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A Study on the Quality of Outpatient Prescription of Psychopharmaceuticals in the City of Zagreb 2006–2009

Krešimir Živković[1], Ana Zelić-Kerep[2], Danijela Štimac[3,4], Sanja Ožić[3] and Nikica Živković[5]

[1] University of Zagreb, University Hospital »Sveti Duh«, Department of Gynaecology and Obstetrics, Zagreb, Croatia
[2] Kutina health Center, General Practice Office, Kutina, Croatia
[3] »Dr. Andrija Štampar« Institute of Public Health, Zagreb, Croatia
[4] University of Zagreb, School of Medicine, Department of Social Medicine and Organization of Health care, Zagreb, Croatia
[5] Šibenik-Knin County General Hospital, Department of Gynaecology and Obstetrics, Šibenik, Croatia

A B S T R A C T

The lack of Croatian studies which could determine the justifiability of excessive psychopharmaceutical utilization was an encouragement to conduct this research. Furthermore, regarding the conduction of this study, it would be possible to determine whether the trend of drug utilization has increased, decreased or perhaps stabilized. The data on the outpatient utilization of psycholeptics and psychoanaleptics were collected from all Zagreb pharmacies, 2006–2009. Based on the collected data for all N05 and N06 groups of drugs, the defined daily doses (DDD) and DDD per thousand inhabitants per day (DDD/TID) have been calculated using the Anatomical-Therapeutic-Chemical classification (ATC) for 2006, 2007, 2008 and 2009. To indicate the quality of drug prescription the Drug Utilization 90% (DU 90%) method was used. Moreover, in order to determine a more precise quality of individual drug group prescriptions, the indicators have been calculated by determining the proportion of the total utilization of individual therapeutic and pharmacological therapeutic subgroups in DDD/TID a day. The utilization of anxiolytics (N05B) accounts for most of the psycholeptic utilization in the City of Zagreb throughout the entire study period. In the study period, the utilization of antidepressants has slightly increased, by 10.5%, taking the first and the last years of the period into account. In 2006, 5 benzodiazepines and the hypnotic zolpidem, as well as 5 selective serotonin reuptake inhibitors (SSRIs) and 1 third generation antipsychotic (olanzapin) were found in the DU 90% segment. In 2009, the DU 90% segment also comprised 5 benzodiazepines and the hypnotic zolpidem, as well as 6 SSRIs and 1 third generation antipsychotic (olanzapin). In the City of Zagreb, a general insight into the quality of psychopharmaceutical prescriptions indicates stability in comparison to earlier studies. The ratio index of the first generation antipsychotic utilization, compared to the third generation antipsychotics, shows an increase in the quality of prescription. Also, the ratio index of total tricyclic antidepressants (TCA) and SSRI utilization indicates improvement in quality of prescription. The ratio index of the entire outpatient utilization of anxiolytics and antidepressants expressed in DDD/TID unfortunately shows a very mild increase of prescription quality. Benzodiazepines accounted for more than 50% of the outpatient utilization of psychopharmaceuticals throughout the study period, which proves the need for precise guidelines as the most significant means of drug rationalization and utilization. It is necessary to identify priorities and problems in order to solve them successfully, by monitoring drug utilization and prescription on a national level. Results demonstrate that within the primary health care system, there is a need for constant education on rational prescription of this drug group.

***Key words**: psychotropic drugs, pharmaceutical epidemiology, drug utilization, public health, Croatia, Zagreb, ATC/DDD methodology*

