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Compare the Efficacy of Escitalopram and Amitriptyline to reduce the Suicidal Risk in Depression patients

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Abstract

Depression is the one of the leading cause of disability for both males and females, the burden of depression is 50% higher for females than males. To evaluate and compare the efficacy of Escitalopram (SSRI) and Amitriptyline (TCA) in reducing suicidal risk in patients with depression. Patients attending the OPD of Psychiatry department of MIMS were screened for selection criteria after obtaining written informed consent. After fulfilling the selection criteria, patients were randomized into two groups. Group – 1 were kept on tablet Amitriptyline 50mg /BD for 6 weeks and Group – 2 were on tablet Escitalopram 10 mg/BD for 6 weeks. Total 60 patients who were newly diagnosed with moderate –severe depression after fulfilling the selection criteria were included in our study. The study duration for each patient entering the study was 6 weeks. The results shows HAM-D, Pre & post treatment for Group 1 (Amitriptyline group) was significant (<0.001)*. P value of BSIS, Pre & Post treatment for Group 1 (Amitriptyline group) was significant (<0.001). (P< 0.05 is considered as significant). p value of HAM-D before & after treatment for Group 2 (Escitalopram group) was significant (<0.001)*. P value of BSIS before & after treatment for Group 2 (Escitalopram group) was significant (<0.001). Decreased suicidal risk, after treatment of Amitriptyline & Escitalopram (P value significant for both treatment groups). Suicidal behavior correlates with inadequate prescription of antidepressants. In the most antidepressant prescriptions are for female patients and most suicides are committed by male individuals.

Key words: Suicidal Risk, Depression, Escitalopram, Amitriptyline, HAM-D (Hamilton Depression Scale), BSIS (Beck's Suicidal Intense Scale).

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Introduction

Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and physical well being.[1] Depression is the one of the leading cause of disability for both males and females, the burden of depression is 50% higher for females than males.[2] In fact, depression is the leading cause of disease burden for women in both high-income and low- and middle-income countries.[3] Suicide (Latin suicidium, from sui caedere, "to kill oneself") is the act of intentionally causing one's own death.[4] Suicide is often committed out of despair, the cause of which can be attributed to a mental disorder such as depression, bipolar disorder, schizophrenia, autism , spectrum disorders, alcoholism, or drug abuse. [5] Drugs used for Depression are Selective Serotonin Reuptake Inhibitors (SSRIs), Tricyclic Antidepressants (TCAs), and Monoamine Oxidase Inhibitors (MAOI) and Atypical antidepressants.[6] The baseline depression and suicidal risk were assessed by Hamilton Depression scale and Beck's suicidal intent

scale respectively. After randomization Group – 1 were kept on Tab. Amitriptyline 50mg twice daily for 6 weeks and Group –2 were kept on Tab. Escitalopram 10 mg twice daily for 6 weeks. After 6 weeks duration of treatment, HAMD and BSIS were assessed in both groups for data analysis and compared the efficacy of Escitalopram (SSRI) and Amitriptyline (TCA) in reducing the suicidal risk. This study showed that Escitalopram (SSRI) and Amitriptyline (TCA) observation of suicidal risk in depression patients.

Methodology

The study was conducted in MIMS (Maharagah's Institute of Medical Sciences). The study population was enrolled after fulfilling the selection criteria from OPD (Out Patient Department) of Psychiatry. The study was conducted from December 2011 to June 2012. The aim of this study is to evaluate and compare the efficacy of Escitalopram (SSRI) and Amitriptyline (TCA) in reducing suicidal risk in patients with depression. The objective of the study was to evaluate the level of depression and suicidal risk among the two study groups followed by evaluate and compare the efficacy and safety of Escitalopram (SSRI) and Amitriptyline (TCA) in the study groups. Both male & female subjects with recently diagnosed depression and between the age group of 20 - 60 years were included. Patients with Schizophrenia, bipolar disorder, drug abuse (except nicotine abuse), severe Cardiovascular, Renal and liver diseases were excluded.

