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Research Article

An observational study on prescription pattern of drugs in anxiety disorders

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Abstract
Background: *Prescription pattern analysis forms an important part of drug utilization studies, that are helpful in the rational prescribing of drugs and also to reduce medication errors. In our country, the available data on the prescription pattern of drugs in psychiatric disorders is very limited. Hence in our study, we focus on the prescribing pattern of drugs in anxiety disorders, which is one of the most widespread psychiatric disorders.*
Methodology: *A prospective observational study was conducted over a period of one year (January 2018 to December 2018) by analyzing the prescription forms of 51 patients who were diagnosed with anxiety disorders in psychiatry outpatient department. This study was initiated after getting approval from institutional human ethics committee.*
Results: *Out of 51 prescriptions analyzed, generalized anxiety disorder (33.33%) was the most common anxiety disorder followed by panic anxiety disorder (23.52%). Majority of the patients belong to the age group of 36- 45 years(37.25%). Major proportion of the participants were males (52.94%). By assessing the prescription pattern as per WHO/INRUD drug use indicators, the average number of drugs per prescription was found to be 2.60. Benzodiazepines and selective serotonin reuptake inhibitors were the most common drug groups used to treat anxiety disorders.*
Conclusion: *Prescription pattern of drugs for anxiety disorders were rational and according to WHO guidelines. The age and morbidity distribution pattern of the study participants are similar to the outcome of many previous studies.*
Keywords: *Anxiety disorder, Generalized anxiety disorder, Prescription pattern, Clonazepam.*

Introduction

Physicians are exposed to a large number of newer drugs that are claimed to be safe and efficacious. Though the clinical practice is based on the data provided by the pre marketing clinical trials, complementary data from post marketing

surveillance also plays a role in improving the drug therapy. Drug utilization study is one of the fundamental watchtowers of promoting rational use of medicines for treatment of various diseases, surveying the field of healthcare and leading to a greater understanding of the development that underlies it[25]. Rational use of a drug implies the prescription of a well documented drug at an optimal dose, for the right indication, with the correct information and at a reasonable price. Without adequate knowledge about the prescribing pattern, it is not possible to suggest measures to change the prescribing attitude of the practitioners.

Psychiatric disorders form an important public health priority and are the major causes of morbidity[23]. Of the top ten health conditions contributing to the Disability Adjusted Life Years (DALYs), four are psychiatric disorders[24]. Anxiety disorders are often chronic and associated with significant morbidity. It is characterized by diffuse, unpleasant, vague sense of apprehension associated with autonomic symptoms like headache, perspiration, palpitation, restlessness, tightness in the chest, mild abdominal discomfort. The national co morbidity study reported that one of four persons met the diagnostic criteria for atleast one anxiety disorder and that there is a 12 month prevalence rate of 17.7 %[26.] Anxiety disorders includes a family of related mental disorders such as generalized anxiety disorder, panic disorder, agoraphobia, phobic anxiety disorder, mixed anxiety and depressive disorder. Drugs used in the management of such disorders includes benzodiazepines, selective serotonin reuptake inhibitors, serotonin norepinephrine reuptake inhibitors and beta blockers. Our study focuses on analyzing the prescription pattern in patients diagnosed with anxiety disorders in psychiatry outpatient department in a tertiary care hospital.

Materials and Methods

Study Design: Prospective observational study on prescribing pattern of drugs in anxiety disorders.

Study Site: The study was conducted in psychiatric outpatient department, Rajah Muthiah Medical College and Hospital, a tertiary care teaching hospital under Annamalai University, Chidambaram, Tamilnadu, India.

Study Duration: One year (January 2018 to December 2018)

Study Population: 80 prescriptions were collected, in which 51 prescriptions with the diagnosis of anxiety disorder was analyzed.

Selection Criteria

Inclusion Criteria: Both male and female patients in the age group of 15- 55 years with the diagnosis of anxiety disorder.

Exclusion Criteria

1. Patients who could not comply with the study such as mental retardation or severe psychiatric illness.
2. Patients who are not willing to participate in the study.
3. Patients with severe physical illness.

Ethical Considerations: Institutional human ethics committee approval was obtained before the commencement of study.

Study Procedure: A total of 80 prescriptions were collected, in which 51 prescriptions with the diagnosis of anxiety disorder was analyzed. Patients were explained in detail about the study procedure and informed written consent (both English and Tamil language) was obtained.

Data Analysis

1. Patient details like name, age, gender, outpatient number, education, occupation and income were obtained.
2. Prescription details like diagnosis, type of medication, its dosing schedule and duration were obtained.
3. The collected data were analyzed according to WHO/INRUD drug use indicators

Statistical Methods: Descriptive statistical analysis was done. Quantitative data were expressed in percentage and proportions.