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Introduction

Zagreb accounts for the 18% of Croatian population and 43% of Croatian health resources, so that the city accurately represents Croatian trends, with the quality of drug prescription most likely being the same or smaller[1,2]. Nowadays, drug utilization is the main focus of numerous political, economical and medical debates in a large number of countries. Even in the most developed countries, increase in drug utilization is virtually impossible to determine by estimating an increase in the gross domestic product (GDP). Insight into drug utilization, as an economical and primarily a public health issue, can be acquired only within the context of the overall health state of the respective population. A reform of the drug prescription system is a part of an overall health care reform that is currently being conducted in the Republic of Croatia[3]. Outpatient utilization and the utilization of psycho pharmaceuticals are further significant elements of drug utilization within a certain society. As this drug group affects the nervous system, the basis of the aforementioned reform should be the establishment of uniform national guidelines for psychopharmaceutical prescription. According to the Intercontinental Marketing Service (IMS) data, the leading group of drugs consumed in the world are cardio-vascular drugs, followed by central nervous system drugs (CNS), with a constant annual increase of 11%[4]. The ageing of the population, the emergence of new drugs in the market as well as the impact of pharmaceutical industry marketing are just some of the reasons for a continuous increase in drug utilization[5,6]. A similar pattern has been recorded in Croatia, with the predominance of cardio-vascular drug utilization, followed by the CNS drug utilization[7,8]. The issue of psychopharmaceutical utilization has been detected even in the most developed countries, such as the USA[9]. The lack of Croatian studies determining possible justifications for such excessive psychopharmaceutical utilization has encouraged us to carry out this research. So far, only one study has demonstrated improvement in the quality of psycho pharmaceutical utilization, but with an excessive utilization of benzodiazepines, thus indicating need for rationalization[3]. Also, with regards to the aforementioned study, it is possible to determine whether the utilization trend has increased, decreased or stagnated.

Research Objectives

Research objectives were as follows:

1) to determine the real outpatient utilization of psychopharmaceuticals in the City of Zagreb, the capital of Croatia, using the Anatomical-Therapeutic-Chemical drug classification (ATC) and the defined daily doses unit (DDD)[10–12],

2) to determine the quality of outpatient psychopharmaceutical prescription during the study period by using indexes calculated from the ratio of certain subgroups of the N group and by means of the Drug Utilization 90% (DU 90%) methodology[13], and

3) to propose appropriate interventions in the City of Zagreb and perhaps in the whole of Croatia on the basis of results so achieved.

Methods

Data on the outpatient utilization of psycholeptics and psychoanaleptics (ATC group N05 and N06) in the City of Zagreb, were collected between 2006 and 2009. They were acquired from Zagreb's pharmacies that had recorded the data based on individual reedmed prescriptions, which are sent routinely in an electronical form to »Dr. Andrija Štampar« Institute of Public Health. All the drugs have been classified according to the ATC system. The data acquired have been used to calculate the DDD and the DDD per thousand inhabitants per day (DDD/TID), by using the indexes of: 2006, 2007, 2008 and 2009[14–17]. DDD unit is defined as the assumed average maintenance dose per day for a drug or drug group when used for its main indication in adults. ATC/DDD methodology is recognized formally as an international standard system for drug utilization studies by WHO Collaborating Centre for Drug Statistics Methodology. The DDD/TID calculations were based on the census of 2001, according to which the population of Zagreb was 770 588. Prescription data presented in DDDs per 1000 inhabitants per day provide an estimate of the proportion of the study population treated daily with a particular drug or group of drugs, particularly useful for international comparisons of drug utilization. The DU 90% method was used to determine the quality, or in other words, adherence of psycho pharmaceutical prescription to current guidelines[13,18]. The DU90% method adds to qualitative aspects of the ATC – DDD methodology, also confirmed and recognized by WHO.

Also, in order to determine, in a more detailed manner, the prescription quality of certain drug groups, indicators have been calculated using the ratio of the overall utilization of certain therapeutic and pharmacotherapeutic subgroups in DDD/TID. The focus was on the ratio of anxiolytics and antidepressants (groups N05B and N06A) to determine the correlation of their utilization and the tendency of their individual prescriptions, which additionally depicts the overall quality of drug prescription. The indicator has been obtained from the ratio of the general N05B and N06A group utilization expressed in DDD/TID. Furthermore, the same process was used to compare tricyclic antidepressants (TCA) to selective serotonin reuptake inhibitors (SSRI) by calculating the ratio of total utilization of these pharmacotherapeutic subgroups in DDD/TID, in order to establish the pattern of antidepressant subgroups prescription and the degree to which it adheres to the latest therapeutic possibilities, which once again indicates the quality and effectiveness of recommendation monitoring. The indicator was, as previously, calculated by using the ratio of the total utilization in DDD/TID regarding both first and third generations of antipsychotics. A unique indicator was calculated for each year of the study period from 2006 until 2009, in addition to monitoring the indicators' alterations in time.

