

USE OF ANXIOLYTICS AND HYPNOTICS - A PILOT STUDY

E. Krasteva*, I. Kostadinova*, N. Mateva**

* *Department of Pharmacology, Clinical Pharmacology and Drug Toxicology;*

** *Department of Social Medicine, Medical University - Plovdiv, Bulgaria*

Reviewed by: Assoc. prof. M. Zhelyazkova-Savova, PhD

SUMMARY

Introduction. Benzodiazepine anxiolytics and hypnotics are often used in therapy. **Aim:** To study the use of anxiolytics and hypnotics among pharmacy clients in the town of Plovdiv. **Materials and methods:** In 2005 a questionnaire study was carried out on the use of anxiolytics and hypnotics among 191 clients of 50 pharmacies in the town of Plovdiv chosen at random. The frequency of using the above-mentioned groups of drugs was studied, as well as the factors influencing that use. The data were processed with the SPSS 12.0 statistical software. **Results:** 36.6% of the people who answered the questionnaire used anxiolytics on prescription, mostly bromazepam - 52.9%; diazepam - 19.1%; alprazolam and clonazepam - 13.2% each. Controlled use of hypnotics was recorded in 6.3% of the people included in the study. Preferred preparations with hypnotic effect were phenobarbital and zolpidem - 33.3% each, as well as nitrazepam - 25%. Self-treatment was recorded in 12% of the people. The most frequently used drugs were bromazepam - 41.7%, phenobarbital - 16.7% and diazepam - 12.5%. Of all preparations used for self-treatment, 75.1% were benzodiazepine ones. Risk factors for higher use of anxiolytics on prescription were: age over 60 /odds ratio=2.37/, use of hypnotics on prescription /odds ratio=9.92/, life characterized by "nervous tension" /odds ratio=2.27/, presence of concomitant diseases /odds ratio=6.75/ and intake of drugs for their treatment /odds ratio=5.72/. Of all the people that answered the questionnaire, 30.4% reported presence of concomitant diseases, with hypertension as the leading one (28.6%). Those who did not take alcohol used significantly more frequently anxiolytics on prescription / $P < 0.01$; $t = 3.02$ /. Those with higher education reliably more frequently resorted to self-treatment. **Conclusion:** The use of anxiolytics and hypnotics depended on the age, education and harmful habits of the people studied.

Keywords: anxiolytics, hypnotics, use

INTRODUCTION

Anxiolytics and hypnotics are among the drugs most frequently used to treat anxiety, normalize sleep or manage fear states. 12-16% of the adult population use anxiolytics and hypnotics, mostly benzodiazepines (4). A study carried out in the European Union and covering a 20-year period, found out that benzodiazepines are in the lead as the cause of intoxication or adverse drug reactions, due to incorrect use or errors in prescribing (7). Benzodiazepines possess lower acute toxicity, as compared to barbiturates and other hypnotics, but they can bring about dependence even after a 3 or 4-week application (9). The above-mentioned facts determine the implications of the issue of controlled or uncontrolled use of anxiolytics and hypnotics.

AIM

To study the use of anxiolytics and hypnotics among pharmacy clients in the town of Plovdiv.

MATERIALS AND METHODS

In 2005 an anonymous questionnaire study was carried out on the use of anxiolytics and hypnotics among 191 clients of 50 pharmacies in the town of Plovdiv chosen at random. The study was carried out in connection with letter № 685 of Feb. 6, 2004 of the Bulgarian Drug Agency concerning the problems of drug safety, and was approved by the University Ethics Committee with Proceedings No 7 of Nov. 23, 2005. The questionnaire of Koichev G., Avramova M. /1997/ was used, modified and expanded by the authors of the article. Indices studied: gender, age, education, frequency of use, harmful habits, concomitant diseases, nervous tension. In the statistical data processing the following analyses and tests were used: alternative analysis, variance analysis, Student's t-test and Fisher's exact test in 2 x 2 ta-

Address for correspondence:

E. Krasteva, Dept of Pharmacology, Clinical Pharmacology and Drug Toxicology, Medical University, 15 A, "Vasil Aprilov" Str. 4000, Plovdiv, BULGARIA
E-mail: Konsolida2000@yahoo.com

bles. $P < 0.05$ was accepted as the level of significance of the zero hypothesis. The data were processed with the SPSS 12.0 statistical software.

