

PATTERN OF BENZODIAZEPINE PRESCRIPTION IN INTERNAL MEDICINE OUTPATIENTS AT A TERTIARY CARE HOSPITAL IN PAKISTAN

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 Date Received: July 01, 2014
 Date Revised: May 02, 2015
 Date Accepted: March 12, 2015

ABSTRACT

Objective: To explore the pattern of prescription of benzodiazepines in internal medicine outpatients at a tertiary care hospital. The study included the types of benzodiazepines used, gender and age preference, indication of prescription, past history of use, dosage and length of prescription.

Methodology: This cross sectional study was undertaken from 1st of January to 1st of March 2011 at Internal medicine outpatients during this time were identified through the hospital database. Relevant data from charts of patients was recorded on a preformed questionnaire. All data collected was analyzed in SPSS 17.0.

Results: Out of 1706 patients attending the outpatient clinics, 11.1% patients were prescribed benzodiazepines. Female gender and older age was associated with higher rate of prescription. Intermediate acting benzodiazepines prescribed to 98.4% patients, were the most commonly prescribed drugs. Most common indication for prescription of benzodiazepine was anxiety and depression. The length of prescription was mentioned in only 19% of cases. Only 24.3% patients had previously been prescribed the drug.

Conclusion: The pattern of benzodiazepine prescription in tertiary care hospital is comparable to that of developed countries. Due to the grave potential for abuse, regulation regarding the use of this class of drugs is extremely important. Data from this study and other studies from the country seem to suggest that awareness on this topic is in place. However, further widespread studies need to be carried out at the community level.

Key Words: Benzodiazepines, Pharmacological half-life, Medical outpatient.

This article may be cited as: Kazim MN, Abrar A, Hani M, Mansoor S, Tahir S, Mehmood A, et al. Pattern of benzodiazepine prescription in internal medicine outpatients at a tertiary care hospital in Pakistan. *J Postgrad Med Inst* 2015; 29(1): 38-42.

INTRODUCTION

Benzodiazepine, a psychoactive drug was introduced in 1960 and has since then become readily available with prescription rates increasing dramatically during the mid 70s¹. Insomnia, anxiety disorders, and other psychiatric conditions are common indications for the prescription of benzodiazepines². When prescribed as hypnotics the use of these drugs should be limited and should not exceed two weeks while as anxiolytics, use should be limited to four weeks.

Long term use of benzodiazepines use can lead to memory and cognitive impairment, tolerance, disinhibition, affective reactions, dependence among others³.

Development of tolerance and dependence is a major issue with these drugs. About one-third of all pa-

tients using benzodiazepines for four weeks or longer can develop dependence. Stoppage of treatment can lead to a withdrawal syndrome characterized by symptoms of anxiety, insomnia, autonomic instability, and those of perceptual disturbance, sensory hypersensitivity, dysphoria and although rare, epileptic seizures and psychotic episodes⁴. The short acting benzodiazepines are particularly more notorious as they cause more withdrawal symptoms and cause failure of complete withdrawal⁵.

Developing countries like Pakistan are more likely to be affected by misuse and dependence of drugs like benzodiazepines due to unlicensed sale of such drugs⁶. Khuwaja AK et al found use of psychoactive drugs in the absence of a psychiatric illness to be considerably high⁷. In other developing countries, 57.2% misused the drugs in Thailand⁸, while a study from Chile found that 74% of

subjects obtained benzodiazepines over-the-counter⁹.

A study from Pakistan concluded that female gender and older age were associated with higher use of the drug. Only 36.5% had knowledge of its addictive potential¹⁰. Prevalence of benzodiazepine prescription among inpatients of a tertiary care hospital was found to be 21.2%¹¹. Data comparing the use of Benzodiazepines among developing and developed nations is scarce but a study found considerable difference in pattern of use between Chile and Canada¹². A study from Japan found higher prevalence of prescription by psychiatrists and they were less likely to prescribe short half life benzodiazepines than internists¹³.

To the best of our knowledge, no published study has been done in Pakistan exploring the pattern of benzodiazepine prescription specifically in internal medicine outpatient medical clinic.

METHODOLOGY

This retrospective (chart review), cross sectional study was undertaken at Shifa International Hospital, Islamabad, which is a tertiary care hospital in Pakistan. This study was approved by the Institution Review Board. The study was conducted from 1st January 2011 to 1st March 2011 and all patients who attended the Internal Medicine outpatient department during this time period were included.

The patients were identified through Hospital database. Data, collected after reviewing the patient's files from the Hospital Record Room was extracted using a questionnaire (data extraction sheet). It was filled for every patient prescribed a benzodiazepine. It contained the patients' demographics including age, gender and marital status. The indication for prescribing the medicine, the benzodiazepine prescribed and the type of benzodiazepine according to pharmacological half life. According to pharmacological guidelines, they were classified into long acting benzodiazepines (half life more than 24 hours), intermediate acting benzodiazepines (half life 10-24 hours) and short acting benzodiazepines (half life less than 10 hours)¹⁴. The length of prescription if mentioned was also analyzed.

Exclusion criteria included epileptic and seizure disorder patients, pre-anesthetic patients and patients from all departments other than Internal Medicine Outpatient Department.

All the data collected was tabulated and analyzed in SPSS (version 17.0). Descriptive statistics for every aspect of the research were obtained and analyzed.