TABLE 1
OUTPATIENT UTILIZATION OF PSYCHOLEPTICS (N05) AND PSYCHOANALEPTICS (N06) IN THE CITY OF ZAGREB, FROM 2006 TO 2009, EXPRESSED IN THE DDD/TID UNIT

ATC code	2006	2007	2008	2009
N05A	8.26	8.70	8.78	8.6
N05B	53.44	54.42	57.44	52.16
N05C	12.82	14.41	15.78	15.34
N05	74.52	77.53	82.00	76.10
N06(N06A)	18.65	20.24	22.06	20.82
Total N05, N06	93.17	97.77	104.06	96.92

Legend: ATC – Anatomical-Therapeutic-Chemical classification, N05A – Antipsychotics, N05B – Anxiolytics, N05C – Hypnotics and sedatives, N06A – Antidepressants

Results

According to the ATC classification, psychopharmaceuticals are divided into two main groups: psycholeptics (N05) which include antipsychotics (N05A), anxiolytics (N05B) and hypnotics (N05C); and psychoanaleptics (N06), including antidepressants (N06A). The remaining N06 subgroups have not been taken into account due to their minor share in utilization.

Table 1 demonstrates the outpatient utilization of psycholeptics and psychoanaleptics. Between 2006 and 2009, the total utilization had a growing tendency, reaching its peak in year 2008, after which it is slightly decreased in the last year of this period. The anxiolytic (N05B) utilization accounts for most of the psycholeptic utilization in the City of Zagreb throughout the entire study period. The utilization of antidepressants (N06A) accounts for almost all psychoanaleptic utilization, not less than 97%, so that the aforementioned drug group was the only one considered. There was a slight increase, by 10.5%, in the utilization of antidepressants within the study period, including the years 2006 and 2009. The antidepressant utilization reached its peak in 2008, having increased by 9% since 2007 and 15.5% since 2006. Figure 1 demonstrates the quality indicators of outpatient prescription of anxiolytics and antidepressants. The quality indicators have been derived from the ratio of the entire anxiolytic and antidepressant utilization expressed in DDD/TID for each year of the study period. The index clearly demonstrates that the utilization of anxiolytics is 2 to 3 times larger than antidepressant utilization. Figure 1 graphically depicts the decrease in the index value, which indicates an increase in the share of the antidepressant utilization. Figure 2 demonstrates the prescription quality indicators of the outpatient utilization of tricyclic antidepressants and selective serotonin reuptake inhibitors. The quality indicators have been derived from the ratio of the total TCA and SSRI utilization in DDD/TID for each year of the study period. The index reveals that the TCA utilization is 10 times lower than the SSRI utilization. Furthermore, Figure 2 graphically depicts decrease in the index value, which indicates increase in the share of the SSRI utilization. Figure 3 depicts the prescription quality indicators of the outpatient utilization of the first and third generations of antipsychotics. The quality indicators have been derived from

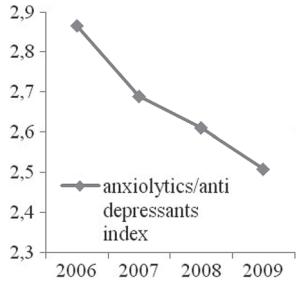

Fig. 1. Quality trend of the outpatient anxiolytic and antidepressant prescription in the City of Zagreb 2006–2009, expressed in the DDD/TID ratio of the total anxiolytic anantidepressant utilization.

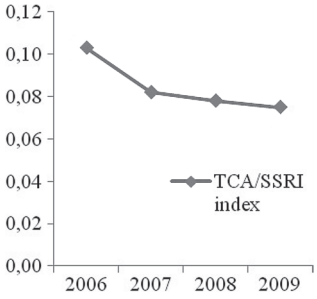

Fig. 2. Quality trend of the outpatient prescription of tricyclic antidepressants (TCA) and selective serotonin reuptake inhibitors (SSRI) in the City of Zagreb 2006–2009, expressed in the DDD/TID ratio of the total TCA and SSRI utilization.