RESULTS

The characteristics of the people included in the study are given in table 1. The analysis of the data from the questionnaire study showed that no significant difference was observed between men and women concerning the controlled or uncontrolled use of anxiolytics and hypnotics /in the number of cases studied/.

Table 1. Characteristics of the studied patients

	number	%	Sp
1. Gender			
male	47	24,6	3,1
female	144	75,4	3,1
2. Age			
up to 29 years	34	17,8	2,7
30-59 years	136	71,2	3,2
60 years or more	21	11	2,2
3. Education			
basic or no education	6	3,1	1,2
high school	84	44	3,5
college a university	101	52,9	3,6
4. Profession			
students	7	3,7	1,8
workers	158	82,7	2,7
unemployed	15	7,9	1,9
retired	11	5,8	1,6

Other factors studied that have bearing on the controlled or uncontrolled use of anxiolytics and hypnotics are given in table 2. It was recorded that 66.5% of the people included in the study took alcohol and 48.2 % smoked. No significant relation was found to exist between smoking and the use of anxiolytics and hypnotics. The people taking anxiolytics on prescription significantly more rarely took alcohol / $P < 0.01$; $t = 3.02$ /.

64.4% of all people reported to live in "nervous tension". They used anxiolytics on prescription significantly more frequently / $P < 0.01$; $t = 2.62$ /, as compared to those that did not report "nervous tension". 30.4% of the people reported presence of concomitant diseases, among which hypertension was the leading one - in 28.6% of the cases.

It was found out that 36.6% of the people included in the study used anxiolytics on prescription, mainly bromazepam - 52.9%; diazepam - 19.1%; alprazolam and clonazepam -13.2% each /Fig. 1/.

Table 2. Other factors influencing the usage of anxiolytics and hypnotics

	number	%	Sp
1. Hazardous habits			
smokers	92	48,2	3,6
non-smokers	99	51,8	3,6
alcohol users	127	66,5	3,1
not using alcohol	64	33,5	3,1
2. Concomitant diseases reported			
Arterial hypertension	16	28,6	3,2
3. Drugs used for the treatment of concomitant diseases			
antihypertensive drugs	11	28	3,2
4. Reported psycho traumatic experience			
Yes	123	64,4	3,4
No	68	35,6	3,4

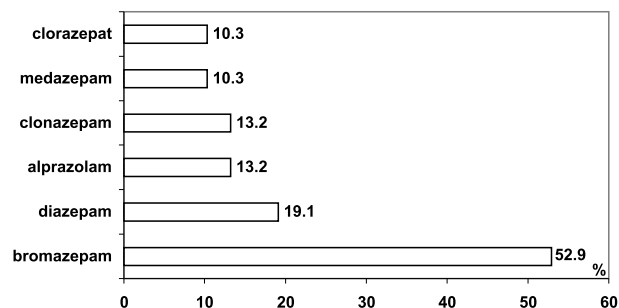


Fig. 1. Most frequently used anxiolytics on prescription

The data from the questionnaire study on the controlled use of anxiolytics and hypnotics are given in table 3. The relative share of those using anxiolytics was largest in the people aged 60 and over (71.4%), followed by those aged from 30 to 59 (38.2%), and it was smallest in those under 29 years of age (8.8%). The difference in the use of anxiolytics on prescription was significant among the people belonging to different age groups at $P < 0.01$ / $t = 3.10$ /.

