

# ANTIBIOTICS USE IN ADULT POPULATION, AS PERCEIVED BY FAMILY DOCTORS IN ROMANIA

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## ABSTRACT

*Introduction:* In recent years, the problem of overprescribed antibiotics has become one of the most serious public health issues at global level. Clear evidence shows direct relation between antibiotics consumption and the resistance developed by the microbial agents

*Objectives:* The aim of this study is to evaluate the frequency of antibiotics recommendations from other medical practitioners or pharmacists and reported self-medication, in the family doctor's office

*Methods:* We conducted a survey questionnaire on 184 family doctors from Romania that volunteered to gather information for one week on a daily basis. The questionnaire for adults had four questions, related to the frequency of antibiotics consumption based on the recommendation from emergency rooms or other doctors, self-medication, antibiotics recommended and delivered by pharmacies and personal recommendation of antibiotics

*Conclusion:* We conclude that the level of antibiotics recommendations for diseases, which usually do not benefit from this type of treatment, is high, with a large proportion of adult patients coming to the family doctor for reimbursement. The level of auto-medication with antibiotics, in adults, is also elevated, in most of the cases based on leftover medication.

*Keywords:* antibiotics, prescription, trend, family medicine

## Introduction

In recent years, the problem of overprescribed antibiotics has become one of the most serious public health issues at global level. Clear evidence shows direct relation between antibiotics consumption and the resistance developed by the microbial agents (1-3). Therefore, at international level, the UN committed to act against antimicrobial resistance through measures that should strengthen the regulation of antibiotics consumption, increase of awareness and knowledge and the promotion of best practices (4)

According to ECDC's summary on the

latest data on antibiotic consumption in the EU, published in November 2017 (5), Romania ranks fourth in the consumption of antibiotics for systemic use. It worth mentioning though, that for Romania and Cyprus (ranked second), data includes the hospital sector, while for all other countries it includes only the use in community, therefore, in real terms, the communitarian consumption is lower than the values described in the report. For the hospital sector, Romania did not offer any specific information.

In the Special Eurobarometer 445 report about Antimicrobial Resistance (6) published in 2016, Romania ranks second, with a proportion of 84% of the patients obtaining antibiotics

from a medical practitioner, the average in the EU28 being 93%. Comparing to the results from the 2013 survey (7) we see a 4% increase, one of the most important increases. This might be the results of the increased awareness, as 35% of the respondents from Romania would like information about resistance to antibiotics and 29% want information on the prescription of antibiotics (6). Therefore, in the ECDC report (5), overall antibiotics consumption is lower in 2016 compared to the previous years, and at the same level as it was in 2012.

The aim of this study is to evaluate the frequency of antibiotics recommendations from other medical practitioners or pharmacists and reported self-medication, in the family doctor's office.

## Material and methods

The study was conducted using a survey questionnaire that was administered to family doctors in Romania. The participants were volunteers, members of the National Society of Family Doctors. The questionnaire was emailed to all members. The ones that volunteered to participate added daily information for one week, during 18th – 22nd April 2016.

We collected basic demographical data, the background (urban or rural) and the county where they work. The questionnaire for adults had four questions, related to the frequency of antibiotics consumption based on the recommendation from emergency rooms or other doctors, self-medication, antibiotics recommended and delivered by pharmacies and personal recommendation of antibiotics.

We collected 184 responses from family doctors at national level, with a very good coverage. Approximately 61% of the respondents work in urban areas.

## Results

The first item of the questionnaire investigates the frequency of patients that present at the family doctor with prescriptions with antibiotics in unnecessary cases from the emergency rooms or other doctors.

In most of the cases, the reported frequency

is less than 1 per day (Figure 1). During the investigated week, no presentation with antibiotic prescribed by other doctors for unnecessary cases was reported by 17.4% of the respondents.