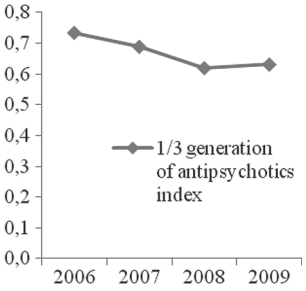

Fig. 3. Quality trend of the outpatient prescription of the first and third generation antipsychotics in the City of Zagreb 2006–2009, expressed in the DDD/TID ratio of the total utilization of the first and third generation antipsychotics.

the ratio of the total utilization of the first and third generations of anti-psychotics in DDD/TID for each year of the study period. The index demonstrates the utilization of the first generation antipsychotic being larger than the utilization of the third generation antipsychotics. Figure 3 also graphically depicts the decrease in the index value, which indicates an increase in the share of the third generation antipsychotic utilization. In 2006, the DU 90% segment included 5 benzodiazepines and the hypnotic zolpidem, 5 SSRIs and a third generation antipsychotic (olanzapine). Furthermore, in 2009, the DU 90% segment also included 5 benzodiazepines and the hypnotic zolpidem, 6 SSRIs and a third generation antipsychotic (olanzapine).

Benzodiazepines account for the most of outpatient psychopharmaceutical utilization, their utilization reaching its peak in 2008, after which it was reduced to its previous state in 2009. The diazepam utilization increased during the study period and reached its peak in 2008, so it is currently leading at the market. Zolpidem's increase is continuous, whereas the utilization of alprazolam is stable and that of oxazepam has slightly decreased (Figure 4). Compared to antidepressants, anxiolytics demonstrate twice the rate of utilization expressed in DDD/TID, as shown in Figure 5. The SSRI utilization is 8 to 9 times larger than the TCA utilization, as shown in Figure 6. Out of all SSRI antidepressants, sertraline has the largest utilization, which continuously increased and reached its peak in 2008. The utilization of paroxetine directly follows that of sertraline. It was relatively constant until 2009, when it slightly decreased. Fluvoxamine demonstrates an increase in utilization, while the utilization of escitalopram shows no significant changes

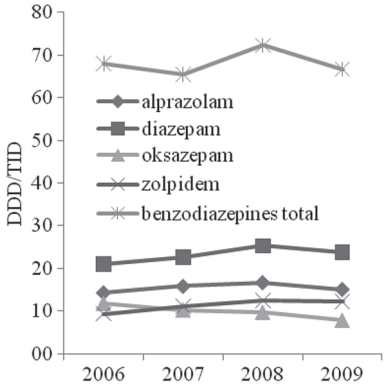

Fig. 4. Outpatient utilization of benzodiazepine from the Drug Utilization 90% (DU90%) segment and the hypnotic zolpidem, expressed in DDD/TID, in the City of Zagreb from 2006 to 2009. Legend: DDD/TID – defined daily doses per thousand inhabitants per day.

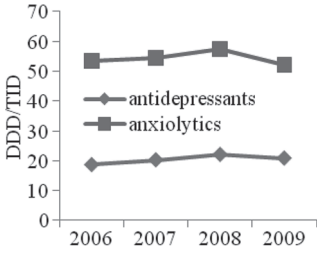

Fig. 5. The comparison between the total outpatient utilization of antidepressants and anxiolytics in the City of Zagreb between 2006 and 2009, expressed in DDD/TID. Legend: DDD/TID – defined daily doses per thousand inhabitants per day.

TABLE 2
PSYCHOLEPTICS AND PSYCHOANALEPTICS INCLUDED IN THE DRUG UTILIZATION 90% (DU 90%) SEGMENT, EXPRESSED IN THE DDD UNITS, AND THE TOTAL AMOUNT OF DRUGS OUTSIDE OF THE DU 90% SEGMENT, IN THE CITY OF ZAGREB IN 2006

Number	Drug name	DDD	Share (%)	DDD/TID
1.	Diazepam	1.490.169	22.4	21.0
2.	Alprazolam	1.019.355	15.3	14.3
3.	Oxazepam	839.934	12.6	11.8
4.	Zolpidem	662.540	10.0	9.3
5.	Lorazepam	449.032	6.7	6.3
6.	Paroxetine	323.145	4.9	4.6
7.	Sertraline	292.124	4.4	4.1
8.	Fluoxetine	194.992	2.9	2.7
9.	Nitrazepam	188.640	2.8	2.7
10.	Escitalopram	188.300	2.8	2.7
11.	Olanzapine	170.814	2.6	2.4
12.	Fluvoxamine	103.920	1.6	1.5
DU90% 1–12		5.922.965	89.4	83.3
Remaining 12–36		739.054	10.6	9.9
Total 1–36		6.662.019	100.0	93.2

