

PATTERNS OF PRESCRIPTION & EFFICACY EVALUATION OF ANTIDEPRESSANTS IN A TERTIARY CARE TEACHING HOSPITAL IN EASTERN INDIA

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ABSTRACT

Aim: Patterns of Prescription & efficacy evaluation of Antidepressants in a tertiary care teaching hospital of Eastern India.

Objective: Depression is associated with marked personal, social and economic morbidity affecting 9.5% of population worldwide. Prompt diagnosis and treatment can alleviate symptoms in over 80% of the cases. Present study investigates the prescribing patterns of different antidepressants & correlates the use of different antidepressant groups with their efficacy by using standardized tools for evaluation of efficacy.

Subjects & Methods: A prospective, observational and cross sectional study was conducted in the out-patient department of Psychiatry in I.M.S & SUM Hospital in collaboration with S.C.B. Medical College & Hospital. A total of 160 cases were enrolled for the present study to investigate the prescribing pattern of antidepressants using a predesigned format.

Statistical Analysis : Statistical analysis for both pattern of use & efficacy were done using chi square test & Wilcoxon's signed rank test respectively.

Results: Females suffered from depression more than their male counterparts. Unmarried people suffered more from depression and most of them had background stressors in life. Monotherapy was practiced more frequently than polytherapy with 2or more drugs. Selective Serotonin Reuptake Inhibitors (SSRI) like Escitalopram was found out to be the most preferred antidepressant among the psychiatrists of this hospital.

Conclusion: Thus, out of three major antidepressant groups of drugs being prescribed for the treatment of depression, selective serotonin reuptake inhibitors are preferred over others because of their better side effect profile.

Keywords: Depression, Antidepressant, Monotherapy

INTRODUCTION

Depression is an important global public health problem due to its relatively high lifetime prevalence and significant disability caused by it. It accounts for almost 12% of the total years which were lived with disability worldwide ¹.The WHO defines depression as a pessimistic sense of inadequacy and a despondent lack of activity. It can be defined as a mental state which is characterized by feelings of sadness, loneliness, despair, low self-esteem, and self-reproach. The accompanying signs include psychomotor retardation or at times, withdrawal from interpersonal contact and vegetative symptoms such as anorexia and insomnia ². The physical symptoms of depression include fatigue and reduced activity, disturbed sleep or excessive sleep, changes in appetite and weight, loss of sex drive, unexplained aches and changes in the menstrual cycle. Other symptoms of depression include poor concentration or reduced attention, difficulty in making decisions, tearfulness, restlessness, agitation or anxiety, low self confidence and self-esteem, feelings of guilt, inability to cope with life as before ³.The symptoms may be chronic or recurrent and in severe cases may include any, or a combination of the following, which have been experienced for more than two weeks can lead to suicide. Depression accounted for 4.46% of the total DALYs (Disability Adjusted Life Years) and 12.1% of the YLDs (Years Lived with Disability) in 2002, as opposed to 3.7% of the DALYs and 10.7% of the YLDs in 1990 ⁴. A drug utilization study is aimed at evaluating the factors which are related to the prescribing, dispensing, administering and the taking up of medication and its associated events. These factors analyze the trend of drug usage at various levels in the healthcare system, irrespective of whether it is national, regional, local or institutional. They evaluate drug usage at a population level according to the age, sex, social class and morbidity among other characteristics. They also crudely estimate the disease prevalence to plan drug production and procurement. Many studies have pointed to significant changes in the types of antidepressants that are being prescribed ⁵. The outpatient and medication based therapy for depression is becoming much more popular for the treatment of depression than for psychotherapy ⁶. Thus, it is important to know the current trend of drug usage and the effectiveness of the drugs which are used for depression.

SUBJECTS AND METHODS

The present study is a prospective, observational and cross sectional clinical study. Subjects were selected from patients who presented to the O.P.D. of Department of Psychiatry of I.M.S & SUM Hospital in collaboration with S.C.B. Medical College & Hospital. 160 numbers of subjects were included in the study. A prescribed proforma was prepared by the study team to collect and record the data. Informed consent was taken prior to their inclusion into the study. Patient's identity was held in strict confidence and all measures were taken to protect the confidentiality of the patients.

Patients who met the inclusion criteria were assessed for their competence to provide informed consent and if found competent, the study was explained to them in their local language. Informed consent was taken prior to their inclusion into the study. Patient's identity is held in strict confidence and all measures are taken to protect the confidentiality of the patients.