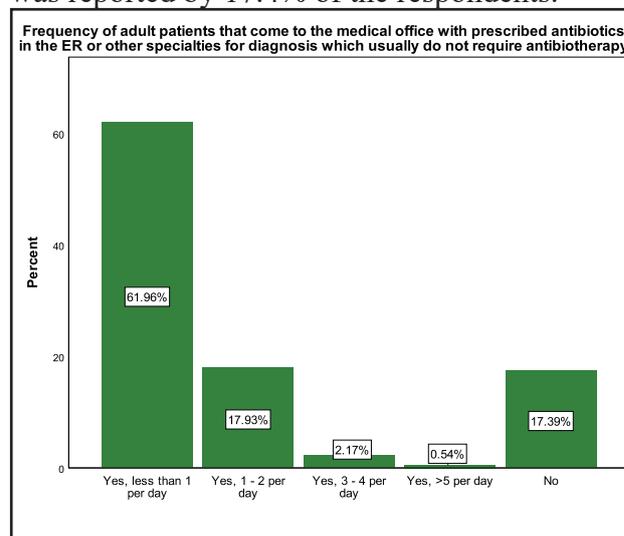


Figure 1 Frequency of adult patients that come to the medical office with prescribed antibiotics in the ER or other specialties for diagnosis which usually do not require antibiotherapy

The second item of the questionnaire investigates the frequency of patients that present at the family doctor's practice after they start self-medication with antibiotics (Figure 2). In more than 57% of the cases, the doctor's response was that this happens less than once per day. Almost one third of the respondents admit that they have this situation once or twice per day and only 3% say this did not happen during the time of the study.

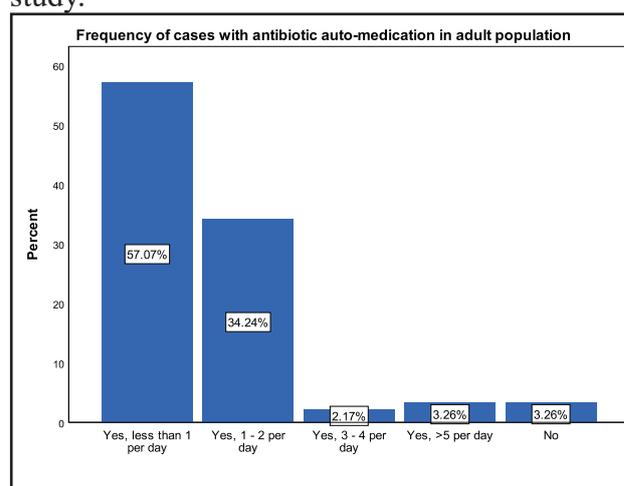


Figure 2 Frequency of cases with antibiotic auto-medication in adult population

At the item that evaluates the antibiotics recommended and delivered directly at pharmacy

level, 85% of the family practitioners sustain that during one week have patients that come to the medical office with antibiotics dispensed by the pharmacy without any medical recommendation (Figure 3). More than half say that this occurs almost on a daily basis, while almost 30% say this situation appears with at least one or two patients per day.

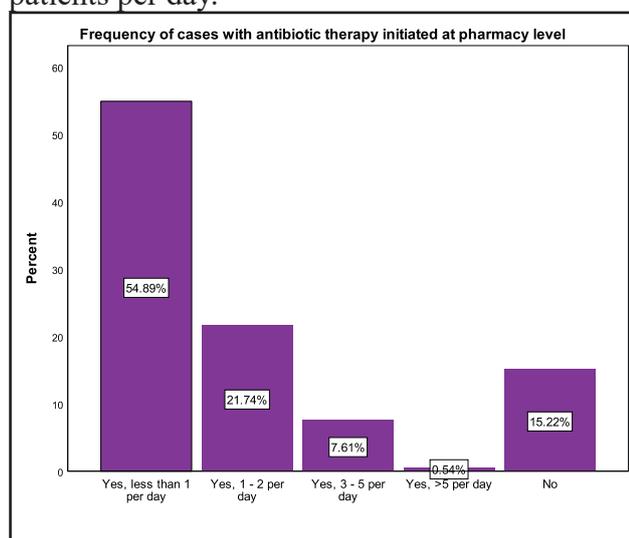


Figure 3 Frequency of cases with antibiotic therapy initiated at pharmacy level

When it comes to antibiotics prescribed following their own consultation (Figure 4), almost half of the respondents answered that they prescribed antibiotics less than once per day.

