ORIGINAL RESEARCH PAPER

Pharmacology

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Prescription pattern study of antidepressants in patients with major depressive disorder (MDD) at a tertiary care centre.

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ABSTRACT

Aim: To study prescription pattern of antidepressants in new patients of major depressive disorder in psychiatry OPD of a tertiary care hospital. **Methodology:** Data of 200 MDD patients (form 1st June 2014 to 31st May 2015; diagnosed with DSM-V) was extracted from their first prescription and analyzed. Results: Escitalopram was the most commonly prescribed antidepressant; followed by fluoxetine, amitriptyline and mirtazapine. One third patients were prescribed benzodiazepines, clonazepam being the most common, followed by lorazepam. **Conclusion:** Escitalopram, was the most common antidepressant while clonazepam was most common benzodiazepine prescribed in patients with MDD which is according to the current treatment guidelines.

Introduction

Depression is a major global burden in the recent years with many victims becoming more vulnerable to major social and environmental factors with increased risk of suicide. According to the World Health Organization (WHO) and the World Bank, depression is the fourth most disabling disease globally.[1] Overall prevalence of depression in India is 15.1% and is higher in females.[2]

Antidepressant drugs are effective in the treatment of depression which primarily act by modulating the function of the neurotransmitters serotonin and/or norepinephrine and/or dopamine.[3] The treatment of depression dramatically changed with the introduction of monoamine oxidase inhibitors (MAOIs) and the tricyclic antidepressants (TCAs).[4] Selective serotonin reuptake inhibitors (SSRIs) are now the initial choice as antidepressants being safer, better tolerated and are less likely to be discontinued due to side effects.[5] Numerous factors influence the choice of antidepressant drug prescribed by physicians.[6] Current practice guidelines recommend that physicians should choose an antidepressant drug based on past experience of treatment, side effects, patient preference and cost.[7] Number of antidepressants available in India has increased and almost all the antidepressants are now available in India at an affordable price.[8]

Prescribing pattern study is an important tool of drug utilization studies, which reflects the use of drugs in large number of people with the purpose of supporting the rational and cost-effective use of drugs in the population.[9] Changes over time in terms of recommended guidelines and innovation in drug formulations have resulted in modification to the prescription patterns of antidepressant drugs. Therefore, the present study was carried out to assess the prescription pattern of antidepressants in the department of psychiatry, of a tertiary care hospital; to observe and evaluate the prescribing attitude of psychiatrists with the aim to provide rational drug therapy.

AIMS

Primary objective:

To assess the prescription pattern of antidepressants in diagnosed patients of major depressive disorder (MDD) in psychiatry OPD of a tertiary care hospital.

Secondary objective:

1. To find out
a) Percentage of antidepressants prescribed by their generic name and
b) Percentage of antidepressants prescribed from hospital formulary.
2. To find other concomitant drugs prescribed.

Methodology

The study was a cross sectional, single center, prospective, observational study conducted in the psychiatry outpatient department of a tertiary care hospital. The study was conducted over a period of 12 months from 1st June 2014 to 31st May 2015 after the approval of the institutional ethics committee.

All patients in Psychiatry outpatient department were screened by observing their prescriptions and those meeting the inclusion criteria were offered to participate in the study.

Inclusion criteria:

1. Patients newly diagnosed for major depressive disorder by psychiatrist and have been prescribed one or more antidepressants.
2. Adult Patients of age group 18-65 years.
3. Patients giving written informed consent.

Exclusion criteria:

1. Patient or LAR not willing to give written informed consent.
2. Patients with diagnosis of severe depression with psychotic symptoms, comorbid psychiatric disorders like OCD etc., substance abuse disorders including heavy smoking, organic brain syndromes.
3. Any other disorder like migraine and neuropathic pain where antidepressants are prescribed.

The patients or legally acceptable representatives were informed their role in the study in the language they understood and were enrolled only after they gave written, informed and valid consent after reading the patient information sheet and by signing the informed consent form.

