The Medicine Good Use and the Role of Pharmacists

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Abstract: Today’s in the world there is an exponential increase in the use of drugs and other products with health effects. This happens for a series of reasons starting from the economic availability, full or partial subsidizing of products from the national health systems, as well as from the social factors such as the aging of population. The trend is associated with a high possibility of drug misuse and abuse. This growing misuse/abuse of drugs is due to many factors that are generally the same in USA, in the European Community countries as well as in Albania. The study aims are been the presentation of the situation of the drug use and misuse in Albania and the role of the community pharmacists. The work it is completed based in personal observations and the experience of the author. The main result of this paper is the evidence of the general situation about the drug misuse in Albania. There are analyzed all the main factors encountered in literature and compared with data from the territory as well as with author’s personal experience. Misuse of medicines is evident in Albania as in other countries. The problems for such a misuse of the drugs are related to the lacks in precise recording of the drug consumption as well as to the low technology for data keeping and exchange. There is needed more cooperation between the health care professionals. At the end there are advanced two proposals: adapting, as soon as possible, of the electronic recording of all the medicines consumed, not just the prescribed drugs, and the creation of a personal data base for every patient.

Keywords: medicine, misuse, abuse, pharmacists, prescribed medicines, OTC, herbal products.

1. Introduction

In all the developed countries of the world there is an exponential increase in the use of drugs and other products with health effects. This is for a series of reasons, starting from the economic availability, full or partial subsidizing of products from the national health systems, but also the social factors such as the aging of population. In US in 2015 the total number of prescriptions presented in the pharmacies was 4,065,175,064 [1], more than 12.7 prescriptions pro capite. This number includes a high possibility of drug misuse and/or abuse [2]. A growing trend of drug use is observed in all countries of the world, regardless of income level, but it is more pronounced in richer countries [3]. The same factors are present in the European Community countries [4], too.

Even in Albania these factors are giving the already known effects on increasing consumption of medicine products with consequences on human health. Such are the documented cases of antibiotic [5-7] benzodiazepines [8], or antihistaminic [9] prescribing misuse/abuse.

An important factor with regard to the consumption of drugs is also the increasing availability of them. By Drug Bank [10] today in the world there are 8206 drugs, while according to the FDA [11] data there are in circulation about 300,000 OTC drugs, and this number is growing. This so high number of OTC drugs is because of the use of commercial names for products with the same active ingredient. This phenomenon leads to more and more increase of the number of harmful effects because of the lack of information and the confusion with names. In this context it is sufficient to mention risks threaten to users of a so ordinary drug as paracetamol, the daily dosage errors, or worse, the excess of the dose [12-13] as result of the commercial names [14]. These incidents, sometimes lethal and with high costs for the individual and the health care services, often results from unintentional overdoses due to the different commercial products contemporary using.

In recent years, advertising of prescription or/and OTC drugs is become a major form of marketing adapted by pharmaceutical companies. Many new advertised drugs may not be suitable for the patient’s specific diseases, so, may lead to improper use or excessive medication. On the other hand the pressure of marketing over the patients make them insistent to their doctors asking for prescribing of unnecessary and/or incompatible drugs with their diagnoses. The situation is further aggravated in the case of OTC where the patients are almost independent to decide their cure.

Another factor contributing to the misuse of drugs is that of different medicines or supplements with natural origin which are gaining more and more popularity [15]. These treatments are not without negative effects. The growing consumption of these products is stimulated by the mindset that they are natural, so, not harmful. This mindset extends not only to consumers or patients but also to the medical
staff, as doctors and pharmacists. On the other hand this group of products presents legislation and control problems [16], too.

Low level of health literacy is another important problem which is often not properly esteemed from the health care professionals [17-19]. Many consumers of health products may not be able to read, understand and act as it is recommended in the instructions on the prescription drug labels and in the information leaflets [20], leading to the incorrect and unsafe use of medicines. Adults with low health literacy are less likely to adhere to the provided treatment and are at high risk for hospitalization.

