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The Frequency of Benzodiazepine Use in the Isparta Province

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ABSTRACT:

The frequency of benzodiazepine use in the Isparta Province

Objective: In the present study, we aimed to determine the frequency of benzodiazepine prescriptions to patients with psychiatric disorders in Isparta Province, Turkey.

Methods: The data was collected retrospectively from records of controlled drugs of Isparta Province in 2011. A total of 11,317 benzodiazepine prescriptions for any kind of psychiatric disorder, written for patients from January 2011 through December 2011 were included. Prescriptions for diagnoses other than psychiatric disorders were excluded.

Results: In Isparta Province, one year frequency of benzodiazepine use at least one time was 2.06% (2.58% for females and 1.53% for males). The number for patients aged 65 years or older was found to be 3.92%. Benzodiazepines were prescribed mostly by general practitioners (39.2%), psychiatrists (33.4%), and neurologists (19.2%). The most frequently prescribed benzodiazepines were alprazolam (76.4%), clonazepam (11.4%), and diazepam (6.8%).

Conclusion: The frequency of benzodiazepine use in Isparta Province was lower than that found in other study results. It appears that official control of benzodiazepine prescriptions in Turkey leads to lower rates of benzodiazepine use. Also the lower rate of benzodiazepine use is considered to be associated with the low preference of benzodiazepines by physicians and the unwillingness of the patients to use benzodiazepine. This study is the first to investigate the frequency of benzodiazepine use in a Turkish province, and our findings should to be supported by further studies.

Keywords: benzodiazepine, frequency, psychiatric disorder

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INTRODUCTION

Benzodiazepines have been a treatment option for psychiatric disorders since 1960[1]. However, their extensive clinical use is limited as there is a possibility of causing dependence[2,3]. Hence, the maximum duration of benzodiazepine treatment has been recommended as 4-12 weeks[4,5]. Despite the recommendations of short-term use, the rate of long- term benzodiazepine use was reported as 0.6% to 4.9%[6,7]. In addition some patients may experience unwillingness to stop benzodiazepine treatment and may exhibit insistent or threatening behaviours in order to obtain a benzodiazepine prescription in clinical practice in Turkey[8]. As a result, further troubles may arise during the treatment of a psychiatric disorders with benzodiazepines. Due to the possibility of dependence on benzodiazepines, there are regulations controlling the clinical use of benzodiazepines in Turkey and many other countries[9]. Since 1986, benzodiazepines have been

controlled drugs in the Turkey[10].

In England, the National Treatment Agency for Substance Misuse (2011) pointed out that determining the frequency of prescriptions and prescription tendencies are among the main aims of the struggle against misuse associated with prescription drugs1[1]. One-year frequency of benzodiazepine use at least one time was reported as 4% - 17.6%, worldwide[5,12-16]. To the best of our knowledge, there is no community-based frequency studies regarding benzodiazepine use in Turkey. The aim of this study is to assess benzodiazepine use for psychiatric disorders in Isparta Province.

METHODS

Study Design

The study data was obtained through a retrospective evaluation of controlled drugs subject to official control given within the provincial borders of Isparta. The number of benzodiazepine prescriptions subject to the controlled drugs for the year 2011 (1 January - 31 December 2011) was determined as 12,213, according to the data obtained from the Isparta Provincial Directorate of Health, Pharmacy Department. Among these prescriptions, benzodiazepines prescribed for the diagnosis, of epilepsy (n=787), epilepsy-psychiatric disorder comorbidity (n=71) and any general medical disorder (n=38) were excluded from the study. A total of 11,317 benzodiazepine prescriptions for any kind of psychiatric disorders in the year 2011 were included. The name of the drug, psychiatric diagnosis, the specialty of the prescribing physician and age and gender of the patient were recorded. It was also determined how many times the prescriptions were renewed within a year.

The total population of Isparta Province was reported as 411,245 (205,423 males, 205,822 females) according to the results of an address-based population registration system of Isparta Province (2011). The number of individuals between the age 0-14 was reported as 84,717 (43,583 males, 41,144 females), individuals between the age of 15-64 as 283,088 (142,765 males, 140,313 females) and individuals at the age of 65 or older as 43,440 (19,075 males, 24,365 females)[17].

One-year frequency of benzodiazepine use at least one time in Isparta province by age group (0-14, 15-64 and ≥65) and gender (female, male) was calculated as follows: The number of individuals being prescribed benzodiazepines at least one time a year was proportioned to the total population in Isparta Province by age or gender.

During a period of one year, the individuals having been prescribed benzodiazepine for a period of six months or longer were classified as long-term benzodiazepine users and those having been prescribed for a period of 330 days or longer were yearlong benzodiazepine users[5,18]. Long-term benzodiazepine users and year-long benzodiazepine users were assessed based on the methods of previous studies[13,28]. This study was approved by the Ethical Committee of Suleyman Demirel University, School of Medicine.

