First prescription analysis of anxiolytics in a tertiary care center: a pilot study

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ABSTRACT

Background: There is limited evidence in Indian literature regarding the prescribing pattern of anxiolytics. Hence a drug utilization study was designed to assess the prescription trends of antxiolytics in our tertiary care centre.
Methods: The study population comprised of all newly diagnosed patients of anxiety attending the tertiary care hospital. This was a part of a study which included all patients with psychiatric disorders.
Results: Clonazepam 151(72.24%) was the most commonly prescribed anti-anxiety drug followed by lorazepam 40(19.14%), diazepam 13(6.22%), andetizolam 5(2.4%) was the least prescribed anti-anxiety.
Conclusions: The published evidences confirm that Cloanazepam was the preferred anxiolytic. This suggests that there is trend of using shorter acting benzodiazepines.

Keywords: Prescription Analysis, Anxiety, Anxiolytics

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INTRODUCTION AND BACKGROUND

Anxiety is an adaptive response, helping to increase survival by averting possibly unsafe events [1]. It is essential to differentiate between anxiety and fear. Fear is a reaction generated by the occurrence of an impending, tangible danger; however anxiety is about the expectation of possible harm in the future [2]. Whereas anxiety is an essential tool for human intellect, anxiety disorder defines the uncontrolled, disproportionate persistence of anxious responses to an extent that the person is unable to live a normal functioning life.

The lifetime prevalence of anxiety disorders is estimated to be from 11.3% to 14.7% worldwide [3]. The prevalence of anxiety disorders differs by culture, with rates in Euro/Anglo cultures almost double what they are in African cultures [4]. Prevalence rates differ too by gender, with women having a statistically greater possibility than men of developing an anxiety disorder [3].

Anxiety disorders, comprising panic disorder with or without agoraphobia, generalized anxiety disorder, social anxiety disorder, specific phobias, and separation anxiety disorder, are the most prevalent mental disorders and are associated with enormous health care costs and a high burden of disease. As per large population-based surveys, approximately 33.7% of the population is affected by an anxiety disorder during their lifetime. Significant under recognition and under treatment of these disorders have been established. There is no indication that the prevalence rates of anxiety disorders have altered in the past years. In cross-cultural evaluations, prevalence rates are extremely inconstant. It is possible that this heterogeneity is because of differences in methodology than to cultural influences. [5]

Prevalence of anxiety disorders in India

There have been three major meta-analyses of psychiatric epidemiological studies in India. [6-8] Reddy and Chandrashekhar, in their meta-analysis of 13 studies with a sample size of 33,572 subjects, found have estimated prevalence rate of 4.2% and 5.8% respectively for phobia and GAD. [9,6] Urban communities had higher prevalence rates (35.7% vs13.9%; $P<0.01$) than rural communities.[6]
A meta-analysis, by Ganguli in 2000, analyzed 15 epidemiological studies. Anxiety neurosis was reported to be prevalent in 16.5 per thousand individuals.[7] However, in this meta-analysis, anxiety neurosis was covered as a broad category without specific mention of the specific disorders. Another meta-analysis, by Madhav, included 10 studies, and reported a similar prevalence for anxiety neurosis (18.5 per thousand population).[8] These findings appear comparable to those from studies across the world, where current prevalence estimates across 44 countries varied from 0.9% and 28.3%, with the global prevalence estimated to be 7.3%.[10]

Due to the early age of onset, chronicity, and high rate of comorbidity linked with anxiety disorders, timely mediations could avoid the development of several secondary disorders. Additionally, the high social and economic cost imposed by anxiety disorders, the development of effective treatments is vital.

The revision of the 2005 British Association for Psychopharmacology guidelines for the evidence-based pharmacological treatment of anxiety disorders provides an update on key steps in diagnosis and clinical management, including recognition, acute treatment, longer-term treatment, combination treatment, and further approaches for patients who have not responded to first-line interventions. The guidelines are built on existing evidence, were created following widespread feedback from participants, and are presented as recommendations to support clinical decision-making in primary, secondary and tertiary medical care. They could likewise function as a source of information for patients, their carers, and medicines management and formulary committees.[11]

Despite rapid advancement in the field of psychopharmacology, the researches in the field of anti-anxiety and antidepressant drugs are dismally low from India.[12] The prescription pattern on usage of anxiolytics is lacking. Considering this, the present study was aimed to evaluate the drug utilization pattern of antianxiety drugs in Psychiatry Department of a tertiary care hospital.

OBJECTIVES

1. To delineate preferred classes of drugs used and their utilization pattern in patients newly diagnosed with anxiety disorder.
2. To find differences, between the preferred and ideal prescribing pattern of anxiolytics in Indian context.
3. To analyze the drug utilization pattern observed and reason(s) for deviation(s).

MATERIALS AND METHODS

Source of data

Study subjects: The study population comprised of all newly diagnosed patients of anxiety disorders attending the tertiary care hospital. This was a part of a study which included all patients with psychiatric disorders.