Results

Table 1: Age wise distribution pattern

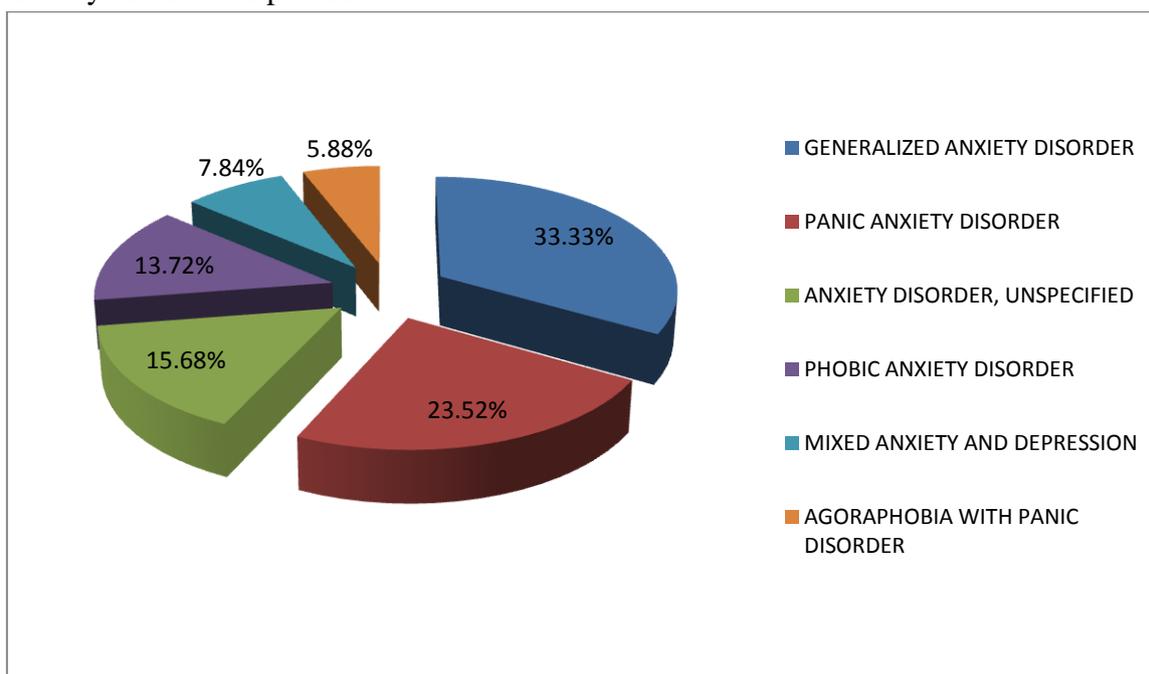| Diagnosis	Age(in years)				Total
	15-25	**26-35**	**36-45**	**46-55**	
Generalized anxiety disorder	3	3	6	5	17
Agoraphobia with panic disorder	1	0	0	2	3
Panic anxiety disorder	1	4	7	0	12
Phobic anxiety disorder	5	1	1	0	7
Mixed anxiety and depression	1	1	0	2	4
Anxiety disorder, unspecified	0	2	5	1	8
Total	11(21.5%)	11(21.5%)	19(37.25%)	10(19.6%)	51

Majority of the patients belong to the age group of 36- 45 years(37.25%).

Table 2: Gender wise distribution

Diagnosis	Male	Female	Total
Generalized anxiety disorder	9	8	17
Agoraphobia with panic disorder	2	1	3
Panic anxiety disorder	7	5	12
Phobic anxiety disorder	4	3	7
Mixed anxiety and depression	0	4	4
Anxiety disorder, unspecified	5	3	8
Total	27(52.94%)	24(47.06%)	51