No significant difference was found in the use of anxiolytics and hypnotics with respect to the occupation of those who answered the questionnaire. Those using anxiolytics on prescription reliably more frequently reported psycho traumatic experience / $P < 0,02$; $t = 2,62$ /. Among them, those that did not take alcohol, used anxiolytics on prescription significantly more frequently / $P < 0.001$; $t = 3.02$ /. Those in-

Table. 3. Influence of some factors on the prescribed usage of anxiolytics and hypnotics

Factor	Using anxiolytics		Not using anxiolytics		Odds ratio	95% CI	P
	Number	%	number	%			
1. Gender							
Female	51	35,4	93	64,6	1,24	0,63-2,43	>0,05
Male	19	40,4	28	59,6			
2. Age							
Over 60 years	15	71,4	6	28,6	2,37	0,07-0,52	<0,001
Up to 60 years	55	32,4	115	67,6			
3. Education							
Up to high school	39	43,3	51	56,7	1,73	0,95-3,12	>0,05
University	31	30,7	70	69,3			
4. Social status							
Working	63	35	117	65	1,79	0,87-1,09	>0,05
Retired	7	63,6	4	36,4			
5. Hazardous habits							
Smokers	34	37	58	63	1,03	0,56-1,84	>0,05
Non-smokers	36	36,4	63	63,6			
Alcohol users	37	29,1	90	70,9	1,46	1,11-1,92	<0,01
Not using alcohol	33	51,6	31	48,4			
6. Concomitant diseases reported							
Yes	39	67,2	19	32,8	6,75	3,42-13,33	<0,001
No	31	23,3	102	76,7			
7. Drugs used for concomitant diseases							
Yes	35	66	18	34	5,72	2,88-11,36	<0,001
No	35	25,4	103	74,6			
8. Usage of hypnotics							
Yes	10	83,3	2	16,7	9,92	2,10-46,70	<0,001
No	60	33,5	119	66,5			
9. Reported psycho trauma							
Yes	53	43,1	70	56,9	2,27	1,18-4,37	<0,02
No	17	25	51	75			

cluded in the study that used anxiolytics on prescription, used significantly more frequently hypnotics on prescription as well / $P<0.01$; $t=2.89$ /. Those using anxiolytics on prescription reliably more frequently reported presence of concomitant diseases / $P<0.001$; $t=6.12$ /, as well as taking drugs for their treatment / $P<0.00$; $t=5.42$ /.

Of those taking anxiolytics on prescription, 79.3% reported that they would change their physician if he/she refused to prescribe them the medication they used / $P<0.001$; $t=4.68$ /. Controlled use of hypnotics was recorded in 6.3% of the people included in the study. Preferred preparations were phenobarbital and zolpidem - 33.3% each, as well as

nitrazepam - 25%. /Fig. 2/. In the number of cases studied no significant relationship was found between the use of hypnotics on prescription and all the other factors studied, with the exception of use of anxiolytics on prescription.

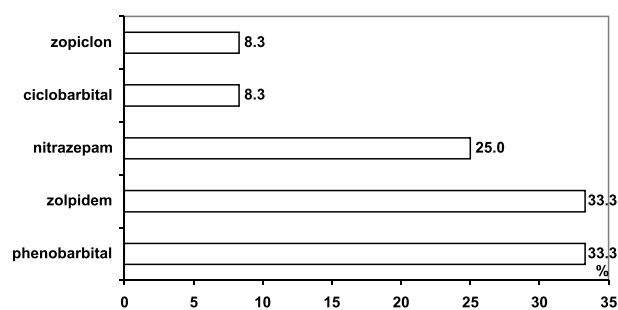


Fig. 2. Most frequently used hypnotics on prescription

Self-treatment with anxiolytics and hypnotics was recorded in 12% of the people. Of all the medications used for self-treatment, 75.1% were benzodiazepines /Fig. 3/. The most frequently used preparations were bromazepam - 41.7%, phenobarbital - 16.7% and diazepam - 12.5%. A significant relationship was found to exist between self-treatment and education. Of all the people included in the study, those with university an college education more frequently resorted to self-treatment, as compared to those with secondary and lower education / $P < 0.01$; $t = 3.23$ /. Those who self-treated themselves with anxiolytics and hypnotics, more frequently reported that they would change their physician if he/she refused to prescribe them the medication they used / $P < 0.02$; $t = 2.17$ /. No significant difference was found regarding the other indices studied in those self-treating themselves with anxiolytics and hypnotics.