Children represent a particularly exposed population of patients from the misuse of medication [21]. The misuse of drugs among children is strongly associated with several causes like prescription of unnecessary medications, the education and literacy level of their parents, missing of doses or failing to have them timely [22]. This could have a very significant effect in proper treatment of the disease as well as in the state of the child's illness.

Community pharmacists [23] are exceptionally positioned to provide a sustainable solution to the problem of the drugs misuse. They are the most easily contactable healthcare professionals from the patients/customers and have the opportunity to improve a number of important factors/problems. Through their work they can increase communication between doctors and patients and improve the selection of medicines for use, resulting in better outcomes for the users [24]. They also may help to reduce the costs of health care through therapy management and monitoring of the drug use, patient counseling, and implementing of disease prevention programs.

In Albania the increased health care, the improved economic opportunity as well as a tendency towards population aging causes that a growing number of people become big users of drugs or products with effects on health. These products can be obtained through a prescription as well as through counseling with pharmacists or chosen by patient/customer [15-16, 25]. It is an indisputable fact that after a medical examination patients leave provided with prescriptions for various products with pharmaceutical properties [5, 25].

Till the moment that is the doctor or the pharmacist, in those cases permitted by law, to authorize the use of drugs the situation is under control in terms of drug dispensing. But the problems become more acute whenever the patients themselves determine their cure or the use of other medicines without consulting their doctor [26-27] or when in violation of the law of the drug administration the pharmacists dispense prescribed drugs without prescriptions [6-7].

When used correctly, the drugs contribute to improve or maintain the health and for a better and longer life. But is low the level of information to the patients about the medicines they use. Very often they are not aware of the risks, contraindications, and adverse effects. Misuse of drugs can interfere with the desired treatment and cause harmful reactions with risks for patients’ lives and significant costs for the healthcare service [28].

Regarding the use of technology from the health system, actually in Albania there are in implementation two innovations. The first one is the beginning of the process of electronic prescribing [29] and the second is a free health check-up of entire the Albanian population aged 40-65 years old [30]. These initiatives are believed to change thoroughly the way of working of the health professionals making big possibilities for a better use of medicines and especially for their teaming.

2. Factors Influencing the Misuse of Medications

2.1. The role of health Professionals

The misuse of drugs can occur for errors of health professionals, both the prescriber and the pharmacist, but also because of patient’s errors. Errors of health professionals are important and they range from a lack of knowledge about the basic principles of drug management and poor communication with patients, in the operational aspects of pharmacy practice [31], till at the professional barriers. Different studies shows that a great number of preventable harmful effects occur every year for the above reasons as drug mix, unintentional overdoses, as well as medical errors [32-33].

When a patient starts a therapy the most important information about the drug use concerns with: 1) The drug name, 2) The goal of the treatment, 3) Duration of the treatment 4) The daily dose as well as its division into meals, 5) The moment of drug administration with respect to the nutrition, 6) Information on the potential adverse effects and what to do if they occur. If patients do not have all of this information, they cannot take properly their medications, leading to medication errors, unnecessary hospitalization and, what is the most important, resulting in not expected health outcomes.

The misuse of drugs can occur through several ways. Where the most common are: 1) Taking the wrong dose, 2) Taking of the dose at the wrong time, 3) Forgetting to take one dose, 4) Interruption of drug treatment before the end of the cure. Another factor that leads to significant misuse of health products is the fact that many patients, often, do not know to ask for information about the medications they are using. The reason it is called low health literacy.

The most visible results of not suitable prescribed drug use from the patients may be: the further
advancing of disease due to not appropriate therapeutic drug level in the body, complications of the disease as a result of its duration and/or beginning/increase of the resistance of infective agents [24], reduction of functional capabilities of the patient’s body as result of the aforementioned problems and, consequently, a lower quality of life, and even, in some cases, the death of the patient.

In drugs misuse can lead the previous personal experience of the patient regarding treatment, too. In those cases when the patient had had undesirable effects from the drug treatment, he can not comply with the prescribed treatment.

