

Efficacy Of Amitriptyline and Fluoxetine in Patient with Mixed Anxiety and Depression: A Comparative Clinical Study

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Abstract

Aim: To compare the efficacy of amitriptyline and fluoxetine in patient with mixed anxiety and depression.

Methods: Study was carried out in the outpatient Department of Psychiatry, Department of Psychiatry, Vardhman Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India for 1 year. Newly diagnosed cases of depression (moderate to severe according to ICD 10 criteria) were included for the study. Study Participants were divided into two groups and group I was given amitriptyline and group II was given fluoxetine. Patients were given treatment for a period of 8 weeks and they were followed were once in two weeks. Complete blood count, Liver function test, renal function test, Thyroid profile, blood glucose and serum cholesterol were estimated at baseline and at the end of study for all the patients.

Results: A total of one hundred ten patients were recruited after satisfying the inclusion and exclusion criteria. The efficacy rate for fluoxetine group was 82.10 %. In the amitriptyline group, out of 55 patients 5 patient did not achieve remission, i.e. the HDRS score less than or equal to seven at the end of 8 week. The remission was 90 % with amitriptyline, while in the fluoxetine group out of 55 patients 3 patient did not achieve remission. The remission in the fluoxetine group was 92%.

Conclusion: Depression is a disorder of major public health importance, in terms of its prevalence, morbidity, mortality and economic burden. The prevalence of depression is more in women than men. Fluoxetine and amitriptyline were equally efficacious in the treatment of depression.

Keywords: Amitriptyline, Depression, Efficacy, Fluoxetine, Response rate

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Introduction

Affective disorders are one of the most common psychiatric disorders and account for nearly 30-40% of the case load at various psychiatric facilities in India [1].

There is a marked variability in the prevalence rate of depression across the studies in India which range from 1.5 per 1000 [2] to 37.74 per 1000[3]. The

Epidemiological Catchment Area and National Co morbidity Survey studies suggested that the current rate of major depression is in the realm of 2t. It is believed that the true life time rate of major depression is probably in the realm of 10–20 per 100 [4].

The primary diagnosis of depression was found in 50 % of patients who have committed suicide. In India 120,000 people commit suicide every year. Indian union health ministry has estimated that 37.8 % were below the age group of 30 years [5].

There are many classes of antidepressants and the list is growing with the advent of many newer anti-depressants, tricyclic anti-depressants (TCA) were initially used to treat depression. Amitriptyline is an effective antidepressant belonging to a tricyclic antidepressant group. SSRI is the currently preferred first line anti-depressant of choice in unipolar depression [6]. Amitriptyline and fluoxetine was most commonly used in the psychiatric outpatient department for treating depression so they were selected to be the candidate drug.

Thus we aim to compare the efficacy of amitriptyline and fluoxetine in patient with mixed anxiety and depression.

Materials and Methods

Study was carried out in the outpatient Department of Psychiatry, Department of Psychiatry, Vardhman Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, india for 1 year. Newly diagnosed cases of depression (moderate to severe according to ICD 10 criteria) were included for the study.

Methodology

Patients of both sexes were included and the age group selected was between 19 years to 60 years. Patients not willing to participate in the study were excluded Pregnant and breastfeeding women were

excluded. Patients with diabetes mellitus, hypothyroidism, and obesity were excluded. Patients with Cardiac, hepatic disease, acute or chronic renal disease were excluded from the study Patient with tuberculosis, HIV/AIDS, leprosy were excluded from the study Eighty Cases were selected over a period of one year.

Study Participants were divided into two groups and group I was given amitriptyline and group II was given fluoxetine. Patients were given treatment for a period of 8 weeks and they were followed were once in two weeks. Complete blood count, Liver function test, renal function test, Thyroid profile, blood glucose and serum cholesterol were estimated at baseline and at the end of study for all the patients. Clinical assessment for Efficacy of both antidepressants was done at the beginning of the study and on 2nd, 4th, 6th, 8th weeks. To measure Efficacy, the 17- point HAM-D (Hamilton Depression) rating scale was used; Efficacy was assessed by measuring the reductions in the total HAM D-Scores at the end of the study from baseline scores.

Statistical analysis

Data analyzed using student's t test for normally distributed data.