Inclusion criteria:
1. Patients of any age group and of either sex attending the Psychiatry OPD and consenting to participate in the study.
2. Newly diagnosed cases of anxity disorder whose prescription contained at least one anxiolytic drug.

Exclusion criteria:
1. Patient's whose psychiatric diagnosis was not definite.
2. Non consenting patient/relative.
3. Inadequate data (age, marital status, registration number etc).
4. Long-standing case of psychiatric disorder.
5. Newly diagnosed case whose prescription did not contain anxiolytic medication.
6. Prescriptions with same OPD numbers

Study area: Psychiatry OPD, SDM College of Medical Sciences and Hospital

Method of data collection
Study design: A hospital based cross sectional study was conducted.
Sample size: 209 (out of 437)
Sampling procedure: Data was collected daily by going to the psychiatry OPD.

Sampling Instrument: A questionnaire based study was conducted in the psychiatry OPD. First prescription written by the Psychiatrist for a newly diagnosed patient of anxiety disorder and containing at least one anxiolytic medication irrespective of his/her age and gender were included.

Present study:
The questionnaire contained patients demographics like age, gender (male/female), marital status (Married/ unmarried/ divorced/ separated), religion (Hindu/ Muslim/ Christian/Others), socio-economic status according to Modified B.G. Prasad's socio-economic classification and registration number. Patient's diagnosis was done by the psychiatrist using the ICD-10 criteria. Prescription details like date, number of drugs prescribed, names of individual drugs (generic/branded), whether the prescribed drug(s) was obtained from the hospital pharmacy. Dose of the drug, dosage form, dosing schedule and duration of treatment were noted down in the questionnaire. Costs of the drugs were calculated depending on the availability of the drug from the hospital drug store. Cost of the drugs prescribed from outside pharmacies was calculated from the National Drug Index.

Data analysis: Descriptive statistics were applied and data was assessed using proportions and percentages. Data entry was done using Microsoft Excel and analysis was carried out with the help of Statistical Package For Social Sciences – 20.0 (SPSS Statistics -20.0). Cost analysis was carried out.

RESULTS

It was observed that of all the psychiatric disorders patients the percentages of male and female participants were 62% and 38% respectively. Majority of the patients comprised in the age group of 21 – 30 years (39%) followed by 31 – 40 years (24%). 11% were illiterate, 10% had received primary education, 25% high school, 21% secondary education, 32% participants were graduates and 1% postgraduates. Distribution of study participants as per their occupation demonstrated that 31% of them belonged to agriculture profession followed by 21% who were involved in business, least being labourers (3%). In the present study 71% participants were married, 27% unmarried and 2% participants were divorced. As per the Modified B. G. Prasad Classification 59% study participants belonged to class IV socio-economic status, 24% to class III socio-economic status, 10% class II and 7% class I.

Of 209 prescriptions, Clonazepam 151(72.24%) was the most commonly prescribed anti-anxiety drug followed by lorazepam 40 (19.14%) and diazepam 13 (6.22%) etizolam 5(2.4%) was the least prescribed anti-anxiety. (Table 1; Figure 1) 19 prescriptions contained FDC's. Clonazepam 0.25mg+ escitalopram 10mgwas the most common FDC used.

DISCUSSION

In the present study it was seen that among the anxiolytics use clonazepam (72.24%) was the most commonly used drug followed by lorazepam (19.14%), diazepam (6.22%) and etizolam (2.4%). A study conducted in Burdwan suggests that among the anxiolytics prescribed, clonazepam (83.12%) was the most commonly used drug followed by lorazepam (14.53%) and diazepam (1.3%).[14] Another similar study conducted in Nepal suggested that among the anxiolytics used, the commonest drug used was alprazolam (50%), followed by clonazepam (31.6%), chlordiazepoxide (15.8%) and lorazepam (2.8%).[15] This suggests that there is trend of using shorter acting benzodiazepines, since use of longer acting drugs lead to dependence and may also have withdrawal symptoms when the dose of these drugs are reduced or the treatment is terminated.
In the present study a total of 19 FDCs were used. Combination of clonazepam 0.25mg and escitalopram 10mg (52.63%) was most commonly used followed by combination of clonazepam 0.5mg +escitalopram 10mg (36.84%).

In a study conducted in Chattisgarh, it was seen that 71% of the prescriptions contained FDCs; maximum being the combination of risperidone and trihexyphenidyl.[16]

When we compared the brand and generic names in the present study we found that the percentage of prescriptions with brand names were 76.44% and generic names were 23.56%. In study conducted by *Mukherjee et al* it was seen that the percentage of prescriptions with brand names were 17% and generic names were 83%. [17]

Most of the patients who visited our hospital OPD belong to Class IV socio- economic status. Generic drug prescription reduces the treatment cost of the patient and hence reducing the burden. Hence it is advisable to shift the drug prescribing to generic drugs so that it would be cost effective to the patients. Conventionally treatment of anxiety comprises of psychotherapy, pharmacotherapy, or a combination of both. SSRIs (fluoxetine, sertraline, escitalopram, and citalopram) are effective for all anxiety disorders and considered first-line treatment.