An important factor in drug misuse/abuse is having of prescription drugs without prescription [6-8], too.

2.2. Increasing of the Number of Drugs in Use

Currently in the world markets are commercialized a big number of prescription drugs (8206 drugs) and an extraordinary number of OTC (more than 300,000 drugs) [10-11]. Increasing of the number of available drugs is one of the factors that can contribute to the drug misuse raise. This can occur in two ways: by increasing the consumption of drugs, and by the potential increasing of the risk of drug inappropriate use.

An important element in increasing the use of drugs and consequently increase of their potential misuse it is also the escalation of the marketing pressure practiced from pharmaceutical companies to promote not only the OTC but also the prescribed drugs. Extremely positive claims of these advertisements often results in patients’ clinically unjustified requests for drugs. This can lead to the inappropriate or excessive use of the medication, as many advertised medicaments may not be those needed for the patient's specific condition or disease.

2.3. Misuse of Drugs

The misuse of drugs happens in several forms. First, it is the overmedication which can lead to various complications and even death. The aging of population has created a strong demand for pharmaceutical treatments in order to enhance the quality of life and extending it. Undermedication is another form which consists in the use of the right drug, but in inappropriate doses, below the therapeutic level, or the cure termination before the time. The unmanaged polypharmacy [34] is another important form leading to unexpected effects. These effects may extend from the inhibition of the drug expected effects caused by their antagonistic actions to the multiplication of the drug effects by their synergic action. These harmful effects can lead to the death of patient. It must be clear that for the patient can be lethal not just the prescribing drugs but also the OTC, combined between them, with prescription drugs, and/or with herbal products or supplements.

2.4. Expansion of the OTC Market

Currently, in our pharmacies, we have a wide range of OTC products with their specific names, the generic drugs, but the majority of them use brand or commercial names.

A big number of products based on paracetamol (acetaminophen) there are currently in use. Their names reflect different manufacturers and various pharmaceutical forms [12, 14]. This variety of labels can certainly become a significant confounding factor leading to the drug misuse and in serious consequences for the patient. Paracetamol overdose and toxicity is very possible if more than one paracetamol based product is used at the same time by an uninformed patient. In fact, patients may take these products without realizing that all of them contain paracetamol, as the highlighted name is that done by the manufacturer but not the active ingredient name [12].

A recent study shows that liver toxicity caused by paracetamol is a growing problem and now accounts for nearly 50% of cases of acute liver failure in the United States, mainly due to the unintentional overdose [35].

On the other hand paracetamol is also used in combinations with other drugs such as caffeine, NSAIDS, and opioids [36]. This frequency of combinations may lead to the simultaneous unwittingly use of two or more products containing paracetamol and resulting in hospitalizations [37].

The drug name and the dosage information over the labels of the OTC products can be confusing for patients and lead to misuse [12]. Incomplete or hidden information about the side effects can mislead the patients [14]. Unclear and not easily readable data over the labels of medicinal products can be another factor of confusion for patients [13].

Besides the use of OTC medicines, the use of different supplements and herbal products from patients/consumers poses a special concern. Furthermore, there is a generalized opinion that these products are natural, so do not harm [16]. The situation becomes even more worrying when users take these products together with prescription or not prescription drugs, and often without the knowledge of the physician [26-27]. The different interactions can lead to multiplying or annulment of medical treatments [38]. Certainly the appearance of adverse effects belongs to the number of drugs taken at the same time but it is not the only determinant. There are sufficient just two incompatible drugs to cause severe effects to the patient [39].