Results:

A total of one hundred ten patients were recruited after satisfying the inclusion and exclusion criteria. All the patients completed the 8 weeks trial and there was no drop out in the study, all the 110 patients were analyzed for the response to the drug therapy. Among eighty patients analyzed 41% were males and rest were females (59%). The majority of patient belonged to 20- 39 years of age (69%).

In amitriptyline group, the mean HDRS score at baseline was 32.62 ± 3.01 and at the end of 8 weeks was 27.92 ± 2.91 . The mean reduction of HDRS score for the amitriptyline group was 7.72 ± 1.22 . The

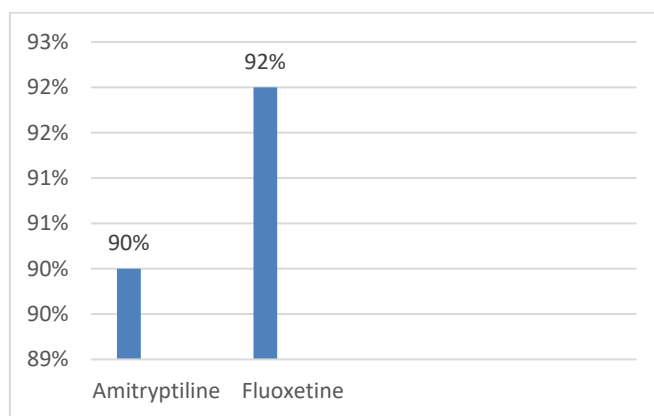
efficacy rate was 81.45 %. While in fluoxetine group, the mean HDRS score at base line was 32.71 ± 3.20 and the mean HDRS score at the end of 8 weeks trial was 27.61 ± 2.81 and the mean reduction in HDRS for fluoxetine group was 6.21 ± 1.02 . The efficacy rate for fluoxetine group was 82.10 % (Table 1).

In the amitriptyline group, out of 55 patients 5 patient did not achieve remission, i.e. the HDRS score less than or equal to seven at the end of 8 week. The remission was 90 % with amitriptyline, while in the fluoxetine group out of 55 patients 3 patient did not achieve remission. The remission in the fluoxetine group was 92% (Figure 1).

Table 1: Comparison of efficacy between two groups

Group	HDRS baseline (Mean \pm S.D)	HDRS 8 week (Mean \pm S.D)	Mean reduction (Mean \pm S.D)	Efficacy rate (%)
Amitriptyline	32.62 ± 3.01	27.92 ± 2.91	7.72 ± 1.22	81.45
Fluoxetine	32.71 ± 3.20	27.61 ± 2.81	6.21 ± 1.02	82.10

Figure 1: Comparison of efficacy of amitriptyline and fluoxetine.



Discussion:

In a systematic review of 34 randomized clinical trials involving 3922 patients, 4 trials were found to have examined antidepressants in SFD. Beneficial effects of antidepressants in SFD was shown in 3 out of 4 trials [7]. A meta-analysis of 94 randomized controlled trials of antidepressants found substantial benefit for treating SFD with improvement in patients occurring more than three times as compared with placebo (OR 3.4, 95% CI 2.6-4.5). The meta-analysis also found that tricyclic antidepressants were beneficial in significantly more studies compared with SSRIs (76 versus 47 percent of studies), but there was an insufficient number of trials of SSRIs to draw a firm conclusion about the relative efficacy of the two

classes of antidepressants [8]. In a study by Liu Hongxia [9]. Clinical effects of both Fluoxetine and Amitriptyline were similar. However, Fluoxetine had less side effects than Amitriptyline. This finding is similar to our study in terms of side effect profile, however our study found Fluoxetine acting faster after 2nd week till 4th week.

