PREVALENCE OF SELF-MEDICATION WITH ANTIMICROBIAL DRUGS IN THE SOUTHEAST REGION OF ROMANIA

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PREVALENCE OF SELF-MEDICATION WITH ANTIMICROBIAL DRUGS IN THE SOUTHEAST REGION OF ROMANIA (Abstract): Self-medication represents a global health issue with an increasing negative impact on the society regarding health evolution and socio-economic progress. There are few studies regarding the self-medication practices with antimicrobial drugs in general population in Romania. Aim: to evaluate the prevalence of self-medication with antimicrobial drugs in general population in the counties of the southeast region of Romania. Material and methods: a questionnaire-based cross-sectional study which investigated the rate of self-medication with antimicrobial drugs in a population from the counties of the southeast region of Romania during 2016-2017. Data were analyzed using descriptive statistics and the chi-square test, when applicable. Results There were 355 persons included in the study, with a predominance of female sex (62.8%) and of persons with urban residence (57%). The most common antimicrobial drugs used for self-medication were amoxicillin (34%), followed by amoxicillin-clavulanate (32%), and the most frequently reported reasons for self-medication were respiratory infections (52%), and genitourinary infections (25%). Conclusions: This study reveals a medium prevalence of self-medication with antimicrobial drugs in the population from South-eastern Romania. Keywords: SELF-MEDICATION, ANTIMICROBIAL DRUGS, PREVALENCE.

Self-medication represents a global health issue with an increasing negative impact on the society regarding health evolution and socio-economic progress (1). According to World Health Organization (2), self-medication is defined as “the selection and use of medicine by individuals to treat self-recognized illness or symptoms”. Self-medication practice involves procuring medicines without a prescription, reusing old prescriptions in order to buy medicines, recommending particular medicines to relatives and acquaintances, consuming leftover medicines kept at home, non-compliance with the professional prescription by interrupting or decreasing the doses (3). Several studies have established the main factors that influence self-medication practice: socio-demographic characteristics (gender, age), socio-cultural aspects (level of education, access to information, accessibility to health care facilities), economic and political factors (3, 4).

Self-medication behavior has a major impact on health promotion of the population. The health system is positively influenced by a responsible self-medication practice which helps in preserving the medical resources and reducing costs. An inappropriate self-medication practice has mul-
multiple negative effects such as a delay in managing the health problem by a doctor, a failure in identifying the contraindications of the drug and the interactions between the self-administered drugs, the appearance of adverse effect leading to hospital admissions, risk of abuse and addiction, an inadequate period of treatment and an increasing resistance to pathogens (5, 6).

In Romania, antibiotics are released only with medical prescription, but leftover medicines stored at home are sources for self-medication in the case of antibiotics. Few studies (7) regarding self-medication practices with antimicrobial drugs in the general population in Romania were published. Therefore, a questionnaire-based cross-sectional study was conducted with the aim to evaluate the prevalence of self-medication with antimicrobial drugs in the general population in the counties of the south-east region of Romania.

MATERIAL AND METHODS

The present study represents a questionnaire-based cross-sectional study which investigated the rate of self-medication with antimicrobial drugs in a population from the counties of the southeast region of Romania during November-December 2016. The Ethics Committee of the University of Medicine and Pharmacy Grigore T. Popa approved the study. Verbal consent was obtained from all participants after a brief introduction by explaining the aim and the significance of the study. To collect data, we cooperated with pharmacies from Galati, Braila, Buzau and Vrancea, counties of the south-east region of Romania. In the study were included only adults (>18 years). Before filling the questionnaires, each potential participant was informed about the purposes of the study and the confidentiality of the information. We excluded from the study the individuals who presented at the pharmacy with a medical prescription for a disorder that required antimicrobial drug treatment or people buying cosmetics or medical equipment. A self-administrated questionnaire, organized in two parts, was prepared after reviewing the literature for similar studies and validated as previously described in the study of Damian et al., in 2014 (7). The first part of questionnaire contained information regarding demographic characteristics of the population (gender, age, employment status) and information related to general self-medication practiced during the last 6 months. The second part of the questionnaire was focused on the use of the antimicrobial drugs (name of antimicrobial drug, treatment period, person who recommended the treatment and the illness that required the use of antibiotic, in case of confirming the use of antibiotic in the last 6 months). Means ± standard deviation (SD) were used for quantitative variables like age, while frequencies and percentages were used for qualitative variables. Data were analyzed using SigmaPlot 11 descriptive statistics and the chi-square test was used to test the differences between proportions. A limit of p value less than 0.05 was considered significant.