Inclusion Criteria

1. Outdoor patients suffering from depressive disorder attending O.P.D. of Department of Psychiatry .
2. Patients from all age groups & both the sexes are included.
3. Pregnant ladies suffering depressive disorders.
4. Understood the purpose of study and were ready to provide information regarding their health status and signed an informed consent document .

Exclusion Criteria

1. Patients suffering from malignancies and terminally ill patients.
2. Were judged clinically to be at suicidal risk (too serious to be included in the study).
3. Had a history of allergic or serious adverse reactions to study the medications.

4. Had history of substance abuse.

Study of Patient's Demographic Profile

The following data were collected on the prescribed proforma to study the incidence, prevalence and risk factors associated with depression in our study population. This includes Name, Age, Sex of patient, Onset and Duration of disease, Family history, Employment and Marital status, socioeconomic status, any stressor or precipitating life event. All the above data of 160 patients were tabulated and put into Chi-Square test to study level of significance in the causation of depression.

Study of Drug Utilization Pattern

Antidepressant medication received by the subjects in our hospital set up were ascertained by noting down the type of disease, drug doses and frequency of the drugs, type of disease, strength of antidepressant, the duration of the treatment, etc. in the prescribed proforma. The Antidepressants were divided into three groups: Group 1 (TCAs), Group2 (SSRIs) & Group3 (SNRIs or NDRIs). Any change of drugs or the dosing schedule of the drug in subsequent visits of patients to the hospital was recorded in the separate columns provided. Thereby, the pattern of anti-depressant drugs used in different subsets of population was analyzed.

Study of Comparative Efficacy of TCAs, SSRIs & Newer Antidepressants

Those subjects on TCAs or on SSRIs or on Newer Antidepressants(SNRIs or NDRIs) were subjected to detailed neuropsychiatric examination at the point of entry into the study and were subsequently followed up at three and six months to evaluate the efficacy of each agent. Efficacy was assessed under the domain of psychopathology and was quantitatively assessed by using the HDRS scale (17 items, 0-4 severity scale). The analysis of HDRS score was done statistically at baseline and at the end of 3 months and 6 months.

The **Hamilton Rating Scale for Depression (HRSD)**, also known as the **Hamilton Depression Rating Scale (HDRS)** or abbreviated to **HAM-D**, is a multiple choice questionnaire that clinicians may use to rate the severity of a patient's major depression.⁸ The clinician must choose the possible responses to each question by interviewing the patient and by observing the patient's symptoms. Each question has 3-5 possible responses which increase in severity. A score of 0-7 is considered to be normal, scores of 20 or higher indicate severe depression and are usually required for entry into a clinical trial.⁹ Questions 18-21 may be recorded to give further information about the depression (such as whether diurnal variation or paranoid symptoms are present), but are not part of the scale.¹⁰

Although Hamilton's original scale had 17 questions, others later developed HRSD scales with different numbers of questions, the greatest of which is 29 (HRSD-29).^{11,12,13,14}

Statistical Analysis

All analyses were done in an intent-to-treat basis, meaning that all patients were included in the treatment groups no matter how long they adhered to the protocol. For the analysis of demographic profile & drug utilisation data chi square Test & for efficacy evaluation Wilcoxon's signed rank test were used, with a p-value of less than 0.05, considered to indicate statistical significance.

RESULTS & DISCUSSION

In our study, majority of study subjects were middle aged adults within the age group of 36-50 years (40.62%) followed by age group 51-64 years (30.62%). Females (92) & males (68) presenting with depression in this study suggests that, occurrence of depression is more in females. This study also explores that, the average age of onset of depression was 41.7 years (Table1) and the average length of duration of illness was 2.12 years. It was also observed that married females (28.87%) and unmarried males (22.5%) were more depressed (Figure1). The stressors of life like post traumatic stress, chronic physical illness, and work related stress could be a major factor in causation of depression as majority (57.5%) of subjects in our study were having some stressors in their life. In our study, it was observed that monotherapy with different group of antidepressants was practiced in 136 patients i.e. 85% of the study population while polytherapy with 2 drugs of different group was practiced only in 24 patients i.e. 15%. Polytherapy includes combination of SSRI, TCA and newer group of antidepressants .91prescriptions (56.87%) among the 160 studied contained SSRIs while 13 (8.12%) contained TCAs and 32 (20%) contained newer antidepressants (SNRI/ NDRI)(Table-2). SSRI plus NDRI & SSRI plus TCA were used in 17 (10.62%) & 7 (4.37%) patients respectively. Among 136 cases received monotherapy, 37 (23.12%) received escitalopram, 31(20.62%) subjects received fluoxetine, 19 (11.87%) subjects got sertraline whereas 2 (1.25%) received paroxetine. 11 (6.87%) got amitriptyline, 2 (1.25%) got dotheipin, 9 (5.62%) received venlafaxine whereas 15 (9.37%) received duloxetine, 8 (5%) received bupropion. Similarly out of 24 cases received polytherapy with 2 drugs, 8 (5%) subjects were on fluoxetine and bupropion, 2 subjects (1.25%) were on escitalopram and bupropion, 7 subjects (4.37%) were on sertraline and bupropion, 2 (1.25%) subjects were on sertraline and amitriptyline, 4 (2.5%) subjects were on fluoxetine and amitriptyline whereas only 1 (0.62%) subject was on escitalopram and amitriptyline(Table-3).