Introduction of new class of antidepressants has significantly changed the management of depression, early identification and treatment at the grass root level that is the primary care level may be beneficial to the patient in reducing the suffering. The treatment of depression has changed from tertiary care to primary care. Amitriptyline is a tricyclic antidepressant; its efficacy is well

established in severe depression. Fluoxetine being an SSRI claimed to be equally effective as TCA in treating depression. Data on the response to drug therapy for antidepressants among the South Indian population is unavailable in detail. A meta-analysis by Sarkar S and Grover S has reviewed the efficacy of treatment of depression in Indian context and they have found there were some data from India with respect to the efficacy of antidepressants they have found most of the trials have been shorter duration and has been inadequately powered. The available data shows the superiority of antidepressants over placebo.[10]

An outpatient study, which evaluated psychiatric comorbidity in 100 randomly selected patients in the age group of more than 50 years attending geriatric outpatient department has found 29% patients suffered from psychiatric illness of which depression is the most common disorder.[11]

The efficacy of the antidepressants was evaluated and found that the fluoxetine group had efficacy rate of 81.40%, which was slightly more than amitriptyline group 80.95 %. The difference in efficacy between two groups was tested using students t test and the results were statistically insignificant ($p > 0.005$) and there is no statistical significance between two groups in a mean reduction of the HDRS score from the baseline to end of the study implicating both were equally efficacious in treatment of depression. In a meta-analysis study done by Song F et al, they have included 63 randomized studies which were comparing the efficacy and acceptability of SSRI and TCA and their study has found no difference in efficacy between SSRI and TCA which is similar to our study. [12]

In a 6 week double blind placebo controlled randomized trial on fluoxetine in the management of depression by Robert D Gibson et al has found the rate of

improvement for fluoxetine was 35% greater than placebo and fluoxetine is effective in the treatment of depression. [13]

Conclusion

Depression is a disorder of major public health importance, in terms of its prevalence, morbidity, mortality and economic burden. The prevalence of depression is more in women than men. Fluoxetine and amitriptyline were equally efficacious in the treatment of depression.

References:

1. Varma, V.K., Das, K., 1995. Mental illness in India: epidemiology, manifestations and outcome. *Indian J Social Psychiatry* 11, 16–25.
2. Sethi, B.B., Gupta, S.C., 1972. A psychiatric survey of 500 rural families. *International Journal of Psychiatry* 14, 183–196.
3. Nandi, D.N., Ajmany, S., 1975. Psychiatric disorders in rural community in West Bengal: an epidemiological study. *International Journal of Psychiatry* 17, 87–92.
4. Joyce, P.R., 2009. Epidemiology of Mood Disorders. In: Gelder, M.G., Andreason, N.C., Loper-Ibor, J.J., Geddes, J.R. (Eds.), *New Oxford Textbook of Psychiatry*. Oxford University Press Inc., New York, pp. 645–650.
5. Reddy MS. Depression: The disorder and burden. *Indian journal psychological medicine*. 2010;32(1):1-2.
6. O' Donnell JM, Shelton RC. Drug Therapy of Depression and Anxiety Disorder. In: Brunton LL, Chabner BA, Knollmann BC, Goodman & Gilman's *The Pharmacological basis of therapeutics*, 12th edition. New York: McGraw Hill. 2011: pp. 404-405.
7. Kroenka K. Efficacy of treatment of somatoform disorders: A review of

- randomized controlled trials. Psychosomatic Medicine. 2007; 69:881-888.
8. O'Malley PG, Jackson JL, Santoro J, et al. Antidepressant therapy for unexplained symptoms and symptom syndromes. J Fam Pract.1999; 48: 980-990.
 9. Mansour, M. B., & Ahmedana, S. E. . (2021). Statin use and Type 2 Diabetes Incidence. Journal of Medical Research and Health Sciences, 4(1), 1139–1145. <https://doi.org/10.15520/jmrhs.v4i1.306>
 10. Liu Hongxia. A comparative study of fluoxetine and amitriptyline in the treatment of somatoform disorders. Shandong Archives of Psychiatry.2003-04.
 11. Sarkar S, Grover S. A systematic review and metaanalysis of trials of treatment of depression from India. Indian Journal of Psychiatry. 2014;56:29-38.
 12. Kohn R, Epstein Lubrow G. Course and outcome of depression in elderly. Current psychiatry Rep. 2006;8(2):34-40.
 13. Song F, Freemantle N, Sheldon TA. Selective serotonin reuptake inhibitors: Metaanalysis of efficacy and acceptability. British Journal of psychiatry. 1993:306-309.
 14. Gibbson RD. Who benefiting from antidepressants? Arch Gen psychiatry. 2012.69(6):572-9.