Legend: DDD – defined daily doses, DDD/TID – defined daily doses per thousand inhabitants per day

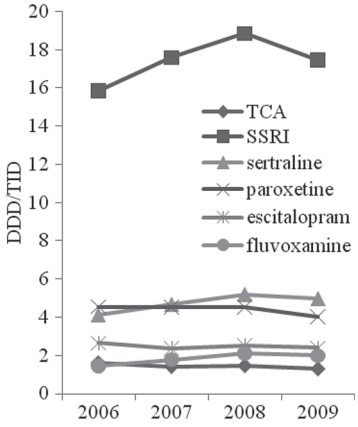

Fig. 6. Outpatient utilization of tricyclic antidepressants (TCA), the total utilization of the selective serotonin reuptake inhibitors (SSRI) and the utilization of most important individual SSRI drugs in the City of Zagreb between 2006. and 2009, expressed in DDD/TID. Legend: DDD/TID – defined daily doses per thousand inhabitants per day.

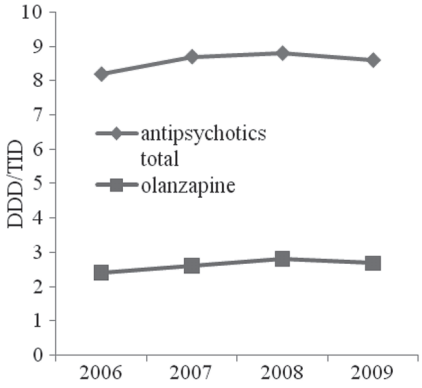

Fig. 7. Outpatient antipsychotic utilization in the City of Zagreb, with the utilization share of olanzapine, expressed in DDD/TID between 2006 and 2009. Legend: DDD/TID – defined daily doses per thousand inhabitants per day.

during the study period (Figure 6). Olanzapine, a third generation antipsychotic of the DU 90%, accounts for one fourth of the entire antipsychotic utilization. The trend of the overall utilization as well as the utilization of olanzapine in the study period was stable, having slightly increased in 2008 (Figure 7, Tables 2 and 3).

Discussion

Regarding the entire outpatient utilization in the City of Zagreb, a group of drugs affecting the nervous system (ATC group N) takes second place. Psychopharmaceuticals account for 70% of the group N's utilization and 9 to 10% of the overall drug utilization[19]. High psychopharmaceutical utilization in the City of Zagreb is supported by morbidity indicators. A group of mental and behavioral disorders takes the fifth place regarding hospital morbidity and hospitalization and also accounts for 7.4% of all morbidity and hospitalizations. The group of mental and behavioral disorders represented a significant share of diagnosed health issues within the primary health care system, exactly 5.2%, as well as 3.5% of all diagnosed conditions in emergency rooms[20]. The group of mental disorders (F00–F99) was the seventh most common hospitalization cause in Croatia in 2007, accounting

TABLE 3
PSYCHOLEPTICS AND PSYCHOANALEPTICS INCLUDED IN THE DRUG UTILIZATION 90% (DU 90%) SEGMENT, EXPRESSED IN THE DDD UNITS, AND THE TOTAL AMOUNT OF DRUGS OUTSIDE OF THE DU 90% SEGMENT, IN THE CITY OF ZAGREB IN 2009

Number	Drug name	DDD	Share (%)	DDD/TID
1.	Diazepam	1.685.685	24.5	23.71
2.	Alprazolam	1.075.005	15.6	15.12
3.	Zolpidem	870.240	12.6	12.24
4.	Oxazepam	554.655	8.1	7.80
5.	Lorazepam	393.580	5.7	5.54
6.	Sertraline	353.662	5.1	4.97
7.	Paroxetine	286.950	4.2	4.04
8.	Olanzapine	190.470	2.8	2.68
9.	Escitalopram	170.324	2.4	2.40
10.	Nitrazepam	161.580	2.3	2.27
11.	Citalopram	158.084	2.3	2.22
12.	Fluvoxamine	142.080	2.1	2.00
13.	Fluoxetine	130.984	1.9	1.84
DU90% 1–13		6.173.299	89.6	86.83
Remaining 13–37		718.340	10.4	10.10
Total 1–37		6.891.639	100.0	96.93