Statistical Analyses

Frequencies and percentages were used to assess the data. Descriptive statistics were evaluated together with its frequencies and percentages in the classified variables such as sex, age groups, prescription categories of benzodiazepines, types of benzodiazepine drugs, distribution of benzodiazepine prescription by specialties and types of diagnosis in the benzodiazepine prescriptions. For the continuous variable of age, it was interpreted with the average and standard deviation values.

RESULTS

Frequency of benzodiazepine prescription: The number of individuals who used benzodiazepine at least one time during the year was 6752 according to a pharmacy-based database analysis. Distribution by gender was determined as follows: 4261 females (63.1%) and 2491 males (36.9%).

Average age was 52.5±17.1. Frequency of benzodiazepine use by age group distribution (Table 1), by sex among the individuals aged ≥15 (Table 2) and by age group and sex (Table 3) is presented in the Tables 1, 2, and 3. Long-term and year-long benzodiazepine use were determined as n=211 (0.06%) and n=38 (0.01%) respectively.

Table 1: Frequency of benzodiazepine use based on the distribution of age groups in Isparta province

Ages	Number	%	Frequency (%)
0-14	13	0.2	0.015
15-64	5037	74.6	1.78
≥65	1702	25.2	3.92
Total	6752	100.0	1.64

Table 2: Frequency of benzodiazepine use by gender among the individuals aged 15 and older in Isparta province

	Number	%	Frequency (%)
Female	4255	63.1	2.58
Male	2484	36.9	1.53
Total	6739	100.0	2.06

Table 3: Frequency of benzodiazepine use by age groups and gender in Isparta province

Age/Gender	Number	%	Frequency (%)
0-14 age			
Female	6	46.1	0.015
Male	7	53.9	0.014
Total	13	100.0	0.014
15-64 age			
Female	3209	63.7	2.29
Male	1815	36.3	1.27
Total	5124	100.0	1.81
≥65 age			
Female	1040	61.1	4.27
Male	662	38.9	3.46
Total	1702	100.0	3.92

Re-prescription of benzodiazepines within a year: Individuals prescribed benzodiazepine one time within a year were 4,750 people (70.4%), 1,791 people were prescribed benzodiazepine 2-5 times (26.6%), 173 (2.5%) for 6-11 times and 38 (0.5%) people 11 times or more.

Distribution of benzodiazepines: The benzodiazepines that were prescribed include, alprazolam: 8,763 (76.4%), clonazepam: 1,308 (%11.4), diazepam: 776 (6.8%), lorazepam: 442 (3.9%), clorazepate: 18 (0.12%), and chlordiazepoxide: 10 (0.07%).

Distribution of benzodiazepine prescriptions by specialties: Primary care: 4,437 (39.2%), psychiatry: 3,782 (33.4 %), neurology: 2,179 (19.2%), emergency medicine: 570 (5.0%), internal medicine: 230 (2.0%) and other specialties: 119 (1.2%).

Diagnostic distribution of psychiatric disorders: For a single psychiatric diagnosis 10,320 prescriptions were written (91.1%) and 997 (8.9%) prescriptions were written for psychiatric comorbidities.

DISCUSSION

This study is the first to assess the frequency of benzodiazepine use in a province of Turkey. In Isparta Province, one-year frequency of benzodiazepine use at least one time among individuals aged ≥15 was determined as 2.06%. In other studies, one-year frequency of benzodiazepine use at least one time in Germany, Canada, USA, Sweden and Belgium was reported as 4-7%, 10%, 11%, 14.5%, and 17.6% respectively[12-16,19,20]. Benzodiazepines can be readily obtained from pharmacies without a prescription in Latin America and some Asian countries. It is considered that benzodiazepine use may be more common in those countries[2,21]. High levels of use have been reported, with one-year frequency of benzodiazepine use at least one time of 31.4% in Chile[22]. It is observed that the frequency of benzodiazepine use in many countries of the world is 2-15 times as much as the frequency determined in Isparta Province of Turkey. The lower rate of benzodiazepine use in Isparta Province is considered to be associated with the low preference of benzodiazepine use by physicians for treatment and the unwillingness of patients to use benzodiazepine. Karamustafalioglu et al. have shown that the most common reason for physicians not preferring benzodiazepines is due to the addictive potential of benzodiazepines[23].

Also, patients may not prefer benzodiazepines because it is perceived as a heavy drug, or patients do not want to be seen a seriously ill, or want to avoid controlled drugs stigmatization[24]. We speculated that, one of the important factors for the low use of benzodiazepine in Isparta Province is that benzodiazepinophobia, due to benzodiazepine dependence, might be exaggerated by some physicians. However, this idea should be supported with further studies.

