

Knowledge and attitudes of patients for using antibiotics

Marijana Danevska^{1*}, Iskra Pechijareva Sadikarijo¹, Julijana Sekovska²,
Zorica Naumovska³

^{1*}Agency for drugs and medical devices, Blvd. Ss. Cyril and Methodius 54, 1000 Skopje, R.N. Macedonia

²Carso Pharm, St. 34 No 5 A Ilinden, 1000 Skopje, R.N. Macedonia

³Faculty of Pharmacy, Ss. Cyril and Methodius University, Mother Theresa 47, 1000 Skopje, R.N. Macedonia

Introduction

The discovery of antibiotics and their use in everyday clinical practice is certainly one of the utmost achievements in medical science in the 20th century. Increased resistance of many pathogens to currently available antibiotics is considered a major problem in public health due to the possibility in therapeutic failure. Excessive and irrational use of antibiotics is the main reason for bacterial resistance. Primarily over-prescribing, inadequate dosing and administration of antibiotics for non-bacterial infections are the main reasons associated to antibiotics resistance expansion (WHO, 2010). Despite all efforts put on promotion of rational antibiotic use strategies globally, the problem with resistance is deepening, so the need for establishment of a system for monitoring and relevant data provision for above mentioned challenges is constantly rising (CDCP, 2013).

The access to antibiotics enhanced in recent years due to improved supply and distribution chains of medicines as well as privatization of health care services. Obtained results by World Health Organization (WHO) estimates that over 50% of antibiotics globally are purchased directly in pharmacies or from over-the-counter informal vendors, emphasizing the role of pharmacists or other informal drug vendors as the first and probably only contact with health professionals, and health facilities. Monitoring the prescription of antibiotics is of crucial importance, due to more distinct bacterial resistance, the occurrence of adverse reactions and treatment costs. (Arnold and Straus, 2019)

This study provides an overview of patients' a knowledge attitudes and experience towards antibiotics utilization practices in the Republic of N. Macedonia.

Materials and methods

The cross-sectional study was conducted over a period of three months. Anonymous questionnaire based on Eurobarometer survey for patients was designed and the survey was conducted among the 300 patients (≥ 18 years) from several private primary health practices in Skopje voluntarily enrolled in the study (EC, 2010). The Patient Survey Questionnaire consists of 30 questions divided in three parts (I-demographic, II-knowledge and III- attitudes or experiences of the patients about use of antibiotics). The survey was enrolled in „face to face“ manner and the investigator from primary care actively redefines or clarifies the possible ambiguities for the patients. Obtained data were tabulated using Microsoft Excel® (Microsoft Corp. Redmond, WA, USA) and were computed and consequently evaluated using statistical software STATGRAPHICS Centurion XVI evaluation (StatPoint technologies Inc., USA).

Results and discussion

The average age of study group was (41 \pm 14) years, with 45% men and 55% females. Most of the population was with secondary education level (55%), and 37.7 % have finished faculty. Almost 30% of the participants were unemployed, and 92% have health care insurance. Practically all of the patients (97.3%) confirmed that were prescribed antibiotics sometimes in their life and they have experience with antibiotics, whereas 63% used antibiotics in the last 12 months. The obtained results confirmed that 75.3% obtained the antibiotic after the prescription by the doctor and 24.5% acquired it on their own initiative (8.3% without prescription, 6.3% in other way and 10% didn't remember the way how the antibiotic was obtained). Statistically significant difference was confirmed between the level of education and acquisition

of non-prescribed antibiotic (Pearson Chi-square: 5.92, $p < 0.05$), but the gender, health insurance status and labor status did not influence the attitude towards antibiotics without prescription. Nearly $\frac{1}{4}$ of the respondents claimed that they have used the antibiotics for common cold, 23% for sore throat, 18% for caught, 14% for fever and temperature, 11% for bronchitis, 8% for urinary infection, 4.3% for headache and the rest selected other as reason for antibiotics use. One of the most interesting finding was that 52% of the respondents claimed that sometime have used antibiotics for self-healing without consultation healthcare professional. More than 45% (46.7%) could not clarify the reason for self-healing with antibiotics, 46.3% selected convenience as the reason, 4% chose savings, and only 2% selected uncertainty to the doctor. Responders claimed that they select the biased on the information on the antibiotic type (32.3%), on indication (31.7%), on safety profile and adverse reactions (27%), on brand name (12%) and the antibiotics prize (10%). Results of the conducted survey have confirmed that the evaluated patients always read the patient information leaflet (PIL) (60.4%), sometimes read the PIL 30.3% and 9.3% never read it and no statistically significant difference was confirmed among the education level or labor status of the patients. 26% of the respondents have confirmed that they have changed the antibiotic without HCP consultation, and 20.3% have changed the antibiotic dose. Almost same percentage, 27.7% think that self-healing with antibiotics is acceptable, 11% thing that it is good decision whereas 61.3% define the self-healing with antibiotics as unacceptable. The overall results of this study confirmed that most respondents (86%) know when antibiotics use is indicated. Most of them know that antibiotics are effective for bacterial infections (58.7%), but they have insufficient knowledge about the effect of antibiotics for viral infection and 31.3% said that antibiotics could be used also for this condition. In addition, the majority of respondents said that antibiotics kill viruses and that antibiotics are effective for colds.

Furthermore, the connection between knowledge and attitudes suggests that the more appropriate their knowledge about the use of antibiotics, the less misunderstandings and misconceptions they will have about the effect of antibiotics. This indicates the need to educate patients about common (viral) colds, as well as the need for education to distinguish between viral and bacterial infections.

This research showed that patients the information for irrational antibiotics use get by doctor/pharmacist (49.7%), by some relative/friend (18.7), internet/social media (18%), and other media (12%). Based on this information 46.7% of the patients have changed their opinion for rational antibiotics use, 26% haven't changed their opinion, and the rest selected that they didn't know

if this information influence their opinion and attitude towards antibiotic use. The knowledge of the respondents has a positive correlation with their views on the use of antibiotics, indicating that there is a direct relationship between their level of knowledge and attitudes towards the promotion of public awareness.

Conclusion

Inadequate and excessive use of antibiotics in communities, primary care and hospitals can result from a complex interaction between several factors such as: doctors 'practice, attitudes, beliefs and patients' knowledge about antibiotic use, self-medication, and perception of patients regarding the patient-physician relationship, patient expectations, and their experiences with antibiotics. Therefore, controlling the use of antibiotics requires a multidisciplinary approach with professional and engaged health professionals, pharmacists, health authorities and consumers.

There is a need for a greater change in the relationship between patients and healthcare professionals. The promotion of rational use of antibiotics is still poorly integrated into the health system. One of the key elements for reduced and rational prescription of antibiotics is in fact the education of the patients and raising the awareness of the population about the harmfulness of the excessive use of these drugs. These measures have been shown to be quite effective, especially in combined intervention.

References

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