Study design: Randomized, Single Blind, 6 Weeks Study to evaluate the Efficacy and Safety of Escitalopram (SSRI) in comparison with Amitriptyline (TCA) in reducing the suicidal risk in patients with moderate-severe depression. Total 60 patients who were newly diagnosed with moderate – severe depression after fulfilling the selection criteria were included in our study. The study duration for each patient entering the study was 6 weeks. Patients attending the OPD of Psychiatry department of MIMS were screened for selection criteria after obtaining written informed consent. After fulfilling the selection criteria, patients were randomized into two groups. Group – 1 were kept on tablet Amitriptyline 50mg /BD for 6 weeks and Group – 2 were on tablet Escitalopram 10 mg/BD for 6 weeks. After 6 weeks the general condition of the patients was assed and then the HAMD and BSIS scoring were repeated for data analysis and report writing. In between these 6 weeks, patients were clinically assessed and examined on weekly basis and advised to report to the hospital immediately on encountering any discomfort or any kind of problems. After the study period the patients from both the groups either continued with their respective treatment regimens or were put on standard antidepressant therapy depending on the efficacy and safety of the treatment regimens at the discretion of the clinician.

Treatment groups: (1) Group – 1 Patients were kept on Tab. Amitriptyline 50mg twice daily. (2) Group – 2 Patients were kept on Tab. Escitalopram 10mg twice daily. Patients were supplied with the drug on a weekly basis and were requested to return the unused tablets.

Assessment of efficacy: HAM-D scale for assessment of depression-The Hamilton Depression Rating Scale (HAM-D) has proven useful for many years as a way of determining a patient's level of depression before, during, and after treatment. BECK'S suicidal intent scale for assessment of suicidal risk- The BECK'S suicidal intent scale is a 20-item scale for measuring negative attitudes about the future. Beck originally developed this scale in order to predict who would commit suicide and who would not.

Efficacy evaluation: Percentage of change in score for Depression on HAM-D scale, over 6 week's duration of treatment. Percentage of change in score for Suicidal risk on BECK'S hopelessness scale, 6 weeks duration of treatment.

Assessment of Depression by Hamilton Depression Rating Scale (HAM-D): The Hamilton Depression Rating Scale (HAM-D) has proven useful for many years as a way of determining a patient's level of depression before, during, and after treatment. It should be administered by a clinician experienced in working with psychiatric patients.

Statistical analysis: Using SPSS software version 10 statistical analyses was done. The treatment groups were compared for efficacy and safety variables using Student 't' test.

Results

The present study was conducted in the Department of Psychiatry, Maharajah's Institute of Medical Sciences (MIMS), Nellimarla, and Vizianagaram during the period of December 2011 to June 2012 for 6 months. 60 patients of ranging from 20 to 60 years age group were considered as subjects for the study. After

fulfilling the selection criteria, patients were randomized into two groups. Group – 1 patients were kept on Tab. Amitriptyline 50mg /twice daily for 6 weeks. Group – 2 patients were kept on Tab. Escitalopram 10 mg /twice daily for 6 weeks. **Table-1 Shows** Pretreatment mean HAMD of Group 1 was 21.26±3.90 and pretreatment mean HAMD of Group 2 was 19.90±4.45. Pretreatment mean BSIS lof Group 1 was 32.06±5.13 and pretreatment mean BSIS of Group 2 was 30.26±6.49.

Table 1: Baseline characteristics pre treatment. HAMD & BSIS scores of study population.

	Pre-tretment values of Groups	Mean ± SD
HAM-D score	Group 1 (n = 30)	21.26 ± 3.90
	Group 2 (n = 30)	19.90 ± 4.45
BSIS Score	Group 1 (n = 30)	32.06 ± 5.13
	Group 2 (n = 30)	30.26 ± 6.49

Figure 1: Pre- treatment means HAMD & BSIS score of Amitriptyline (TCA) & Esciatalopram (SSRI)