Rates of long-term benzodiazepine use and year-long benzodiazepine use were determined as 0.06% and 0.01%, respectively, and those rates are well under the rates obtained in other studies (1.7%-4.9% for long-term benzodiazepine use and 0.6% for year-long benzodiazepine use)[5-7]. The short-term beneficial effects of benzodiazepines may turn into an increase in side effects in long-term use, tolerance development, and dependence[1,18]. For this reason, benzodiazepine dependence in long-term use must be carefully assessed.

The frequency of benzodiazepine use in individuals aged ≥65 was determined as 3.92%. In other studies, the annual frequency of benzodiazepine use in the individuals aged ≥65 was reported as 15.7 - 31.7%[1,15,25,26]. The frequency rates of benzodiazepine use in patients aged ≥65 were twice as high as that of the general population. It is assumed that the lower usage rate of benzodiazepine among society in general would have an impact on the lower usage rate of benzodiazepine in the elderly. It is stated that 48%-84% of benzodiazepine use in the elderly is inconvenient and therefore, would have a negative impact on functionality[27,28]. Furthermore, benzodiazepines may cause serious side effects such as performance impairment, falls and fractures in this age group[29]. For this reason, proper use of benzodiazepines in the elderly and management of its side-effects must be carefully assessed both at the beginning of the treatment and for recurrent uses.

As with the other studies, the rate of benzodiazepine use was found to be higher in females compared to males and this rate was twice as much as that of males[6,25,30].

It was reported that the prescription rate of benzodiazepines among all physicians is 35%-50% and it was most frequently prescribed by general practitioners[15,31]. In our study, it was also found that benzodiazepines were most frequently prescribed by general practitioners (39.2%). One cause of this result is that most of the refills might be prescribed by the general practitioners due to the health system of Turkey. Moreover, the factors affecting the patterns of benzodiazepine use of the general practitioners must be investigated. Issues such as proper use of benzodiazepines, their side-effects, dependence and use in special populations (older age) must be addressed during the education of general practitioners. In this way, it is ensured that the attitudes of the physician group most frequently prescribing benzodiazepines in clinical practice can be evaluated and benzodiazepine use guides at the primary care level can be prepared.

It was found that departments of psychiatry (33.4%), neurology (19.2%), emergency medicine (5%) and internal medicine (2%) were the other departments prescribing benzodiazepines following family medicine. In other studies, it was stated that benzodiazepine prescription rate of psychiatrists was 4.7-11%[13,15].

The most common diagnosis for benzodiazepine prescriptions was found to be anxiety disorders. The other common diagnoses are depression and psychotic disorders. In a survey conducted in Turkey, it was stated that the most common indications for benzodiazepine prescriptions were anxiety disorders and depression and our results were consistent with the results[23]. It was found that depression constituted 18% of the diagnoses for benzodiazepine prescriptions. It was also found that benzodiazepines did not have an antidepressant effect, but increased compliance to treatment when combined with antidepressants in the first month of depression treatment, in clinical practice[1,32]. Furthermore, it was reported that benzodiazepines were used in 33-62% of depression treatments[19,33,34]. This study also

indicates that benzodiazepines are among the drugs preferred by physicians for depression treatment in clinical practice, despite not having an antidepressant effect.

In other studies, assessing the frequency of benzodiazepine use in proportion to an insomnia diagnosis was 10-29%[18,19]. Although insomnia constitutes only 2.3% of the diagnoses.

The most preferred benzodiazepines were different than in previous studies. The most frequently prescribed benzodiazepines were found to be alprazolam followed by clonazepam and diazepam. In other studies, lorazepam, followed by clonazepam and diazepam or diazepam, followed by alprazolam and lorazepam were the most prescribed[19,35]. Those results indicate that the benzodiazepine of choice for psychiatric disorders varies between countries.

The refill rate of benzodiazepines within a year was determined as 29.6%, and it was three times lower than the rate of refills (89%) in the Netherlands[20]. This low rate of benzodiazepine represcription indicates that short-term benzodiazepine use can be applied more rationally in Isparta Province.

The study data was obtained retrospectively. Also, psychiatric diagnoses were obtained by evaluation of controlled drugs and some non-specific diagnoses (such as anxiety disorders) were obtained by reviewing the prescribing practices of clinicians of controlled drugs. Hence, we could not determine diagnosis. Also, the diagnoses in the prescriptions can have limited reliability because of reasons such as reimbursement policy. These were the limitations of the study.

CONCLUSION

In Isparta Province, one-year frequency of benzodiazepine use was 2.06%. This study shows that benzodiazepine use is more common among the elderly and females. It appears that official control of benzodiazepine prescriptions in Isparta Province leads to lower rates of benzodiazepine use. Benzodiazepines are mostly prescribed by general practitioners. For this reason, it is essential that rational benzodiazepine use is covered in medical education and general practitioner training. In Turkey, benzodiazepine use guides must be prepared involving all the specialties, especially general practitioners and psychiatry. In this way, a contribution would be made to the rational use of benzodiazepines. This study is the first to investigate the frequency of benzodiazepine use in a province of Turkey and our findings must be supported by future studies.

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