Among the study participants, 52.94% were males and 47.06% were females.
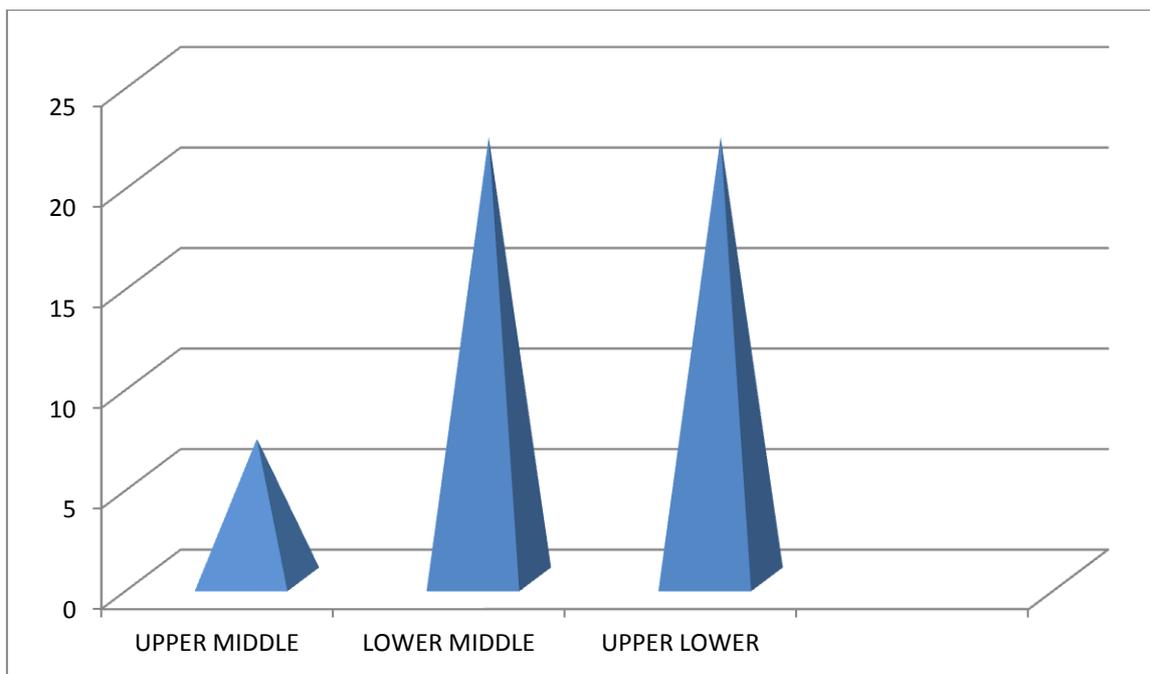
Fig 1: Morbidity distribution pattern

Out of 51 prescriptions analyzed, 17 were of the diagnosis generalized anxiety disorder, 12 were panic anxiety disorder, 8 were anxiety disorder unspecified, 7 were phobic anxiety disorder, 4 were mixed anxiety and depression and 3 belong to agoraphobia with panic disorder.

Table 3: Assessment of prescription pattern as per WHO/INRUD drug use indicators

S.No	Drug use indicators	Result
1.	Average number of drugs per prescription	2.60
2.	Average number of anti anxiety drugs per prescription	1.25
3.	Average number of anti depressants per prescription	0.88
4.	Percentage of drugs prescribed by generic names	71.54%
5.	Percentage of prescriptions containing FDC	37.2%
6.	Percentage of drugs prescribed from the Tamilnadu essential drug list	65.41%
7.	Percentage of drugs dispensed from hospital drug store at free of cost	31%
8.	Percentage of drugs purchased by patients at cost	69%

Fig 2: Socio economic status

According to Modified Kuppuswamy scale (January 2018), most of the patients belong to lower middle (43.13%) and upper lower class (43.13%).
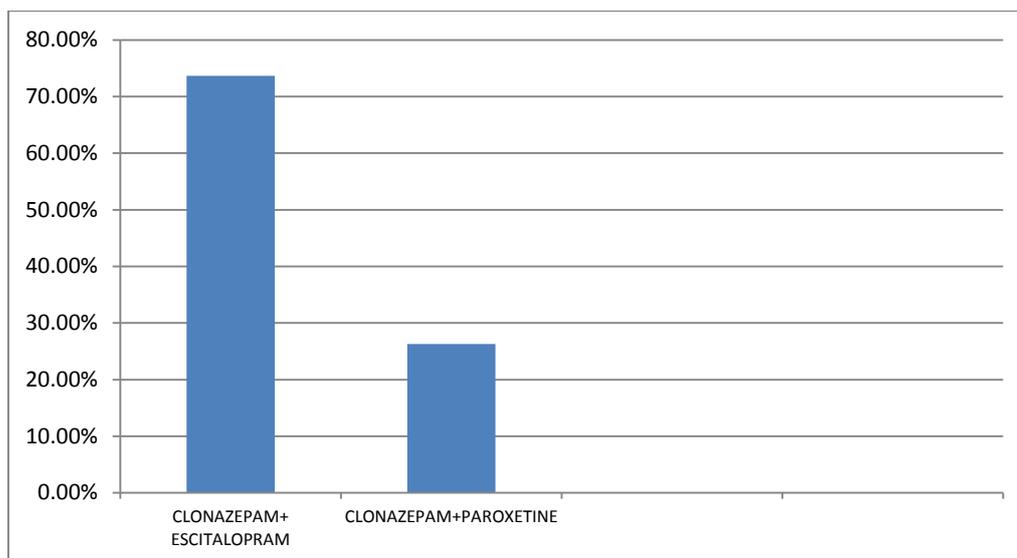
Table 4: Prescribed drug groups