Currently, in developed countries, is observed the phenomenon of the growth of the OTC market.
Global market in 2016 is estimated to be around 133 billion dollars and in 2021 is expected to reach 220 billion dollars with an annual growth over the 10% [40]. This, in fact, increasingly shifts the responsibility of choosing the treatment from the doctor to the patient/consumer. In this case it is evident the increasing role of the pharmacist as the representative of the medical personnel in contact with patients readily accessible at the time of OTC treatment choice. This role, in Albania, is clear since the distribution of medicines, including the OTC, is exclusively done by the pharmacies and not in supermarkets or elsewhere as happens in some other countries [23, 41]. Expansion of the OTC market is happening not just by solely increase of volume of commercialization but also from the transformation of prescribed drugs in OTC. This is giving consumers more and more responsibility in clinical decisions and product selection. But in a study in Albania to similar products, supplements and herbal products, sold in pharmacies, it is shown that in 94% of cases are health experts, doctor or pharmacist, to suggest the products [16].

2.5. Increasing the Use of Medical Products of Natural Origin

The use of dietary supplements and alternative medicines continues to gain more and more popularity to the consumers and health professionals [15-16]. It is to be noted that in relation of these products there are lacks of legislation and of legislative implementation from the health personnel [16]. On the other hand the data from the literature shows numerous undesirable effects from the use of these products [42-43].

2.6. Food – Medicine Interactions

Interaction of drugs with food constitutes another important factor of the medicines misuse [44]. These interactions can cause the increasing or the reduction of medicine therapeutic action as well as can change the normal metabolism of food components, with adverse consequences [45-46]. MAO inhibitors, for example, known to change the metabolism of food rich in tyramine, may cause hypertension [47]. At the other site some meds, as tetracycline [48] and ciprofloxacin [49], make complexes with calcium and caseins in dairy products. So the interaction of medicines with foods is two way; food-drug and drug-food. Today’s the interactions between medicines and foods have become more problematic than ever because of the increased availability of products as well as the globalization of the world market food products. It is normal to find in our tables products from plants or fruits which are not characteristic of our geographic area of residence and for which we have little knowledge. At the other side the food industry has made available a wide range of finished products, as juices, for consumption. In this group we would mention one of the most known products for a big number of important interactions with drugs, the grapefruit juice [50]. This product is known to interact with a large number of drug classes as with antihypertensives, the antihistamines, the immunosuppressants, the anti cholesterol drugs, antidepressants, etc [51].

2.7. Low Health Literacy

Health care professionals can assume that their patients can read, understand and act as required the instructions on the medicine products labels and leaflets [17-18]. But there is a problem with regard to the information sheet readability. They are characterized by small letters, uncertainties and complicated technical terminology [20].

A study realized in the US show that 48 million Americans have a health literacy level not adequate and therefore are not able to understand / interpret labels and leaflets as well as the medical advice [52].

In another study done in Kosovo turns out that more than 60% of respondents present inadequate health literacy. Age is an important factor; the elderly have lower health literacy level. It turns out that a strong determinant of health literacy is the education, higher education results in higher health literacy [18].

So, low health literacy is another factor that can lead patients in misuse of their medication. With the age advancing the low health literacy is evidenced especially by not adhering to treatment regimen or with more treatment errors. The patients are at high risk for hospitalization. When sick, people with low health literacy, stay longer in hospital [17, 53-54].

Low health literacy also leads to other important effects. Among which we can mention the unsatisfactory health of the patient, unnecessary expenses for medications, increase / decrease of the number of diagnostic tests or appointments with the health professionals, increasing of the patients’ discontent towards drugs, increasing patients’ dissatisfaction regarding treatment, and even GP professional dissatisfaction.

2.8. Children’s Exposure to Medication Misuse

Children are particularly in danger to the misuse of medications. In a study is showed that parents, in most cases, misuse the antibiotics. Indeed, this situation is related to the parent’s health literacy level [19]. Among the most frequent parent’s mistakes is the wrong interpretation/use of the measurement units and of the equipment for liquid medication administering [55-56].
On the other hand, many medications are not for use in children, especially in the younger age, but it seems that these limitations are often not respected [57-58].

2.9. Use of Self Testing Kits

Another factor, which may lead to the possibility of drugs misuse is the use of home diagnostic tests [59-60]. Safe use of medicines requires accurate diagnosis of the patient’s condition that is optimally done by a doctor or other health care professionals in collaboration with the patient. A wrong self-diagnosis can lead to even the death.