Table 1: Age of onset of depression in study population

Sex of Patient		Age of Onset of Depression					Total
		0 - 17	18 - 35	36 - 50	51 - 64	65 +	
Male	Count	7	14	28	18	1	68
	% within Sex of Patient	10.29	20.58	41.17	26.47	1.47	100
	% within Age of Onset	58.33	45.6	39.43	42.85	25	42.5
Female	Count	5	17	43	24	3	92
	% within Sex of Patient	5.43	18.47	46.73	26.08	3.26	100
	% within Age of Onset	41.66	54.83	60.56	57.14	75	57.5
Total	Count	12	31	71	42	4	160
	% within Sex of Patient	7.5	19.37	44.37	26.25	2.5	100
	% within Age of Onset	100	100	100	100	100	100
χ ² = 2.097		df = 4		p = 0.717			

Table 2: Utilisation of different groups of Antidepressant Drugs

Group of Drug	Frequency	Percent	Valid Percent	Cumulative Percent
SSRI	91	56.87	56.87	56.87
TCA	13	8.12	8.12	65
NEWER (SNRI & NDRI)	32	20	20	85
SSRI + NDRI	17	10.62	10.62	95.62
SSRI + TCA	7	4.37	4.37	100
Total	160	100	100	

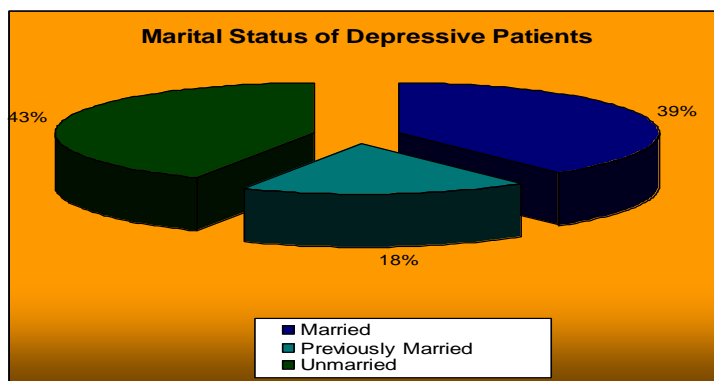


Figure 1: marital status of depressive patients

Table 3 : Prescribing Pattern Of Individual & Combination Antidepressant Drugs

Sl. No	Specific Drug	Frequency	Percent	Valid Percent	Cumulative Percent
1	Fluoxetine	33	20.62	20.62	20.62
2	Sertraline	19	11.87	11.87	32.5
3	Escitalopram	37	23.12	23.12	55.62
4	Paroxetine	2	1.25	1.25	56.87
5	Amitriptyline	11	6.87	6.87	63.75
6	Dotheipin	2	1.25	1.25	65
7	Venlafaxine	9	5.62	5.62	70.62
8	Duloxetine	15	9.37	9.37	80
9	Bupropion	8	5	5	85
10	Fluoxetine+Bupropion	8	5	5	90
11	Escitalopram+Bupropion	2	1.25	1.25	91.25
12	Sertraline+Bupropion	7	4.37	4.37	95.62
13	Sertraline+Amitriptyline	2	1.25	1.25	96.87
14	Fluoxetine+Amitriptyline	4	2.5	2.5	99.37
15	Escitalopram+Bupropion	1	0.62	0.62	100
	Total	160	100	100	