RESULTS

Out of 1706 patients attending the internal medicine outpatient clinics, 189 patients were prescribed ben-

zodiazepines with the prevalence being 11.1%. Out of these patients 59.3% were females compared to males who were 40.7%. The mean age of the patients was 49.14 ± 16.7 years. Mean age of prescribed females was 49.3 ± 14.9 years while for males it was 48.9 ± 19.0 years. Married patients made up 86.2% of the total prescribed patient population. The most number of benzodiazepines was prescribed in the 50-59 years age group with females making 68.2% of this population. The characteristics of patients prescribed benzodiazepines are given in more detail in Table 1.

Regarding the pattern of prescription, Alprazolam was the most commonly prescribed benzodiazepine in 63.5% of cases. Bromazepam and Lorazepam followed, being prescribed 24.9% and 10.1% respectively. The least commonly prescribed drugs were Midazolam and Diazepam at 1.1% and 0.5% respectively. Intermediate acting benzodiazepines were prescribed in 98.4% of the cases followed by short acting drugs at 1.1% and long acting at 0.5%. The mean length of prescription was 26.7 days. Major causes of prescription were anxiety and depression at 47%. Sleep disorders were the reason in 19.2% of the cases while body aches and pains contributed to 16.3%. Patients who had no history of past benzodiazepine use were 75.1%. The patterns of benzodiazepine prescription are given in more detail in Table 2.

DISCUSSION

Rate of Benzodiazepine prescription in internal medicine department at SIH was found to be comparable with those of developing countries where prescription rates have considerably decreased^{15,16}. Studies done in Japan and France showed comparable prescription rates^{13,17}. A study done in inpatient departments in Pakistan also showed that the rates for inpatient departments were lower than most of the reported prevalence worldwide¹¹. This is encouraging as it seems to suggest that awareness about the drugs is increasing among physicians in the country. However, data specifically relating to prescription in outpatient medical department is scarce.

Majority of the prescribed patients were females (59.3%). This is consistent with studies done worldwide regarding benzodiazepine use^{11,13,15}. This difference can be because physicians are usually more "carefree" while prescribing drugs to females as compared to males¹⁸. Also, females are more prone to develop insomnia and anxiety as compared to males which may lead to frequent prescribing of this class of drugs^{19,20}. Proper prescribing criteria should be followed by physicians so that its use can be justified.

Elderly population particularly between the age of 50-59 years were more prone to be prescribed the

Table 1: Characteristics of patients prescribed benzodiazepines(n=189)

Variables	N	%				
Gender						
Male	77	40.7				
Female	112	59.3				
Marital Status						
Married	163	86.2				
Unmarried	26	13.8				
Age			Gender			
			Male (N)	%	Female(N)	%
15-29	25	13.2	17	68.0	8	32.0
30-39	30	15.9	9	36.0	21	70.0
40-49	34	18	10	29.4	24	70.6
50-59	44	23.3	14	31.8	30	68.2
60-69	30	15.9	16	53.3	14	46.7
70-79	21	11.1	9	42.9	12	57.1
80+	5	2.6	2	40.0	3	60.0

Table 2: Patterns of prescription of benzodiazepines

Type (%)	
Alprazolam	63.5
Bromazepam	24.9
Lorazepam	10.1
Midazolam	1.1
Diazepam	0.5
Duration of Action(%)	
Short Acting	1.1
Intermediate Acting	98.4
Long Acting	0.5
Length of prescription(days)	
Mean	26.7
Median	14
Mode	7
Indications for prescribing BDZ	
Anxiety and depression	47.0
Sleep disorder	19.2
Body aches and pains	16.3
Chronic illnesses	12.7
Others	4.8
Past History	
Yes	24.3
No	75.1

drugs. This is consistent with other data worldwide and it may be accounted for due to increased incidence of anxiety, depression and insomnia with age¹⁷. However benzodiazepines should be used with caution in the elderly as they have been shown to cause psychomotor impairment, excessive sedation, hip fractures and motor vehicle crashes²¹.

Intermediate acting agents were preferred by the physicians in the internal medicine department which was a different finding from a similar study done in Japan where short acting agents were preferred in the same department¹³. This a positive finding given the higher rate of withdrawal symptoms among users of short acting agents¹⁶.

The most common indication for benzodiazepine was anxiety and depression. A recent study in Norway suggests that there is increased risk of severe anxiety, depression and sleep disorders in patients who are prescribed benzodiazepines. Therefore the long term use of this drug in these conditions requires further discussion²². Vague body aches and pains were also a reason for prescription for a number of patients. Patients with medically unexplained pain are vulnerable to insomnia, psychotic disorders and poor quality of life²³. Benzodiazepines can prove to be helpful in this condition. Chronic illnesses were noted to be a reason for prescription of the drug. This could be because chronic illnesses have been shown to increase the risk of anxiety and insomnia²¹. However, long term use of benzodiazepine use for this purpose is controversial and should be weighed against the potential for addiction²⁴.

An alarming finding was that duration of prescription was mentioned in only 19% of the cases. The side effects of long term use particularly dependence is well known. This coupled with lack of awareness of its addictive potential among people of this country, it is mandatory that physicians should mention the duration of prescription⁴.

CONCLUSION

In conclusion, although the pattern of prescription of benzodiazepines in our study is similar to that of developed nations Further studies are needed to assess the situation throughout the country. Given the potential for abuse especially as the drugs are available over the counter, legislation should be in place to regulate the use of these drugs. Special care should be taken when prescribing these drugs to the elderly given the increased risk of side effects in this population. Awareness programs should be created to make the general population aware of the potential of misuse and abuse.

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CONTRIBUTORS

MNK and AA participated in planning of study, data analysis and manuscript writing. MH, SM, ST and AM helped in data management. AWY supervised the study. All authors contributed significantly to the final manuscript.