Diagnostic kits can be used safely to control the parameters. In this case the use of kits is positive and makes possible to keep under control, with a much lower cost, the disease problems. The measurement of reference parameters as well as the correction of the treatment within a range strictly defined by the health professional it is a valuable option. In this respect the role of the pharmacist as a consultant it is very important [61].

3. The Role of Pharmacists in Albania for the Good Use of Medicines

Monitoring and evaluation of the quality of drug use is one of the most difficult and important challenges of the healthcare service. This problem becomes more evidenced if we consider the complexity of medication therapy and the risks faced to the patients in taking medications. Pharmacists are increasingly seen as the most important professionals of health care that can directly interact with patients and doctors. They have the trust and the respect of patients. They are in a position that makes possible to know exactly what medications are being used, and, therefore, can identify the problems.

Pharmacists have the necessary knowledge to evaluate patient’s drug regimens in relation of their disease status. They can suggest to the doctors additional or alternative medicines to the patient’s benefit. Pharmacists are in the right position to eliminate potential duplications of therapies that may occur from taking more than one drug with the same active ingredient, to keep under control the drug interactions, and evaluate patient’s compliance to regimens. Pharmacists provide for the patients/consumers valuable information about prescription and OTC drugs as well as to herbal medicines. The last two, OTC and herbal medicines, can be obtained without a prescription but they are not, necessarily, safer than the firsts.

3.1. The Work of Pharmacists as Members of the Health Team

The first consideration about the pharmacists’ work is that they are part of a team, real or virtual it doesn’t matter. Effective therapy management requires cooperation from all actors of the health care system. Doctors, pharmacists, nurses, and family must work together to ensure that the patient understand his/her health conditions, risks versus benefits of suggested treatment/s, the results of their diagnostic tests, treatment goal/s, and the need to take an active role in managing their condition. Creating and maintaining a strong partnership between healthcare actors and patients is important to reduce the risk of medication errors and misuse of medicines.

Good partnership pharmacist/patient is, indeed, an important factor in the good use of drugs. Pharmacists are in the right position to create a work environment that allows patients to ask questions and take an active role in the process of health care. Pharmacists explain to the patients why they are taking medication and how to take them.

An important limiting element of the pharmacists’ work is the limited time that they can dedicate to patients. Pharmacists play a key role in educating the patient for a constructive cooperation with the doctors, and in the management of therapy. But to do this, pharmacists should shift their focus of work from the dispensing of medications to the patients’ services. The expertise of pharmacists gives much help to maximize the drug benefits, reduce harmful effects, and increase the adherence to the medication regimen.

Pharmacists participate in the management of the drug use of the patients with a confirmed diagnosis. Misuse of drugs represents a high cost for society and patient. This is expressed by the cost of direct medical supplies, the loss of working days, and the cost of visits to doctors and hospital admissions. Indeed, the work of pharmacists is a considerable aid in the elimination of unnecessary costs and to the good drug use.

3.2. Management of Medication in Use by the Pharmacists

The management of medication in use is something many pharmacists already do. The essence of this work is to achieve the best therapeutic outcomes through improved medication use and reduce the risk of harmful effects. So, the pharmacists make it possible that the patients receive the proper medication, in the proper strength, and in the right dose, at the right combination with other medications, and timely. The work of the pharmacists certainly leads to lower costs of health system and limits the drug misuse.

Community pharmacists are an integral part of their respective territories and they have the expertise, confidence and relationships with patients
and physicians to ensure an appropriate and safe therapy. They generally have repeatable customers. They offer other important services to the community as blood pressure measuring, glycemia tests, etc. Pharmacists also provide a number of professional services such as drug counseling and the help in the selection of OTC products, medical literature, health information, and tips for herbal products. In many cases, they coordinate the care with other actors of health service.