RESULTS

There were 355 persons included in the study, with a predominance of female sex (62.8%) and of people with urban residence (57%). Participants’ age in the study ranged from 18 to 90 years, with a mean of 42±9. The unemployed group included students and retired individuals (tab. I).

The results showed that the practice of self-medication is differently correlated to age. In the group of >60 years old, the rate of self-medication is the highest (51%) in comparison with the 51-60 years group, where the practice of self-medication was
the lowest (26%). The irrational use of the antimicrobial drugs among the respondents was applied based on self-recommended medicine, the pharmacist recommendation, the advice of a relative or a friend and a low percentage using internet information. The most common antimicrobial drugs used for self-medication were amoxicillin (43%), followed by amoxicillin-clavulanate (32%), and the most frequently reported reasons for self-medication were respiratory infections (52%), and genitourinary infections (25%).

**TABLE I**

Socio-demographic characteristics of the study population (n=355)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Age (years)</th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≤20 (n=37)</td>
<td>21-30 (n=123)</td>
<td>31-40 (n=56)</td>
<td>41-50 (n=69)</td>
<td>51-60 (n=38)</td>
<td>&gt; 61 (n=32)</td>
<td>Total</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>16</td>
<td>43</td>
<td>19</td>
<td>25</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>21</td>
<td>80</td>
<td>37</td>
<td>44</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td>Place of residence</td>
<td>Urban</td>
<td>13</td>
<td>23</td>
<td>53</td>
<td>61</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
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<td>100</td>
<td>3</td>
<td>8</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Employment status</td>
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<td>60</td>
<td>49</td>
<td>61</td>
<td>26</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Unemployed</td>
<td>35</td>
<td>63</td>
<td>7</td>
<td>8</td>
<td>12</td>
<td>30</td>
</tr>
</tbody>
</table>

**DISCUSSION**

The irrational use of antimicrobial drugs represents a much-explored area by the researchers. Many studies (8, 9, 10) focused on establishing the prevalence of antibiotic self-medication.

A study (8) conducted in Central Saudi Arabia in community pharmacies showed that a group of medicines with the highest rate of dispensing without a medical prescription is represented by antibiotics in a percentage of 22% (8). Another study (9) organized in Saudi Arabia after 3 years, in 2014, recorded a very high rate of irrational use of antibiotics. The 78.7% percentage showed that from a total of 681 responders to the study, 536 were antibiotic self-medicated. Another data showed by the study was the probability of the prevalence of self-administrated antibacterial drugs, which was higher among the older respondents compared to the younger participants from the age group 18 to 30 years.

In 2014, Banerjee et al. (10) evaluated the rate of irrational use of medication in a community of Nepal medical students. The results showed a self-medication rate of 81.35% with the antibiotics on the second place among the most common self-administered drugs. The students’ community, the young and informed section of the population, represents an important target of determining the self-medication practices and the prevalence of irrational use of drugs. A study designed to evaluate the self-medication behavior among medical and nonmedical students from the northeast region of Romania in 2014, showed that the irrational antibiotic self-medication had a percentage of 34%. The results clearly defined the difference among the medical group where the antibiotic self-administration rate was 38% and the non-medical group where was obtained a rate of 9% antibiotic self-administration (7).

The importance of demographic and socio-economic particularities is proven also by a study (11) conducted in 2013 in Guatemala City where self-medication behavior of peo-
ple from general population was compared the in suburban pharmacies versus city center pharmacies. The rate of self-medication was 79% in the suburban pharmacies and 77% in the city center pharmacies. Another study (12) that assessed the impact of demographic features was conducted in 2014 in the rural areas of Sindh, a province of Pakistan, where the prevalence of antibiotic self-administration was 81.25%.

A study (13) conducted in Lithuania in 2014 reported an antibiotic self-medication rate of 31% in the general population stated the significance of the demographic features in the evolution of antibiotic self-behavior (age, gender, residence, level of education, parenthood).

**CONCLUSIONS**
This study reveals a medium prevalence of self-medication with antimicrobial drugs in the population from South-eastern Romania. Self-medication with antimicrobial drugs is a relatively common practice, but the prevalence is reduced compared with other studies from previous years or other populations, maybe because of the effect of national education programs regarding the risks of irrational self-medication with antimicrobial drugs. Educating the population about the consequences of irrational use of antibiotics is urgently needed.

**REFERENCES**