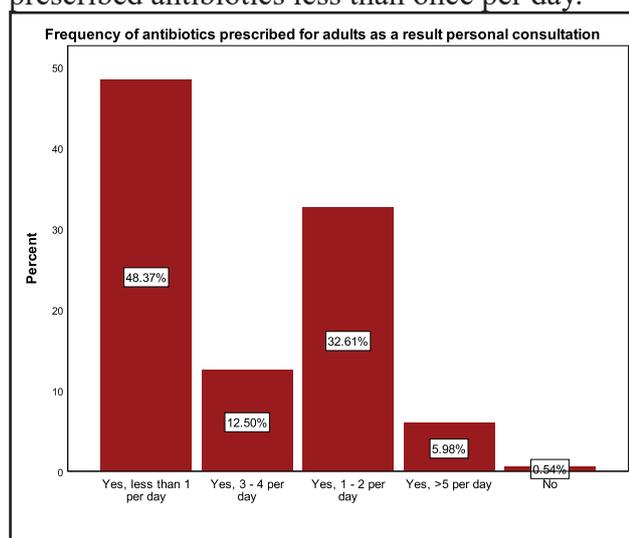


Figure 4 Frequency of antibiotics prescribed for adults as a result of personal consultation

Almost one third of the family doctors that participated in this study say that they prescribed antimicrobial therapy once or twice per day. Less than 1% didn't prescribe antibiotics during the

study.

## Discussions

One of the major aspect discussed in medical literature, related to antimicrobial therapy resistance is the overprescription of these drugs. (8, 9) We observed in our survey that most of family doctors have cases of patients that arrive at the medical office referred by other doctors with antibiotics, for diseases that usually do not require antimicrobial therapy (eg viral tonsillitis, acute respiratory infections of the upper tract, serous otitis media). Almost one fifth of the family doctors did not have any situation as described above during the survey period. So it is evident that there is a trend in overprescribing antimicrobial therapies. Most of these patients arrive at the family doctor's office because they want to have the treatment reimbursed. In most of the observed cases, the prescription was not reimbursed, thus, in the informatics system, these patients will appear as having been recommended antimicrobial therapies by family doctors, not by the doctors from other specialties or from the emergency departments.

Another major problem related to antibiotics consumption is the problem of self-medication. In this case, almost 97% of the family doctors that participated in the survey admit that they had patients that used antibiotics without any specialized recommendation. This is a major problem for the health system. The sources for antibiotics are the pharmacy (even though in Romania the legislation allows the selling of antimicrobial medication only when prescribed by a doctor) or, in some cases, leftover medication from previous treatments (10). Reasons for the patients to own leftover antibiotics is the deficient therapeutic education or they prefer to store antibiotics for later use (11). Most of the time, these patients do not appear on official reports because the consumption of antibiotics in this case is not accounted for. Also, because of ambiguous legal statements, antibiotics are in many cases initiated at pharmacy level, with a frequency higher than recommendations from other doctors and lower than the self-medication. When analyzing the prescription done by the family doctors, we notice the fact that over

99% of them prescribed antibiotics for adults during the study as result of personal evaluation of the patient.

When analyzing the level of prescription, recommendations and consumption of antibiotics according to the values observed in this study, we must take into consideration the seasonal variation of the diseases that might benefit or might mimic diseases that benefit from antimicrobial therapy. This period was a period with low activity.

## Conclusions

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We conclude that the level of antibiotics recommendations for diseases, which usually do not benefit from this type of treatment, is high, with a large proportion of adult patients coming to the family doctor for reimbursement.

The level of auto-medication with antibiotics, in adults, is also elevated, in most of the cases based on leftover medication. One type of intervention that might have a good impact on auto-medication is represented by media campaigns to prevent this type of behavior.

At pharmacy level, a more clear and strict legislation is needed in order to limit the access of the patients to antibiotic medication.

Training programs for the usage of antibiotics in primary care are essential for a better management of antibiotic prescriptions, accompanied with developed guidelines adapted to local characteristics of the bacterial infections.

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