Pharmacists in the community pharmacy practice are also exceptionally positioned to help patients in choosing the tests of self-control, thus facilitating the use of kits and evaluating the reliability of the results. For example, the best way to prevent complications of diabetes is self-monitoring of blood glucose levels, achieved by the patient at home using a glucose monitoring tester.

The major activities of the community pharmacists at their work day are the interaction with the patients, identifying of potential drug interactions, and counseling over the OTC and herbal products use.

In their work activity the pharmacists are in the first line of analyzing the medication therapy currently in use from a patient. They also control the safety-related issues, as well as the inconsistency and the therapy duplications. Depending on the results found they propose/make the necessary changes in order to ensure consistent levels of service and positive results of treatment. Moreover, patients’ information provided by their pharmacist can help in the treatment success.

4. Role of Pharmacists in Supporting the Continuation of the Health Care through the Technology Improvement and Use

A significant contributor in the continuity of care is the control of compliance with the treatment. The treatment compliance, the process of comparing the drugs in use by the patient with those described by the doctor, begins with an accurate list of medications. When a patient is admitted to hospital or treated in an ambulatory environment it is imperative that the list must be as accurate as possible. The drugs in use from the patient must be known to the medical staff in order to avoid possible errors with medications and to have the right decisions about patient treatment. The community pharmacist is the main source for this information to the date. Community pharmacist can communicate to health professionals the patient’s drugs in use checking the history of treatments. Pharmacies and pharmacists can also give their contribution to ensure the continuity of pharmaceutical care when patients move from one community to another.

If there is not a partnership between the pharmacists with patients and the other professionals of health care, the result will be the increase of the possibility for incorrect dosing, drug interactions, treatment failures, and unnecessary use of drugs.

5. Conclusions and Proposals

Misuse of drugs is a growing problem worldwide as well as in Albania, partly due to the increased use of prescription and OTC drugs from an aging population. Increasing of the available drugs, advertising pressure to patient/consumer, growing of the popularity of alternative medicine, and low health literacy among consumers of healthcare products are other contributing factors.

The healthcare system faces many challenges to ensure the safe use of medicines, but there are lacks of precise recording of medicine consumption and the low technology in use.

Cooperation between all the actors of the health care also needs to be improved to ensure optimal education in the use and monitoring of medicines.

Evidence suggests that community pharmacists are an important part of the health care team and a source not optimally used to protect patients from inappropriate use of medication. Community pharmacists need to enhance the communication between patients and other healthcare actors for optimizing the use of medicines in order to improve patients’ outcomes.

This cooperation will help to provide an advanced level of care, increase the health literacy of the patient about the proper use of drugs, the adherence to medication therapy, and to improve the detection of adverse drug effects.

Community pharmacists can contribute in the management of patients with chronic diseases and significantly improve the outcomes. The support and commitment of the community pharmacist for the safe use of drugs and the early detection and, as well as, the management of drugs adverse effects, is an important step towards improving patient’s health in general.

From the working activity of the pharmacists will be taken several results as: improvement of patient satisfaction; increase of the effectiveness of expenditures; reduction in the number of emergency visits, hospital admissions, and visits to the doctor; improvement of the patients’ quality of life; reduction of working days lost from the patients; increase of self-confidence of pharmacists to their work, and increase of technology use.

In the optics of technology use we have two proposals. First, adapting, as rapidly as possible, of the electronic data recording not just for the prescribing drugs but for all the medical products. This technology will create opportunities for every actor of the healthcare service to consult the
information and to control the patients’ drug therapy adherence, as well as to identify potential problems. It can improve the accuracy of prescriptions. Thanks to the technology application the pharmacists will have more time for the patients. And secondly it would be important the creation of an individual patient database, beginning with the national check-up data, that may allow the curing physician to know the entire patient’s treatments history. We believe that the actual moment it is a god one and everything is completely doable. This data can be the beginning of a national health data base with connection from all health services around the country, combining the medicine consumption with data from the tests, and records from the doctors. So, it will be possible to have a complete knowledge in real-time about the treatments and the health condition of the patient.

6. References

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