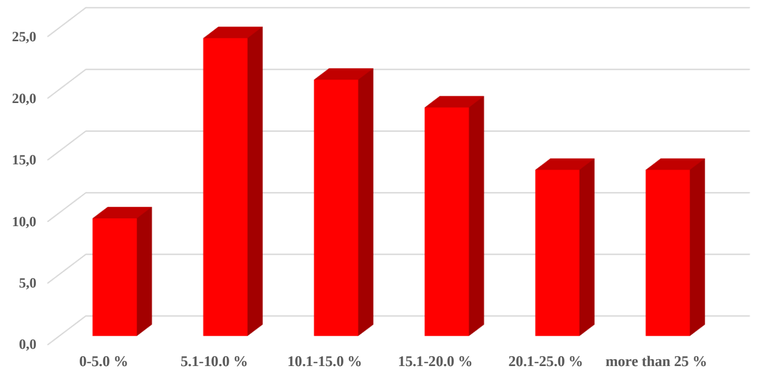

Figure 2. Ratio of antibiotic prescriptions compared to the total prescription drug traffic of given pharmacies, according to the respondents' assessments

75.0% of pharmacists stated that they had never given out antibiotics without a medical prescription, while 21.9% and 3.1% admits to giving out non-prescription antibiotics in <1% of instances and in 1-5% of cases, respectively. 77.6% felt that the use of antibiotics in animal husbandry plays an equally important role in the spread of resistance.

Conclusions

Community pharmacists are in direct contact with patients though dispensing and implementation of pharmaceutical care, representing the first line of action for patient safety and the prudent use of antibiotics. A fraction of respondents allows for non-prescription antibiotic use, and needs help in the realization of the importance of antibiotic resistance. There is still resistance among pharmacists in Hungary against the extension of their roles in primary care.

Implementation of novel teaching methods and curriculum improvement at universities training pharmacists is needed, related to the topic of infectious diseases and antimicrobial stewardship. On the other hand, continuous professional development (CPD) and specialty training is essential to maintaining the competence of healthcare professionals, and consequently, preserving the efficacy of antibiotics.