SNRIs (venlafaxine and duloxetine) are considered as effective as SSRIs and first-line treatment, particularly for generalized anxiety disorder (GAD). Tricyclic antidepressants (amitriptyline, imipramine, and nortriptyline) are beneficial in the treatment of anxiety disorders but cause significant adverse effects.

Benzodiazepines (alprazolam, clonazepam, diazepam, and lorazepam) are utilized in short-term management of anxiety. They have a quick onset of action and provides benefit within 30 minutes to an hour. They induce relaxation and decreases muscular tension and other manifestations of anxiety. Since the have a rapid onset, they are beneficial for panic attacks. Chronic use could require higher doses to obtain the same effect, leading to tolerance and dependence.

Buspirone is a mild tranquilizer that is slow acting as compared to benzodiazepines and takes about 2 weeks to start working. However, it is less sedating, without addicting potential and with minimal withdrawal effects. It is useful in GAD. Beta-blockers (propranolol and atenolol) reduce the physical manifestations associated with anxiety. They are beneficial for phobias, specifically for social phobia.

Pharmacological treatment of acute anxiety still relies on benzodiazepines, while chronic anxiety disorders and depression are treated with different antidepressants, according to specific indications. [18]

The recommendations, established by the World Federation of Societies of Biological Psychiatry (WFSBP) Task Force for the Pharmacological Treatment of Anxiety, Obsessive-Compulsive and Post-traumatic Stress Disorders, a consensus panel of 30 international experts, are now based on 510 published randomized, placebo- or comparator-controlled clinical studies (RCTs) and 130 open studies and case reports.

First-line treatments for these disorders are selective serotonin reuptake inhibitors (SSRIs), serotonin-noradrenaline reuptake inhibitors (SNRIs) and the calcium channel modulator pregabalin. Tricyclic antidepressants (TCAs) are likewise effIcacious for some disorders, however several are less well tolerated than the SSRIs/SNRIs. In treatment-resistant cases, benzodiazepines could be used when the patient does not have a history of substance abuse disorders.

While these guidelines emphasize on medications, non-pharmacological should also be considered. Cognitive behavioural therapy (CBT) and other modifications of behaviour therapy too should be adequately examined in controlled studies in patients with anxiety disorders, OCD, and PTSD to support them being recommended either alone or in combination with the above medicines.[19]

CONCLUSION

The prescribing pattern of anxiolytics was as per the treatment guidelines i.e Clonazepam, signifying a inclination towards the practice of shorter acting Benzodiazepines. Since it has been observed that long-term use of longer acting Benzodiazepines has led to the development of tolerance and dependence and could lead to withdrawal symptoms on dosage reduction or treatment discontinuation.

Limitations: This study was a pilot study which included only 209 prescriptions for analysis. Additionally, this was only a unicentric study. A large-scale multicentric study would be the future option to conclusively analyse the prescription pattern.
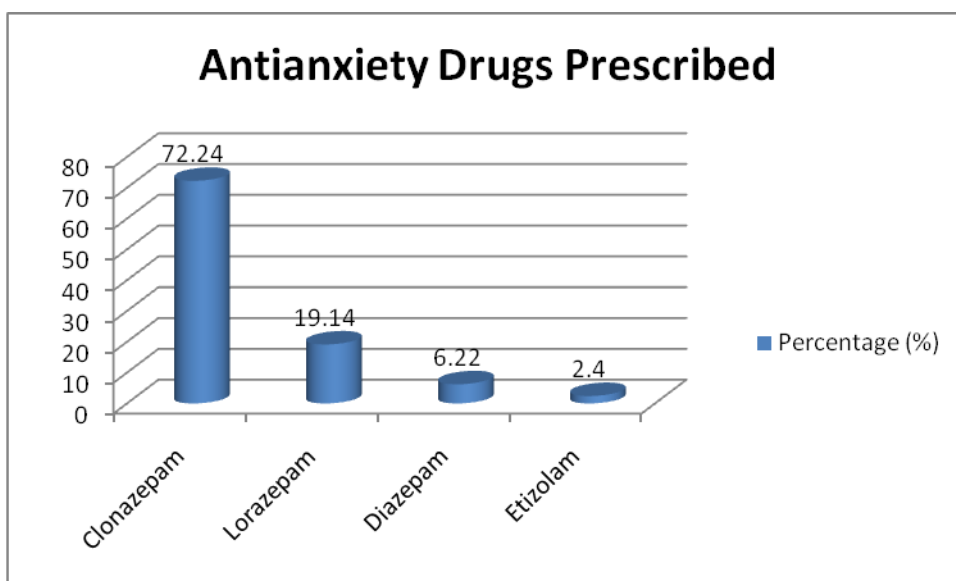
Table 1:Anti-anxiety drugs Prescribed to Study Participants

Anti-anxiety Drugs	Frequency (n)	Percentage(%)
Clonazepam	151	72.24
Lorazepam	40	19.14
Diazepam	13	6.22
Etizolam	5	2.4
Total	209	100.00

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