It is observed that, the most frequently prescribed antidepressant was escitalopram (in 37 cases i.e. 23.12%) and the most frequently prescribed newer antidepressant was duloxetine (in 15 cases i.e. 9.37%). The most frequently prescribed combination therapy was that of fluoxetine plus bupropion (8 i.e. 5%) in the study population. The most commonly prescribed antidepressant drug in our study was escitalopram (23.12%) followed by fluoxetine as monotherapy (20.62%) both belonging to the group SSRI as monotherapy (Figure-2). Efficacy assessment of antidepressants was done by Hamilton depression rating scale (HDRS Score). Out of all patients treated, 72 were on SSRI, 13 patients were on TCA & 27 were on newer combinations (SNRI/NDRI). Among patients on SSRIs, there was significantly lower HDRS scores both at the end of 3 months and 6th month compared to initial HDRS score. When HDRS scores of second and third visit of same group (SSRI) were compared, it was found that 59 cases had lower HDRS scores on third visit than second, while the rest 13 cases had equal HDRS scores on both second and third visits (Table 4). This finding suggests that, SSRI groups of antidepressants show maximal beneficial effect after third month.

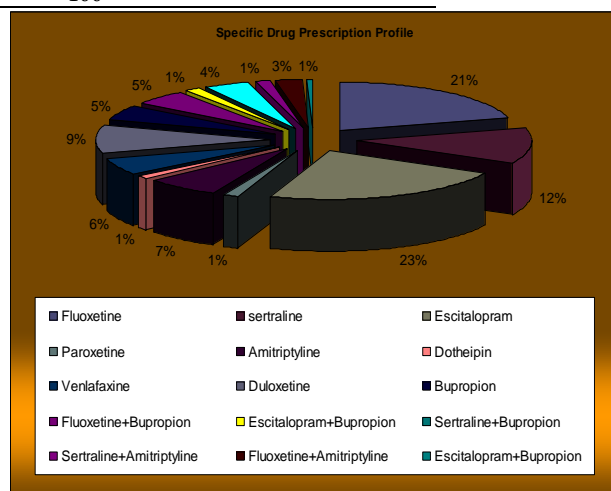


Figure 2: specific drug prescription profile

Table 4: Changes in the mean HDRS score from Baseline to Endpoint in Patients with Depression Treated & Followed up Minimum for 6 Months

Group of antidepressants	At 1st Visit (Baseline)	At 2nd Visit (3Months)	% of Improvement	At 3rd Visit (6Months)	% of Improvement
SSRI Group (n = 72)	25.81	15.15	41.30%	12.39	51.99%
TCA Group (n = 13)	26.08	16.18	37.96%	12.77	51.03%
Newer Drug Group (SNRI & NDRI) (n = 27)	26.63	15.89	40.33%	12.41	53.39%

All the 13 patients on TCAs had reduced HDRS scores at end of 3rd month and 6th month. However, when HDRS scores of second and third visits were compared, it was found that 9 cases had less HDRS scores on third visit than second compared to baseline score, and in rest 4 cases, there were equal HDRS scores (Table 4). This suggests that in contrast to SSRI group, patients on tricyclic antidepressants have maximal benefit early i.e. (end of 3rd month). In the newer

antidepressant group containing 27 patients on SNRIs or NRIs, all 27 of them had reduced HDRS scores on second visit (3 months). While 25 had reduced HDRS scores on the third visit (6 months) on comparison to second visit (3 months), only 2 cases had equal HDRS scores on both the visits (Table 4). At the end of 3rd month, it was observed that the percentage of improvement in TCAs is almost equal with the other two groups of drugs prescribed; i.e. SSRIs and

newer antidepressants and the percentage of improvement of all the group of drugs at 6 months was comparable i.e. SSRIs – 52%, TCAs – 51%, and newer antidepressants – 54% respectively.

This shows that there is a little difference among the three treatment groups in percentage of improvement of symptoms after three months of treatment. However, after 6 months, the percentage of improvement was 52% for SSRI, 51% for TCA and 53% for newer groups.

CONCLUSION

Females suffer from depression more than their male counterparts, while the age of onset and duration of illness is almost same. Monotherapy is practiced more frequently than polytherapy and conventional drugs like SSRIs are more preferred than newer antidepressants in our institution. Escitalopram, a newer drug belonging to SSRI, is the most frequently prescribed antidepressant whereas duloxetine is the preferred drug from newer antidepressant class (SNRIs & NDRIs combination). All the three major antidepressant groups are equipotent at 6 month HDRS scoring.

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