Legend: DDD – defined daily doses, DDD/TID – defined daily doses per thousand inhabitants per day

for 7.2% of all hospitalizations. According to the length of hospital treatment expressed in days, in Croatia mental disorders and illnesses occupy the first place accounting for 21.7% of all days of hospital treatment in general. In 2007, every fifth day of hospital treatment (1 474 305 bed days) was spent on treating mental disorders. As of 2007, almost two thirds of all hospitalization causes included the following four diagnostic groups: alcohol-related mental disorders (20.6%), schizophrenia (15.7%), severe stress reactions, including posttraumatic stress disorder (PTSD) (13.6%) and depressive disorders (11.7%). Between 1995 and 2007, there was a constant increase in the number and rate of hospitalizations caused by mental disorders. The rate of such hospitalization equaled 632.2/100 000 in 1995, while in 2007, it amounted to 1039.0/100 000. Mental illnesses were rarely found to be causes of death. In 2007, they took 8th place of all mortality causes in Croatia, with a 1.5% rate [21].

The group of psycholeptics accounts for two thirds of the entire N group utilization and for years, it has been one of the most prescribed drug groups[19]. The antipsychotic utilization shows a stable trend within the study period, with a slight increase in 2008 and a decrease in 2009. The average of the first generation antipsychotic utilization throughout the study period equals 2.86 DDD/TID, whereas the average of the third generation antipsychotic utilization equals 4.3 DDD/TID. The index of the first generation antipsychotic utilization compared to the third generation antipsychotics was 0.73, in 2006, and 0.63 in 2009. This indicates a constant improvement in the quality of antipsychotic prescription, as the third generation antipsychotics are a result of a targeted search for the best possible antipsychotic with as few side-effects as possible. Atypical antipsychotics are considered to be the first choice of therapy for patients with psychotic disorders and are preferred over first generation antipsychotics[22]. The development of a personalized psychopharmacotherapy for schizophrenia depends on the availability of a sufficient number of modern antipsychotics that should be the first choice of treatment for this degenerative mental illness[23]. According to some recent findings, current antipsychotics have been accepted in the City of Zagreb[24], as shown in the results. Although the current antipsychotics are effective having far less side-effects, pharmacoeconomic analyses demonstrate inconsistencies regarding the profitability of their high prices[25–28]. According to recent studies and this research, the utilization of olanzapine is highest among the third generation antipsychotics, although, due to its price; the Croatian Institute of Health Insurance (HZZO) has restricted the prescription of this agent exclusively to cases resistant or intolerant to classical therapies[29]. It can be said that the prescription quality satisfies the general guidelines for tolerability and effectiveness of antipsychotics, whereas from a pharmacoeconomical perspective, steps towards improvement are yet to be taken.

The benzodiazepine utilization equals 68.09 DDD/TID on average throughout the study period, reaching its peak in 2008 with 72.29 DDD/TID. Diazepam accounts for most of this group's utilization, its utilization showing a constant increase within the study period. Zolpidem, a partial non-benzodiazepine agonist of benzodiazepine receptors that reduces the stage of falling asleep and prolongs the overall sleep time, is recommended as the first choice for insomnia treatment among standard treatments[30]. Throughout the study period, zolpidem shows a slight increase, smaller than the increase of diazepam. Alprazolam and oxazepam demonstrate a decrease in utilization within the study period, which is in case of oxazepam due to it no longer being prescribed free of charge since 2006. The relative unavailability of oxazepam might be the reason behind a partial increase in the utilization of diazepam. Taking into account the possible side-effects of non-critical benzodiazepine use, their utilization in Zagreb is extremely high and inappropriate. The outpatient utilization of benzodiazepines, particularly diazepam, is much higher in Croatia than, for instance, in Scandinavian countries, which is evident from the DDD/TID number and the share of the DU 90% segment[31].