Data was extracted from the first prescription of participants and recorded using a Case Record Form

a) Enrollment data was collected as follows:

1. General particulars included were patient initials, sex and age.
2. The patient symptomatology and diagnosis - definitive or presumptive
3. Drug Details noted were dose, route, brand name or generic name and availability on hospital formulary.

Parameters studied:

1) Demographic parameters of patients including sex and age.
2) Type of antidepressant drugs most commonly prescribed.
3) Percentage of antidepressant drugs prescribed by generic name.
4) Doses of each prescribed antidepressant drug.

5) Concomitant drugs prescribed.

Results

200 patients were enrolled in the study. The observations made during the twelve months study period are as follows.

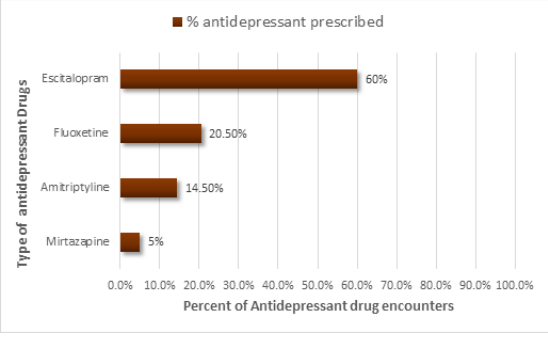
Demographic details of the patients

a) Gender:
Out of the 200 patients encountered during the study period, 38% (76) were males and 62% were females (124). Female to male ratio in our study was 1.6:1.

b) Age of the patients
The mean age found was 38.81 years with a range of 18 to 65 years. Of the 200 participants, 61% patients (122) belonged to age group of 31 to 40 years, followed by 31% (62) from the age group of 41 to 50 years and 5.5% (11) from 20 to 30 years. Least number of participants were from the age group of 51 to 60 years i.e. 2.5% (5).

Pattern of drug use
a) Type of antidepressants prescribed
Escitalopram was the most commonly prescribed antidepressant, comprising 60% (120) of the total prescriptions, followed by fluoxetine 20.5% (41). Selective serotonin reuptake inhibitors (SSRIs) formed 80.5% of all the prescriptions. Tricyclic antidepressant amitriptyline formed 14.5% (29) while remaining were prescribed mirtazapine 5% (10).

Figure 1: Type of antidepressants prescribed (n=200)



b) Doses prescribed for each antidepressants drug:
Recommended doses of antidepressant drugs were given in 100% of encounters.

Table 1: Doses prescribed for each antidepressant drug (n=200)

	Antidepressant prescribed	Doses given (encounter no.)	Recommended doses/dose range 36	% drugs given by recommended dose
SSRI	Escitalopram	5 mg BD(120)	10-20 mg/day	100 %
	Fluoxetine	20 mg OD(41)	20-40 mg/day	100 %
TCA	Amitriptyline	25mg HS(29)	25-50mg/day	100 %
NaSSA	Mirtazapine	15 mg OD(10)	15-30 mg/day	100 %

SSRI- Selective serotonin reuptake inhibitors, TCA- Tricyclic antidepressants, NaSSA- Noradrenergic and specific serotonergic antidepressant

c) Prescription of antidepressants by brand/ generic name
79% drugs were prescribed by generic names and 21% were prescribed by brand names.

d) Number of antidepressants prescribed per patient
Total 267 drugs were prescribed in 200 prescriptions of which 200 were antidepressants. Average of 1.33 drugs and 1 antidepressant per prescription was noted.

e) Prescription form hospital formulary
All drugs except Mirtazapine which made 5% of the total prescription were prescribed from hospital drug formulary.

f) Other drugs prescribed.
Nearly one-third of the participants (N=67; 33.5%) were prescribed a benzodiazepine, with clonazepam being the most preferred agent, followed by lorazepam.

Discussion :

Majority (62%) of the patients in our study were females. Female to male ratio in our study was 1.6:1. This correlates with the findings of the studies conducted by Ray S, Chogtu B in Manipal and Mishra S et al in Bhubaneswar that show more female preponderance.[10,11] In searching for a reason behind female predominance, most attention has been focused on, hormonal, environmental, psychological, and social factors.[12] The hypothalamic—pituitary—adrenal axis seems to be more reactive to stress in females than in males.