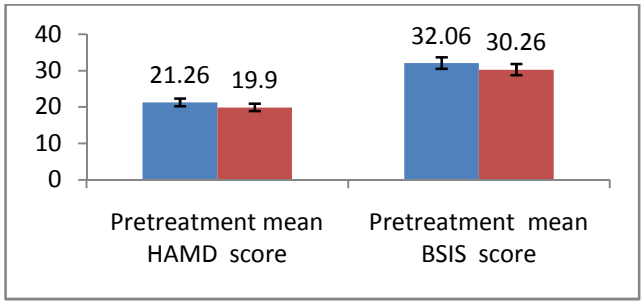

Table-2 Post treatment HAMD mean of Group 1 was 12.10±4.81 and post treatment HAMD mean of Group 2 was 9.5±4.48. Post treatment BSIS mean of Group 1 was 7.60±2.41 and post treatment BSIS mean of Group 2 was 6.13±2.40.**Table-3** Pretreatment HAMD mean of Amitriptyline (TCA) was 21±3.90, after treatment HAMD mean of Amitriptyline (TCA) was 12.10±4.81. Pretreatment BSIS mean of Amitriptyline (TCA) was 32.06±5.13, after treatment BSIS mean of Amitriptyline (TCA) was 7.6±2.41. HAMD-T value=13.61 & df =29. BSIS –T value 32.82 & df =29. *p* value of HAM-D, Pre & post treatment for Group 1 (Amitriptyline group) was significant (<0.001)*. P value of BSIS, Pre & Post treatment for Group 1 (Amitriptyline group) was significant (<0.001). (*P*< 0.05 is considered as significant). **N** – is the total number of cases. **SD** – Standard Deviation; **SEM** – Standard Error Mean. **df** – Degrees of Freedom. **T** value is the value of Student "t" test. **Table-4** Pretreatment mean HAMD of Escitalopram (SSRI) was 19.90±4.45, after treatment mean HAMD of Escitalopram (SSRI) was 9.5±4.84. Pretreatment mean BSIS of Escitalopram (SSRI) was 30.26±6.49, after treatment mean BSIS of Escitalopram (SSRI) was 6.13±2.40. HAMD-T value=11.73 & df =29. BSIS –T value 20.36 & df=29. *p* value of HAM-D before & after treatment for Group 2 (Escitalopram group) was significant (<0.001)*. P value of BSIS before & after treatment for Group 2 (Escitalopram group) was significant (<0.001).

	Post treatment values of Groups	Mean ± SD
HAM- D score	Group 1 (n = 30)	12.1 ± 4.81
	Group 2 (n = 30)	9.5 ± 4.84
BSIS score	Group 1 (n = 30)	7.60 ± 2.41
	Group 2 (n = 30)	6.13 ± 2.40

Table 2: Post –treatment after 6 weeks therapy

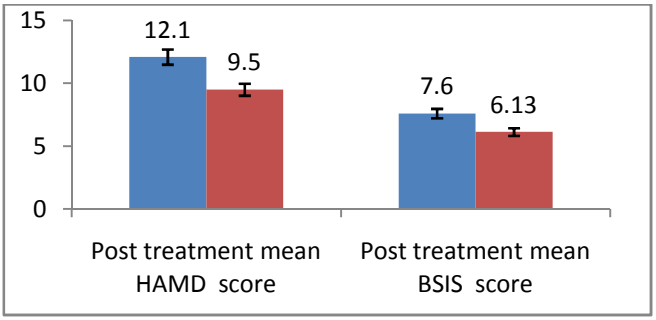

Figure 2: Post treatment HAMD & BSIS score of Amitriptyline (TCA) & Esciatalopram (SSRI)

Table 3: Amitriptyline pre &post treatment mean scores of HAM-D&BSIS

	Group 1	Mean ± SD	P value
HAM-D score	Pre Rx (n=30)	21.26 ± 3.90	<0.001*
	Post Rx (n=30)	12.10 ± 4.81	
BSIS Score	Pre Rx (n=30)	32.06 ± 5.13	
	Post Rx (n=30)	7.6 ± 2.41	<0.001*

Table 4: Escitalopram pre & post treatment scores of HAM-D&BSIS.