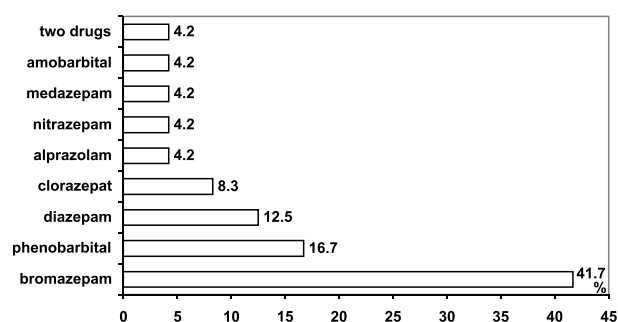


Fig. 3. Distribution of the most frequently used anxiolytics and hypnotics for self-treatment

DISCUSSION

The data from the questionnaire study that we carried out on the frequency of use of anxiolytics, were similar to the data obtained by Levine J. et al. (2000) who reported that 40% of the patients in the United States received anxiolytics on prescription.

Significant risk factors for higher use of anxiolytics on prescription were: age over 60 /odds ratio=2.37/, use of

hypnotics on prescription /odds ratio=9.92/, life characterized by "nervous tension" /odds ratio=2.27/, presence of concomitant diseases /odds ratio=6.75/ and taking drugs for their treatment /odds ratio=5.72/.

Our study found a correlation between advanced age and controlled use of anxiolytics. These data are quite alarming. A large-scale study carried out in the European Union found a connection between the use of anxiolytics and development of complications in elder patients. The treatment of these complications cost the European Community an annual sum of 1.5-2.2 milliard euros (13).

Of all the preparations used for self-treatment by the people included in our study, 75% were benzodiazepine anxiolytics and hypnotics. According to data from medical publications, benzodiazepines take the lead in psychotropic drug abuse and uncontrolled trade (2; 5). The same authors reported that the abusers were most frequently women and patients aged 40 and above. We found a relatively high percentage of self-treatment with anxiolytics and hypnotics (12%), irrespective of the fact that these medications are available only on prescription. We think that this percentage will be reduced with better drug control.

Some authors found in their studies that benzodiazepines were applied in 40 % of the cases of multiple drug therapy, and in half of these cases the patients received three or more preparations (11). The data from our study were similar to the cited ones, namely, users of anxiolytics more frequently had concomitant diseases and more frequently received medications for their treatment, as compared to non-users of anxiolytics. Hypertension was most frequently reported as a concomitant disease. This fact accounts for the high use of anxiolytics, which are often applied in the treatment of hypertension to manage stress and aid the therapy.

There have been reports in specialized publications of a high correlation between stress, harmful habits and use of anxiolytics (3;12). The data from our study showed that those who reported life characterized by "nervous tension", significantly more frequently used anxiolytics. Non-users of alcohol also used anxiolytics more frequently. No connection was found between smoking and the use of anxiolytics and hypnotics.

When prescribing anxiolytics and hypnotics, it is essential to determine very precisely the indications for their administration and the correct dosage, as well as to exert control on the duration of their use (6;14). A large-scale study in Great Britain showed an inappropriate application of these preparations in 65% of the cases (1). In 46% of the cases the patients had been taking anxiolytics for more than 10 years, although these drugs had been prescribed for a short-term treatment only (10). Two thirds of the users of anxiolytics included in our study are prone to a prolonged use of the medications, which indicates that developing dependence is very likely.

The data obtained from the questionnaire study that we carried out showed that a higher control is required in administering anxiolytics and hypnotics by the physicians that prescribe them, the pharmacists that deliver them and the institutions that control the process.

CONCLUSIONS

1. One third of the people included in the study used anxiolytics on prescription.
2. Significant risk factors in controlled use of anxiolytics were: age over 60, use of hypnotics on prescription, life characterized by "nervous tension".
3. Risk factor in self-treatment with anxiolytics and hypnotics proved to be education.

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