Psychosocial events such as role stress, victimization, sex-specific socialization, internalization, disadvantaged social status, are more in Indian females.[13] Depression is also an important consequence of domestic violence, which is common in one-quarter and over one-half of Indian women.[14]

The mean age of patients studied was 38.81 years with a range of 18 to 65 years. Our results correlated with the study conducted by Grover S et al in which the mean age was found to be 38.83 years.8 66.5% patients belonged to age group of 20 to 40 years. Similar results were found in study conducted in Nepal by Banerjee I et al in which 65.8% of the patients with Depression were below 40 years of age.[15] This is possibly due to multiple stressors of income and childrearing in this developmental period.[16]

Our study results suggested that escitalopram is the most commonly prescribed antidepressant. When compared with the available studies, similar results were reported in the recent study by Ray S et al.[10] Recent studies have shown that escitalopram has the potential to deliver superior benefits in terms of efficacy and cost compared to traditional SSRI.[17] This evidence clearly supports the use of escitalopram as a legitimate first-line treatment for MDD.[18]

TCAs formed 14.5% of all the prescriptions. However when compared with that reported by Chakrabarti S and Kulhar from Chandigarh (2000), there was a reduction in the prescription of TCAs from 57% to 14.5%.[19] This may be due to availability of newer drugs like SSRIs having lesser adverse effects and better tolerability.

Mirtazapine formed 5% of the total prescriptions. A study from Chandigarh by Grover S et al had similar findings.[8] Increased appetite and bodyweight are the events that have been reported to be more common with mirtazapine,[20] Mirtazapine is widely considered a first-line option for the treatment of patients with MDD in patients with poor appetite and substantial weight loss.[21] In our study all the patients prescribed mirtazapine gave a history of lack of appetite.

Prescribing under a generic name is considered economical and rational, in our study majority of the antidepressants were prescribed by generic names. Our findings are comparable with a similar report by Ghosh S from India and Sabahi A et al from Iran showing 99% and 85% drugs prescribed by generic names respectively.[22,23] Generic name avoids the confusion which may be caused by similar brand names. Generic medicines are equivalent to the branded ones but are cheaper. In the present study we have found that 100% of the antidepressants were prescribed according to the standard recommended doses of the drugs. Similar results were found in a study by Ghosh S et al where all

antidepressants were within the recommended dose range.[22]

Nearly one-third of subjects (N=67; 33.5%) were prescribed a benzodiazepine, with clonazepam and lorazepam being the most preferred agents. Similar findings were observed by other investigators such as Grover S et al and Mohanta G et al, in India and Onishi Y et al in Japan.[8,24,25] Benzodiazepines are given sometimes to tackle Anxiety and insomnia, generally associated with MDD as SSRIs and other antidepressants shows their action after 2-3 weeks of starting of therapy.[26]

Maximum number of antidepressants drugs prescribed were available at the hospital formulary. Ghosh S et al, found that of the total drugs prescribed in their psychiatry outpatient department, 82.30% of the drugs prescribed were available from hospital pharmacy.22 Our study was undertaken at a tertiary care teaching hospital where most of the patients seeking treatment are from poor socioeconomic class. They are prescribed medications available at hospital pharmacy which they can avail free of cost.[27] Lower adherence to antidepressants is associated with higher cost of the medication. In a study by Kennedy J et al most common reason cited for failure to fill or non-adherence to treatment was they thought that it would cost too much (55.5%).[28] Hence prescribing antidepressants from hospital formulary increases adherence.

Conclusion:

With the changing trend of treatment and availability of newer drugs it becomes mandatory to conduct periodic prescription audits. These audits will help to keep hospital pharmacy updated with the current trends & needs of the prescribing physicians. This study can also help to provide feedback to the prescribers, thereby increasing the awareness and improve patient care by rational utilization of drugs. Our study took into account the first prescription only. Further studies considering all prescriptions are needed to see the change in the drug pattern and doses as the treatment progresses.

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