Drug Class	Drugs	Prescription	
		No	%
Anti anxiety	Clonazepam	42	82.35%
	Diazepam	4	7.84%
	Alprazolam	4	7.84%
	Lorazepam	1	1.96%
	Propranolol	13	25.49%
Anti depressants	Escitalopram	35	68.62%
	Sertraline	3	5.88%
	Paroxetine	5	9.80%
	Fluoxetine	2	3.92%
Vitamin supplements	Multivitamin tablets	10	19.60%
H2 receptor blockers	Ranitidine	14	27.45%

Anxiety disorders were treated with anti anxiety drugs like benzodiazepines and beta blockers. Among benzodiazepines, clonazepam (82.35%) was the most commonly prescribed drug. Along with them other drugs that were co prescribed are anti depressants like escitalopram, paroxetine, fluoxetine and sertraline. H2 receptor blocker ranitidine was given in 27.45% of patients and vitamin supplements were given in 19.60% of patients.
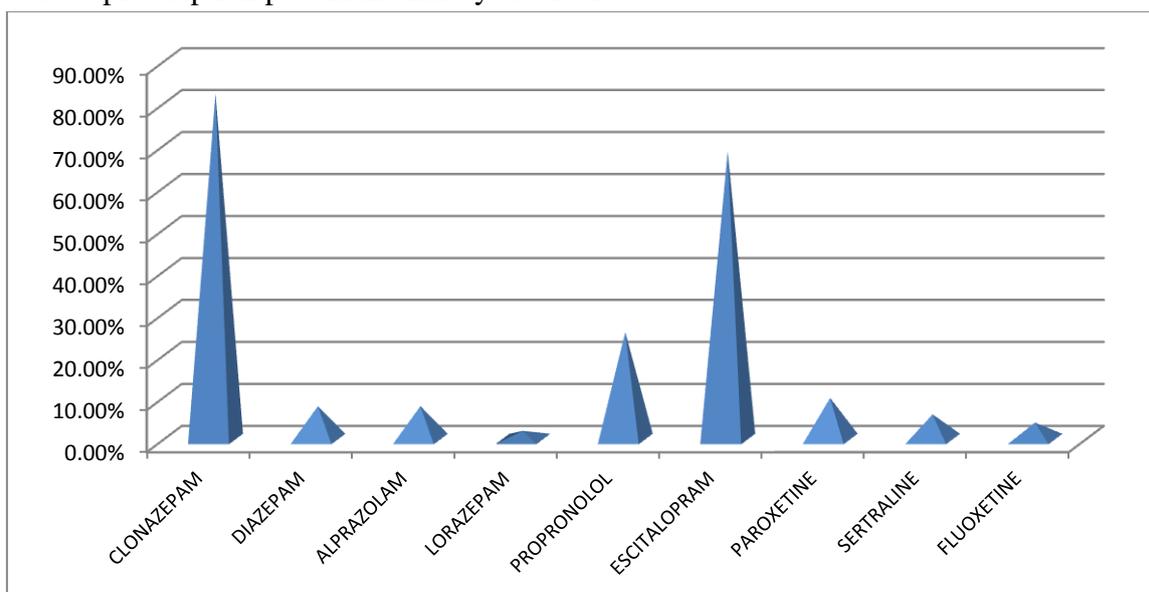
Fig 3: Fixed dose combination

Out of 51 prescriptions, fixed dose combination was given in 19 patients, in which clonazepam with escitalopram combination was given in 73.68% whereas clonazepam with paroxetine combination was given in 26.31% patients.

Fig 4: Observed prescription pattern in anxiety disorders

In anxiety disorders, benzodiazepines were the most frequently prescribed drugs in which clonazepam was given in 82.35%, diazepam and alprazolam in 7.84% each. Anti depressants are co prescribed with anxiolytics in anxiety disorders, in which escitalopram was prescribed in 68.62%, paroxetine in 9.80%, sertraline in 5.88% and fluoxetine in 3.92%. Beta blockers like propranolol was also given in 25.49% of patients.

Discussion

The burden of psychiatric illness and behavioral disorders in our society is huge. But still it is grossly underrepresented in public health statistics. Among the psychiatric disorders, anxiety is a chronic disorder that leads to decreased work productivity.