The average antidepressant utilization in the study period amounts to 20.42 DDD/TID. The TCA utilization is 1.47 DDD/TID averagely, whereas for SSRI, it equals 17.4 DDD/TID. There is a certain increase in the total antidepressant utilization which reaches its peak in 2008. The ratio index of the total TCA and SSRI utilization equaled 0.103 in 2006, having decreased to 0.075 in 2009. This signifies an existing quality of the antidepressant prescription as well as a particular tendency towards continuous quality improvement. SSRIs are considered to be the first choice of therapy for depressive disorders, being designated by a smaller intrinsic toxicity and better tolerability, so that all doctors in the primary health care system can and should prescribe them. Tricyclic antidepressants are the second choice drugs and should be prescribed only under strict psychiatric supervision[22]. The results demonstrate noticeable adherence to current information and prescription trends. Sertaline accounts for the most of SSRI utilization, showing an increase in utilization within the study period. It amounted to 4.1 DDD/TID in 2006, only to reach 4.97 DDD/TID in 2009. Sertraline is a selective serotonin reuptake inhibitor used and extensively studied in the world. It was proven safe and very tolerable. Randomized clinical studies have found it to be an effective treatment for depression and anxious disorders, and its efficiency has remained unchanged by psychiatric comorbidity. In non-comorbid patients, sertraline is an effective treatment for acute severe depressive disorders and chronic anxious disorders. It has also been proven effective in treating acute and chronic anxious disorders, posttraumatic stress disorders, panic disorders and generalized anxious disorder[32]. The utilization of paroxetine directly follows that of sertraline, although it shows decrease in the last two years of the study period. In 2006, its utilization equaled 4.6. DDD/TID, whereas in 2009, amounted to 4.04 DDD/TID. It has similar side-effects as sertraline and, accordingly, the difference in prescription within

the study period is not significant. Escitalopram and fluvoxamine account for a small part of the SSRI utilization and show a trend remaining stable throughout the whole study period. According to several studies, escitalopram is the most selective of all SSRIs. This indicates that its prescriptions could be even more frequent[33]. Also, certain studies confirm that the cost/benefit of escitalopram justifies focus of this study on that very agent[34].

The ratio index of the entire outpatient utilization of anxiolytics and antidepressants expressed in DDD/TID equals 2.66 on average, being 2.86 in 2006 and 2.5 in 2009. Despite this slight increase in the utilization of antidepressants as an ethiological therapy, in contrast to anxiolytics which are a symptomatic therapy, there was no significant variations in the study period, particularly compared to previous data[3]. The aforementioned facts indicate that there is room for improvement in the quality of anxiolytic and antidepressant prescription.

The DU 90% segment from 2006 and 2009 does not show a significant difference indicating a lack of considerable dynamic in drug prescription. This is positive, considering the prescription adherence to newer drugs. For instance, no less than 5 SSRIs belonged to the DU 90% segment in 2006 and six of them were in the segment in 2009. Regarding the aforementioned arguments about aspects of these drugs, their effectiveness, side-effects being fewer and their profitability, the antidepressant prescription looks promising. Diazepam holds the first place in the DU 90% segment in both studied years, which has already been characterized as an excessive utilization due to the drug characteristics and a comparison with developed countries. On the other hand, zolpidem, a standard treatment for insomnia, took fourth place in 2006 and reached a high third place in 2009. This indicates the adherence to guidelines in standard insomnia treatments. However, its utilization is overly excessive, seeing that it is only a symptomatic therapy and not etiological. The only antipsychotic in the DU 90% segment is olanzapine, a third generation antipsychotic, as a reflection of improved quality in antipsychotic prescription. In 2006, five benzidoazepines and zolpidem belonged to the DU 90% segment and the same pattern repeats in 2009. Taking into consideration the side-effects that can be triggered by a non-critical utilization, from tolerability to development of addiction, efforts should be made towards the reduction of excessive prescription. The rationalization measurements have been proven ineffective in the reduction of benzodiazepine prescription and should therefore be significantly and zealously improved. The utilization of psychotropic drugs is not only a medical problem but also a complex social issue. Doctors must prescribe these drugs within strict limits and based on the most rigorous medical indications, so that their prescription indeed matches the accurate diagnosis, and carefully use certain pharmacotherapeutic substances, bearing possible side-effects in mind, especially those related to inappropriate utilization or misuse[35].

Conclusion

According to the results presented in this study the following was concluded: 1) During the observed time period the total utilization of psycholeptics and psychoanaleptics had the tendency of growth, 2) Anxiolytics account for most of psycholeptic group utilization, 3) Utilization of benzodiazepines in Zagreb is extremely high and inappropriate, 4) Antidepressants account for the majority of psychoanaleptic drug utilization, 5) Prescription of antidepressants shows a tendency towards a continuous quality improvement, 6) There is a constant improvement in the quality of antipsychotic prescription, 7) There is adherence to guidelines in standard insomnia treatments, 8) There is still extent for improvement in the quality of anxiolytic and antidepressant prescription.