	Group 2	Mean ± SD	P value
HAM-D score	Pre Rx (n=30)	19.90 ± 4.45	<0.001*
	Post Rx (n=30)	9.5 ± 4.84	
BSIS Score	Pre Rx (n=30)	30.26 ± 6.49	
	Post Rx (n=30)	6.13 ± 2.40	<0.001*

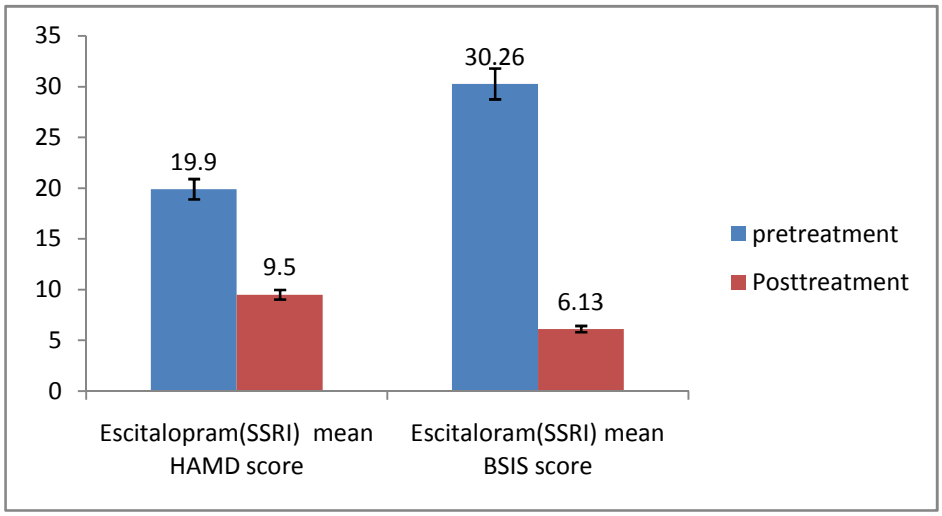

Figure 4: Escitalopram pre & post treatment mean scores of HAM-D&BSIS

Discussion

Suicidal behavior correlates with inadequate prescription of antidepressants.[7] In the United States, most antidepressant prescriptions are for female patients and most suicides are committed by male individuals. Most suicides and serious nonfatal suicide attempts are committed by individuals with major depression that is untreated at the time of death.[8] These individuals may have a higher noncompliance rate with prescribed medication, especially antidepressants with more adverse effects, such as TCAs.[9] One possible cause of higher mortality due to suicide by individuals taking TCAs relative to SSRIs is that tricyclics are more toxic on overdose and death rates due to TCA overdose are higher relative to prescription volume compared with SSRIs and other new-generation antidepressants.[10] Given earlier concerns about the safety of SSRIs in adults with depression in terms of suicide risk and more recent concerns about the safety of SSRIs in youth with depression, our results and those of Olfson et al[11], who performed a similar but less sophisticated analysis in youth, indicate that more SSRI prescriptions are associated with fewer suicides in adults and youth. As per results obtained in our study, there was: significant decrease in Amitriptyline pretreatment mean HAMD score from 21±3.90SD to posttreatment mean HAMD score 12.10±4.81SD and decreased pretreatment mean BSIS score from 32.06±5.13SD to posttreatment mean BSIS score 7.6±2.41SD. Significant decrease in Escitalopram pretreatment mean HAMD score from 19.90±4.45SD to posttreatment mean HAMD score 9.5±4.84SD and decreased pretreatment mean BSIS score from 30.26±6.49 to posttreatment mean BSIS score6.13±9.40. Decreased suicidal risk, after treatment of Amitriptyline & Escitalopram (P value significant for both treatment groups). Pregelj P et al study, 338 patients were examined who had already been prescribed antidepressants.[12] Among patients with prescribed antidepressants 273 of them had been prescribed SSRIs and 65 had been prescribed other antidepressants. Suicidal behavior (suicidal ideations, threats and attempts) was observed in 30% of patients with prescribed SSRIs and in 38% of the patients who had been prescribed other antidepressants.

However, the difference was not statistically significant (p>0.05).