Drug utilization research provides a baseline reference point about the

effects of various interventions on prescribing about the drugs and has the principle aim of facilitating the rational use of drugs.

Socio Demographic Profile

Among the patients diagnosed with anxiety disorder, majority of them were in the age group of 36 – 45 years (37.25%), a finding similar to other studies[1,2]. In our study, males (52.94%) outnumbered females (47.06%), which was similar to the studies done by Dutta et al[2,10], but contrast to studies conducted by Patrick et al[1] and Lewinsohn et al[3]. According to modified kuppuswamy scale (January 2018), most of the patients in our study belong to lower middle and upper lower class, a finding that correlates with Ansseau M et al[4] and others[5,6].

Morbidity Distribution Pattern

Out of 51 patients, generalized anxiety disorder cases were predominant 17(33.33%), followed by panic anxiety disorder 12(23.52%) and anxiety disorder unspecified 8(15.68%). In a study done by Swathi et al[7], generalized anxiety disorder was the most common diagnosis. But this is in contrast with the studies done in United States and Netherland by Kessler R C et al[8] and Bijl R V et al[9] respectively, which stated that phobic anxiety disorders were the most common diagnosis.

Pharmacotherapy of Anxiety Disorders

In our study, anti anxiety drugs were the most commonly prescribed drug groups, followed by anti depressants. Similar observations were found in the previous studies[2,10,11]. Anxiolytics proved to be efficacious in a wide range of psychiatric disorders with short term use. However on chronic use, the adverse effects outweighed the benefits. But in a study done by Swathi et al[7], anti depressants were used most commonly than anxiolytics.

Among anxiolytics, benzodiazepines were the most commonly prescribed class of drugs, a finding that correlates with the studies[11,12]. Benzodiazepines are quite safe medications. In elderly, they can lead to falls. Adverse effects seen on chronic use are addiction potential, memory impairment, dependence and tolerance which outweigh the benefits.

Among benzodiazepines, clonazepam was the most commonly prescribed drug which was given in 82.35% of patients, followed by diazepam and alprazolam. Similar findings were observed in Vandhana et al[13] and Rode SB et al[14]. Lorazepam (1.96%) is the least commonly prescribed benzodiazepine, a finding that correlates with the previous study[13]. Besides benzodiazepines, propranolol was also used as an anxiolytic in 25.49% of patients, a finding similar to previous study[15].

Among anti depressants, escitalopram was the frequently prescribed drug, followed by paroxetine. In studies done by Piparva et al[16] and Zito JM et al[17], similar findings were observed. Fluoxetine is the least commonly prescribed anti depressant in our study, which is in contrast to the study conducted by vandhana et al[13,] where fluoxetine was prescribed for 24.47% of patients. SSRIs are generally safe at higher doses and free of sedative effects.

Other drugs that were co prescribed are vitamin supplements and anti ulcer drugs. Multi vitamin tablets were given in 19.60% of patients. Among anti ulcer drugs, H2 receptor blockers like ranitidine was given in 27.45% of subjects, which was in contrast to the study done by Vandhana et al[13], in which proton pump inhibitors were most commonly prescribed .

Fixed Dose Combination (FDC)

There is an increasing concern about the number of irrational FDCs in India, which leads to unnecessary financial burden. They also increase the occurence of adverse drug reactions that reduces the quality of life. Combining two or more drugs in a single formulation causes changes in its efficacy, safety, and bioavailability profile. In our study, FDC drugs were given in 37.25% of patients. In which the most commonly used combination was clonazepam with escitalopram in 73.68% of subjects, a finding similar to the study done by Yadav et al[18]. A combination of

escitazolam+clonazepam has been approved by the DCGI (Drug Controller General of India).[27]

Observed prescription pattern in anxiety disorder

Anxiolytics are the mainstay of treatment in anxiety disorders followed by anti depressants. Among anxiolytics, clonazepam was most commonly prescribed, which was similar to various other studies[2,19]. This suggests a trend towards the use of short acting benzodiazepines, as it is seen that continuous and prolonged use of long acting benzodiazepines has resulted in dependence and may have withdrawal symptoms when the dosage of these drugs are reduced or treatment is stopped[21,22] In a study done by Banerjee et al[20], alprazolam was the most commonly used benzodiazepine which was contrast to our study.

Conclusion

From our study we conclude that the prescription pattern of drugs of the study participants were according to the standard guidelines.

Conflict of Interest: The authors declare they have no conflict of interest.

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Abbreviations

WHO – World Health Organization

INRUD – International Network For The Rational Use Of Drugs

FDC – Fixed Dose Combination

DCGI – Drug Controller General of India