A general insight into the quality of psychopharmaceutical utilization in the City of Zagreb indicates a stable trend in contrast to recent studies. In the study period, benzodiazepines recurrently accounted for more than 50% of outpatient psychopharmaceutical utilization. This confirms a need for clear guidelines as the most important rationalization measurement in prescription and utilization. In addition, it is necessary to identify priorities and problems in order to successfully solve them, by monitoring drug utilization and prescription on a national level. The results demonstrate that within the primary health care system, there is a need for constant education on rationally prescribing this drug group. The general population should be informed about possible side-effects of psychopharmaceuticals, and the cooperation of patients should be constantly monitored.

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K. Živković

University of Zagreb, University Hospital »Sv. Duh«, Department of Gynecology and Obstetrics, Sv. Duh 64, 10000 Zagreb, Croatia
e-mail: kresimirzivkovic@yahoo.com

ISTRAŽIVANJE KVALITETE IZVANBOLNIČKOG PROPISIVANJA PSIHOFARMAKA U GRADU ZAGREBU 2006.–2009. GODINE

S A Ž E T A K

Manjak studija u Hrvatskoj koje bi utvrdile opravdanost prevelike potrošnje psihofarmaka bio je poticaj da se provede ovo istraživanje. Obzirom na provedbu navedene studije bilo bi moguće utvrditi je li došlo do povećanja, smanjenja ili stabilizacije trendova. Podaci o izvanbolničkoj potrošnji psiholeptika i psihoanaleptika prikupljani su u razdoblju od 2006.–2009. godine iz svih ljekarni Grada Zagreba. Na temelju prikupljenih podataka su za sve lijekove N05 i N06 grupa izračunate definirane dnevne doze (DDD) i DDD/1000 stanovnika/dan, koristeći anatomsko-terapijsko-kemijsku klasifikaciju (ATK) za 2006., 2007., 2008. i 2009. godinu. Za kvalitetu propisivanja, korištena je DU 90% metoda (Drug Utilization 90%). Također, da bi se suptilnije utvrdila kvaliteta propisivanja pojedinih skupina lijekova, izračunati su indikatori kroz omjere ukupne potrošnje pojedinih terapijskih i farmakološko-terapijskih podskupina u DDD/1000 stanovnika/dan. Potrošnja anksiolitika (N05B) čini većinu potrošnje psiholeptika u Gradu Zagrebu, kroz cijelo promatrano razdoblje. Tijekom razdoblja istraživanja došlo je do blagog porasta potrošnje antidepresiva, za 10,5% uzimajući u obzir prvu i zadnju godinu istraživanog perioda. U 2006. godini 5 benzodiazepina i hipnotik zolpidem, 5 SSRI i jedan antipsihotik treće generacije (olanzapin) se nalaze u DU 90% segmentu. U 2009. godini se u DU 90% segmentu nalazi također 5 benzodiazepina i hipnotik zolpidem, 6 SSRI i jedan antipsihotik treće generacije (olanzapin) se nalaze u DU 90% segmentu. Opći uvid u kvalitetu propisivanja psihofarmaka u Gradu Zagrebu ukazuje na stabilan trend u odnosu na ranije studije. Indeks omjera propisivanja antipsihotika prve i treće generacije pokazao je poboljšanje u kvaliteti propisivanja. Također, indeks TCA i SSRI pokazuje poboljšanje kvalitete propisivanja antidepresiva u promatranom razdoblju. Nadalje, indeks omjera propisivanja anksiolitika i antidepresiva pokazao je slabo poboljšanje kvalitete u propisivanju etiološke terapije. Benzodiazepini tijekom istraživanog razdoblja činili su redovito više od 50% izvanbolničke potrošnje psihofarmaka, što potvrđuje potrebu za jasnim smjernicama kao najbitnijom mjerom racionalizacije u potrošnji i propisivanju. Nužno je praćenje potrošnje i propisivanja lijekova na nacionalnoj razini. Rezultati pokazuju da na razini primarne zdravstvene zaštite postoji potreba za trajnom edukacijom racionalnog propisivanja lijekova iz ove grupe.