Our data gives, no evidence was found that the risk of suicide or non-fatal self harm in adults prescribed SSRIs was greater than in those prescribed other antidepressants. Hall WD et al conducted a Meta-analyses of RCTs suggest that SSRIs increase suicide ideation compared with placebo but the observational studies suggest that SSRIs do not increase suicide risk more than older antidepressants.[13] If SSRIs increase suicide risk in some patients, the number of additional deaths is very small because ecological studies have generally found that suicide mortality has declined (or at least not increased) as SSRI use has increased.

The risk-benefit ratio associated with prescription of these antidepressants must be clearly favorable to explain the relationships observed in our study. The results yielded by this comparative study proved no increased suicidal risk for SSRIs or TCAs. Our results agree with studies of Isacsson G et al,[14] Markowitz JC.[15] In a study conducted by Robert D Gibbons et al, to evaluate the relationship between Antidepressant treatment and suicide attempts in adult patients. Suicide attempt rates overall as well as before and after initiation of antidepressant therapy were compared for patients who received selective serotonin reuptake inhibitors (SSRIs), new-generation non-serotonergic-specific (non-SSRI) antidepressants (bupropion, mirtazapine, nefazodone and venlafaxine), tricyclic antidepressants, or no antidepressant. Suicide attempt rates were higher prior to treatment than after the start of treatment, with a significant relative risk for SSRIs and for non-SSRIs. For SSRIs, this effect was seen in all adult age groups. Their findings suggested that SSRI treatment has a protective effect in all adult age groups. Our study agreed with Robert D Gibbons et al.[16]

In a study conducted by Pedersen AG, to evaluate the Escitalopram in major depressive disorder (MDD) and anxiety disorders. The study analysed for specific adverse events indicative of suicidal behaviour (fatal suicide, non-fatal self-harm or suicidal thoughts) in relation to treatment. The number of events was low, with no fatal suicides in the first 2 weeks of treatment. There was one fatal suicide during the full treatment period on placebo (incidence 0.1%; rate 0.003), and none on escitalopram. None of these figures were significantly different between escitalopram (n=2277) and placebo (n=1814) patients. There was no indication that escitalopram provokes suicidal behaviour compared to placebo in either MDD or anxiety disorders. Escitalopram was more efficacious versus placebo in lowering suicidal thoughts from weeks 1 through 8 in the treatment of patients with MDD. Our study correlated with Pedersen AG study [17].

In a study conducted by Yeravanian BI et al, compared the rates of suicidal behavior. [18] after discontinuation of treatment with antidepressants, and to determine the comparative rates of suicidal behaviour for patients maintained on tricyclic (TCA) vs. selective serotonin reuptake inhibitor (SSRI) antidepressants. They reviewed the charts for 521 patients with major depressive disorder and/or dysthymic disorder. Periods of active treatment or discontinuation with SSRIs or TCAs were determined. Rates of completed suicide, suicide attempts, and hospitalization for suicidality were analyzed. There was greater than a five-fold increase in risk for suicidal behaviour after discontinuation of antidepressant treatment ($P < 0.0001$). The rates of suicidal behavior during treatment with SSRIs or TCAs were similar. Suicidal behaviour in unipolar depressed patients treated with antidepressants increases substantially after medication discontinuation. This effect occurred in both patients who were maintained on SSRIs and TCAs. The findings support a possible protective effect on suicidal behaviour for both SSRIs and TCAs. The main limitation of this study was there is no control group. This comparative study the efficacy of two drugs was compared with each other. The placebo effect could not be evaluated for ethical reasons because the treatment groups also involved severe depression with high risk.

Conclusion

Suicidal risk is the one of the major problem in depression patients, who are not treating with antidepressants. Now a day's Selective Serotonin Reuptake Inhibitors(SSRIs)and Tricylic Antidepressants(TCAs) are using more to reduce depression and suicidal risk . In this study after taking Escitalopram (SSRI) and Amitriptyline (TCA), reduces suicidal risk in depression patients ,when compared to before treatment .But in this study sample size is less and less studies were done in India ,so further studies can be done in large population.

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